Clinical lectures on mental diseases / by T.S. Clouston.

Contributors

Clouston, T. S. 1840-1915.
Augustus Long Health Sciences Library

Publication/Creation

London : J. & A. Churchill, 1898 (Edinburgh : Neill)

Persistent URL

https://wellcomecollection.org/works/qteujvqu

License and attribution

This material has been provided by This material has been provided by the Augustus C. Long Health Sciences Library at Columbia University and Columbia University Libraries/Information Services, through the Medical Heritage Library. The original may be consulted at the the Augustus C. Long Health Sciences Library at Columbia University and Columbia 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

DUPLICATE
HX00016950

RC601 C62 1898

Columbia University
in the City of New York

College of Physicians and Surgeons

Reference Library

CLINICAL LECTURES

ON

MENTAL DISEASES

Digitized by the Internet Archive
in 2010 with funding from
Open Knowledge Commons

http://www.archive.org/details/clinicallectures00clou

COLGATE
UNIVERSITY
LIBRARY

COLUMBIA UNIVERSITY LIBRARY

PLATE I.

THE VERTEX OF THE BRAIN IN ADVANCED GENERAL PARALYSIS

FRONTISPIECE, FOR DESCRIPTION SEE PAGE IX.

CLINICAL LECTURES

ON

MENTAL DISEASES

BY

T. S. CLOUSTON, M.D. EDIN., F.R.C.P.E.

PHYSICIAN-SUPERINTENDENT OF THE ROYAL EDINBURGH ASYLUM FOR THE INSANE
LECTURER ON MENTAL DISEASES IN THE UNIVERSITY OF EDINBURGH
FORMERLY CO-EDITOR "JOURNAL OF MENTAL SCIENCE" AND MORISON LECTURER
AUTHOR OF "THE NEUROSES OF DEVELOPMENT."

FIFTH EDITION

LONDON
J. & A. CHURCHILL
7 GREAT MARLBOROUGH STREET
1898

PREFACE TO FIFTH EDITION.

A Medical Book that is coming out in its Fifth Edition should need no Preface. The demand for it has absolved its Author from any further explanation of its existence. That it was needed, and has so far supplied a need, might be held as proved; and this should be sufficient proof, too, of its merits and exculpation enough of its faults.

The study of Mental Disease has now entered on a new era. It has, for the first time, become compulsory on all medical students. This should vivify and stimulate the teaching of it, and affect the study and investigation of the subject in ways and degrees as yet unknown to us. Fortunately, the subject lends itself to teaching in which every intelligent student will be more or less interested. I have always maintained that no subject in his course will keep the average student so mentally alert as a good clinical lecture on mental diseases, well illustrated by patients. I trust we teachers will be enabled now, more than ever, to present to our students, in addition to the details of our subject, the relationship of the disturbed mental functions of the brain to general Medicine and Surgery, and so prevent our department from sinking into a specialty in the bad sense. Mind and brain dominate all else in the organism; and their diseases, if properly studied, can never be narrowing.

348419

In regard to how this Edition differs from the last, I can only say it is mostly a reprint, but yet I have endeavoured to embody in it the few advances in our knowledge that have taken place during the past two years. I have especially directed attention to the important therapeutic measure of using thyroid extract in certain cases of insanity, in the way devised by Dr Lewis Bruce, now one of our medical staff here. I have taken advantage of the original pathological work done here, and in the Scottish Asylums pathological laboratory, in that time by Dr W. F. Robertson, under whose direction the new Plates XVI., XVII., XVIII. and XIX., which illustrate the recently discovered facts about chromatolysis, atrophies, and hypertrophies in the neurons, have been prepared.

September, 1898.

CONTENTS

LECTURE I.

PAGE

THE CLINICAL STUDY OF MENTAL DISEASES, . . . 1

LECTURE II.

STATES OF MENTAL DEPRESSION—MELANCHOLIA (PSYCHALGIA), 26

LECTURE III.

MELANCHOLIA (PSYCHALGIA)—*continued*, ... 82

LECTURE IV.

STATES OF MENTAL EXALTATION—MANIA (PSYCHLAMPSIA), . 137

LECTURE V.

STATES OF ALTERNATION, PERIODICITY, REMISSION, AND RELAPSE IN MENTAL DISEASES (FOLIE CIRCULAIRE, PSYCHORHYTHM, FOLIE A DOUBLE FORME, CIRCULAR INSANITY, PERIODIC MANIA, RECURRENT MANIA, KATATONIA), . 219

LECTURE VI.

STATES OF FIXED AND LIMITED DELUSION (MONOMANIA, MONO-PSYCHOSIS, PARANOIA), ... 251

LECTURE VII.

STATES OF MENTAL ENFEEBLEMENT (DEMENTIA, AMENTIA, PSYCHOPARESIS, CONGENITAL IMBECILITY, IDIOCY), . 280

LECTURE VIII.

PAGE

States of Mental Stupor ("Acute Dementia," "Primary Dementia," "Dementia Attonita," Psychocoma), . 306

LECTURE IX.

States of Defective Mental Inhibition (Impulsive Insanity, Volitional Insanity, Uncontrollable Impulse, Psychokinesia, Hyperkinesia, Inhibitory Insanity, Insanity without Delusion, Exaltation or Enfeeblement, Affective Insanity). The Insane Diathesis, . 329

LECTURE X.

General Paralysis (Dementia Paralytica), ... 379
Paralytic Insanity (Organic Dementia), ... 420

LECTURE XI.

Epileptic Insanity, ... 435
Traumatic Insanity, ... 459

LECTURE XII.

Syphilitic Insanity, ... 464
Alcoholic Insanity, ... 480

LECTURE XIII.

Rheumatic and Choreic Insanities, ... 494
Gouty or Podagrous Insanity, ... 504
Phthisical Insanity, ... 505

LECTURE XIV.

Uterine or Amenorrhœal and Ovarian Insanity, . 522
Hysterical Insanity, ... 528
Insanity of Masturbation, ... 532

LECTURE XV.

Puerperal Insanity, ... 544
Insanity of Lactation, ... 562
Insanity of Pregnancy, ... 569

LECTURE XVI.

The Developmental Insanities.

PAGE

The Insanities of Puberty and Adolescence, . . 576

LECTURE XVII.

The Insanities of Decadence.

Climacteric Insanity, ... 611
Senile Insanity, ... 622

LECTURE XVIII.

Rarer and Less Important Clinical Varieties of Mental Disturbance.

Anæmic Insanity.—Diabetic Insanity.—Insanity of Bright's Disease.—Insanity of Oxaluria and Phosphaturia.—Insanity of Cyanosis from Bronchitis, Cardiac Disease and Asthma.—Metastatic Insanity.—Post-febrile Insanity.—Influenza and its Mental Relationships.—Insanity from Deprivation of the Senses.—Insanity of Myxœdema.—Insanity with Exophthalmic Goitre.—Delirium of Young Children.—Insanity of Lead Poisoning.—Post-connubial Insanity.—Pseudo-Insanity of Somnambulism.—Insanity following Surgical Operations, ... 650

LECTURE XIX.

Medico-Legal and Medico-Social Duties of Medical Men in Relation to Insanity, ... 669

LECTURE XX.

A Summary of the General Treatment and Management of Insanity looked at as a whole, and on the Use of Hypnotics, Sedatives, and Motor Depressants, . 690

Index, ... 719
Description of Plates, ... 729–746

DESCRIPTION OF THE PLATES.

PLATE

I. (*Frontispiece*).—Appearance of the vertex of one hemisphere of the brain in a case of very advanced General Paralysis. *a*, Skull-cap condensed. *b*, Anterior third of brain, as seen when dura mater was first raised, showing thickened milky arachnoid dotted over with small white spots, with the opaque turbid compensatory fluid under it, and the tortuous dilated veins and congested vessels, the convolutions showing dimly through. *c*, Middle third of brain, showing the appearance of the convolutions after the pia mater has been removed. They are congested, and the outer layers of grey substance have been torn away in irregular patches, from the most projecting part of many of the convolutions having adhered to the pia mater and been removed with it. The portions so removed have left ragged eroded-looking spaces where the grey substance looks softened, while the outer layer looks rather hard and opaque on its surface. *d*, The pia mater stripped from middle third of brain, hanging down, concealing posterior lobe of brain, and showing the appearance of its inner surface with the portions of the convolutions adhering to it. It is congested and thickened, so that, instead of being like the normal pia mater, a delicate filmy transparent membrane, it is a tough, thick, spongy-looking texture.

II. Five microscopic Drawings, showing pathological changes in (1) Semi-lunar Ganglion; (2) Cortex; (3) Epithelium of Ventricle; (4) Artery; (5) Cortex (atrophy), . 729

III. Facsimile of a letter written by a maniacal patient, showing incoherence, rapid change of ideas, delusions, hallucinations of sight, an insane association of ideas, and an insane symbolism, ... 730

PLATE		PAGE
IV.	Irregular Vascularity of Anterior Lobe of Brain from a Case of Acute Mania, ...	731
V.	A Chart showing the Relative Prevalence of Melancholia, Mania, and General Paralysis, . . .	732
VI.	Great and Irregular Thickening of the Skull-cap in a Case of Chronic Insanity with Brain Atrophy, . .	733
VII.	Absorption of White Substance of Brain due to Syphilitic Arteritis ; with Persistence of Grey Matter, . .	734
VIII.	Microscopic Drawings of Cortex in a Case of General Paralysis and a Case of Chronic Mania, . .	735
IX.	Microscopic Drawings of Cortex in Two Cases of Epilepsy,	736
X.	Standard Types of Palate, and Specimens of Neurotic and Deformed Palates, ...	737
XI.	Sections of Standard Palates, ...	738
XII.	Sections of Palates in Adolescent Insanity, . .	739
XIII.	Six Microscopic Drawings illustrating the Progressive Stages of Pigmentary and Granular Degeneration in Cells of Brain Cortex, ...	740
XIV.	Two Microscopic Sections of Cortex in General Paralysis, showing Changes in Pia, Capillaries, Neuroglia, and Nerve Cells, ...	741
XV.	Ten Microscopic Drawings, showing Changes in Capillaries, Arterioles, and Cells in General Paralysis, Alcoholic Insanity, Epileptic Idiocy in contrast with Fœtal and Normal Cells, Senile Insanity, and Secondary Dementia, ...	742
XVI.	Four Microscopic Drawings showing normal Nissl Bodies and slight Chromatolysis in Mania, . .	743
XVII.	Four Microscopic Drawings showing advanced Chromatolysis in cases of Mania, Delirious Mania, Melancholia, and General Paralysis, ...	744
XVIII.	Two Microscopic Drawings showing a normal Neuron of Brain Cortex in health, and one from a Case of Acute Mania showing Varicose Hypertrophy of Axis-cylinder process, ...	745
XIX.	Two Microscopic Drawings showing Varicose Atrophies from a Case of Acute Mania, ...	746

Fuller descriptions of these Plates are given opposite each.

COLUMBIA
UNIVERSITY
LIBRARY

CLINICAL
LECTURES ON MENTAL DISEASES.

LECTURE I.

THE CLINICAL STUDY OF MENTAL DISEASES.

Clinical and physiological study of Mind—Temperaments and diatheses—Education—Heredity—Mind influenced by other Organs than Brain—Alimentation—Reproduction and its Mental relationships—Clinical mode of studying Mental Symptoms—Nomenclature of Mental Diseases—Classification of Mental Symptoms—Skae's Clinical Classification—Some important Anatomical, Physiological, Psychological, and Pathological considerations to be kept in mind in the study of Mental Diseases—The Method of Examining a Patient supposed to be Insane, and the Rules to be Observed—Home or Asylum Treatment.

Temperament and Diathesis.—The student of mind from the clinical and physiological points of view is met on the very threshold by the obvious fact that it differs enormously in its normal manifestations in different persons and sexes, in different stages of life, and in different races. He sees, too, that it is manifestly influenced by the other functions of the organism, and the organs through which those functions are performed. These facts prepare him to accept to some degree, at least, the generalisations that previous students of the subject have made as to the existence of different mental

types in persons of the same and different ages and races, types associated with bodily characteristics—the doctrine of temperaments and diatheses. He sees, for example, that there are certain persons in whom the nervous functions are very active, and seem specially to dominate the other functions. Such persons are hypersensitive, move quickly, and think clearly, these qualities being impressed on the form, contour, and nutrition of the whole body. He soon comes to observe that persons with such a neurotic diathesis are liable to diseases special to themselves, and that when they suffer from ordinary diseases, the neurotic predominance in their constitutions often affects the character and duration of such diseases. No physician of experience but knows that insanity, neuralgia, hysteria, paralysis, and convulsions are more common among persons of this type and their children than among the general population. It is a well-known fact that in certain cases of this type, acute rheumatism, for instance, will attack the brain and cord rather than the joints, producing coma or chorea, and that even the syphilitic poison will by preference attack the neuroglia in such neurotic constitutions, and that when such people suffer from fevers they are very apt to be delirious. The special study of mental diseases should throw much light on the mental and nervous element and how it should be observed and treated in all diseases and injuries.[1]

Education.—We find that not only heredity, temperament, and diathesis must be taken into account, but also the education the brain has been subjected to. I commonly find the best marked "types" of mental disease among my educated patients. The disease is, in fact, far more specialised among the educated and hereditarily cultured. It is often a matter of keen regret to me that for clinical teaching I am not able to show the finest examples of disease to my students, because they are private patients.

[1] "The Mental and Nervous Element in Disease," by the author. *Brit. Med. Journal*, Jan. 18, 1896.

Heredity.—The facts of nature compel the physician to see that purely mental and moral qualities and mental defects are transmissible from parent to child, and prepare him for the great part that heredity plays in psychological development and in mental disease. It has not yet been proved statistically whether a man's features or the acuteness of his moral sense are most apt to be transmitted to his children or grandchildren, but I am strongly of opinion that the latter will be found to be equally so with the former.

Organic Unity.—The medico-psychological student finds that, in addition to the influence of temperament, diathesis, and heredity, the working of mind in each individual is influenced daily by other organs than the brain. He finds the so-called animal and organic functions and propensities so interwoven with the purely mental functions, such interaction and re-action between them all, that he instinctively forms the conclusion and acts on it, that he must look on the whole man—body and mind—from the point of view of an organism whose whole needs and capacities exhibit unity and solidarity throughout. Take, for instance, the function of alimentation. No doubt the swallowing, digestion, and absorption are chiefly mechanical and chemical processes, performed in a living laboratory, yet he would be but a blind and narrow-sighted observer who failed to see the enormous mental and moral influence that the desire for food, the appetite for food, and the varied pleasures, organic and conscious, that suitable food produces. He would soon in his practice meet with cases where in rational men a badly-cooked dinner, or certain unsuitable foods, poisoned the blood, and made life not worth having to themselves, and a torment to those about them. And a wider view would show that different kinds of food affected the mental development of whole races of men; while the want or poverty of food had made civilised men into wild beasts, as during the French Revolution, or among shipwrecked sailors. The absolute dependence of the appetite for food on brain and ganglionic

integrity and sound working is so often seen by physicians, that they need no physiological proof that this appetite is a brain function. What stops the appetite at once when sudden fear or joy is felt? Through what organ is it perverted during pregnancy or in hysteria?

Reproduction.—Take a function still more nearly affecting mentalisation, that of the reproduction of the species. What practical student of mind can disregard it? What physician can overlook the part it plays? How directly it influences the whole affective life and history of mankind! How the ascetic religionists of all creeds, with ideal *a priori* standards of life before them, have striven to set themselves free from its influence on their minds and lives! What attempts have been made to degrade it into something almost criminal and brutish in one age, to ignore it in the next, and to idealise it in the next! The psychological physician must simply accept the facts of physiology, and regard man as a whole, mind and body. So regarding him, he is every day beset with problems that imply consideration of the reproductive functions of the human species, and their effects, direct and indirect, on the minds of his patients. And the sooner he begins to regard the whole matter from the physiological and professional point of view, just as the obstetrician does his work, the better for himself and his patients. It will often need all his physiological knowledge and his psychological study, combined with his common sense and general knowledge of human nature, to expiscate the mental sympathies and aversions, the reflex and sympathetic irritations and impulses, and the paralysed volitions of the neurotic among his adolescent, hysterical, puerperal, and climacteric patients.

Questions to be Asked.—Those students who attend my clinical lectures will find that there are few questions I shall so often ask as those—"What sort of man was this when he was reckoned well in mind?" "How does he now differ from his state then?" "Are his present mental peculiarities evolutions of his temperament?" "Are they connected with

his diathesis?" "What is the exact nature of the mental disturbances present?" "Is the judging, the feeling, the controlling, the resistive powers, the memory, the attention, or the imagination affected? and if so, in what degrees and ways?" "Is there general mental exaltation, depression, or enfeeblement present?" "Are the mental symptoms fixed or changing?" "Is the sleep function interfered with?" "Do those disturbances bear relation to any disturbance of the great functions of the body?" "What bodily functions are disordered along with the mental?" "Was the onset of the mental disease connected with any functional evolution such as puberty, with any ordinary physiological process such as menstruation, or with any extraordinary physiological cataclasm such as childbirth?" "Are any of the other great functions of the nervous centres, such as motion or sensibility, impaired? and if so, whether primarily or secondarily to the disordered mentalisation?" This is the clinical mode of studying mental disease, founded on a physiological basis. It implies something far more than merely classifying the mental symptoms of your patients, and ticketing the various groups with a name. You can easily imagine the same mental symptoms to exist, and, as a matter of fact, they very often do exist, in a girl of 15 entering on puberty and in a puerperal woman, but in the latter case the bodily symptoms would be quite different from the former, the temperature perhaps being 103°, the lochia absent, the tongue dry, the pulse feeble, the uterus septic and irritated, and the general condition so weak that a few more steps downward would lead to death; while in the former the strength would be well kept up, the pulse good, and the temperature but little raised. Both cases, looked at from the point of view of mental symptoms, would be called acute mania, and yet they would be quite different in etiology, in bodily symptoms, in prognosis, and in treatment.

We next come to the question of how far mere temporary causes, such as changes in the blood supply, excesses of work,

emotional strains of all kinds, or reflex irritations, affect the mental energy of the brain, but still keep within a line that may be, and ought to be, reckoned physiological. If a man works till he cannot any longer lift his arm, we do not call it paralysis; if he sleeps so soundly afterwards that no ordinary stimuli will awake him, we do not call it coma: we place neither condition out of the physiological into the pathological state. So, if a man's heart is made glad by wine, or by extraordinary good news, and he shows many signs of mental exaltation unusual in him, if he loses blood or has bad news, and is profoundly depressed, we still call these states physiological, and do not count them pathological mentalisation at all. A man's power of judging and comparing, his emotional reactiveness, his inhibitory power, may all be so far paralysed as to be in abeyance for the time, and yet we may count him free from mental disease. Nay, I have seen two men in exactly the same condition for the time being, so far as mental symptoms were concerned, and I counted the one sane and the other insane. When the limits of the physiological are passed, and a man enters on a pathological state of mind, we are often utterly unable to tell the exact line where the one ends and the other begins. As Maudsley says, you might as well attempt to draw the line between light and darkness.

The Mental Clinician.—For the study of mental disorders, while the general state of mind must be the same as that in which we study ordinary bodily diseases, while it is essentially the clinical faculties that we put into exercise, yet there needs to be superadded a different mode of finding out what the morbid symptoms are, more of comparison of subtle mental and moral changes with health, more scepticism as to what the patient says about his own symptoms, and often far more strain in the analysis of character and motive, and in the effort to draw out the patient into a veracious and open state of mind. The constant effort to interpret the clinical meanings of subtle changes in your patient's face and manner,

and the significance of what he says and how he says it, is wearying; while the difficulties of delicately leading him over the ground where his mental deficiencies exist are often excessively great. His every word and act must be closely scrutinised, for they form part of the symptoms on which your diagnosis rests. An initial difficulty with the uninstructed is in the want of terms to express the mental symptoms. I have heard a man try to describe the symptoms of an ordinary case of acute delirious mania to me, and utterly fail to give any connected idea of the patient's state. Such a description as this I have often got: "He won't do anything you tell him. I can't make anything of him. He talks a lot of nonsense. He's just mad."

Classification.—Though our nomenclature for the deviations from normal mentalisation is as yet unscientific and incomplete, and must one of these days be revised, yet most abnormalities are capable of being in some way described and classified. The mental symptoms met with have been classified, and this is the first classification of mental diseases to which I shall direct your attention. It is largely only a classification of symptoms, not of real diseases, but those symptoms are most important and stand out in dignity and character from the ordinary symptoms of other diseases. In themselves, and apart from the cortical disturbances from which they result, they are well worthy of earnest study and separate classification. Mind is universally and instinctively recognised to be "the greatest thing in man." As symptoms they are far more interesting than most diseases, for they constitute a part of the general study of mind and of human nature. The nomenclature this classification gives us is essential for our study of disordered mind, and its terms have become current in medicine, jurisprudence, and general literature. Pinel's and Esquirol's original classification of mental diseases on this principle has undergone many modifications and extensions, and I, like my predecessors, have introduced some changes. The principles on which it is founded are, to take one example,

that *all the states of morbid mental depression and painful feeling* are classed under one head, *Melancholia*, just as all the painful disorders of sensibility are called Neuralgia. Indeed the melancholias bear a close analogy to the neuralgias. In the one case the emotional functions of the brain are affected, in the other the common sensibility. Most cases of melancholia might be called mental pain, or *Psychalgia*.[1]

Then *all the states of morbid mental exaltation or excitement without depression* are classed together and called *Mania*, just as the motor storms and explosions are called convulsions, eclampsias, epilepsies, or spasms. A typical case of mania may be considered like a mental chorea or eclampsia. There is present disordered, incoherent, involuntary, purposeless mentalisation. Mania might be called a *Psychlampsia*.

There are other cases whose symptoms consist of *regularly alternating mental states*, usually of depression and exaltation, this rhythmical recurrence of mental pain and spasm going on during the whole course of the disease, and constituting its essential distinctive character. I think a better name for this than the one given to it by Baillarger, who first described it, viz., *Folie Circulaire*, would be *Alternating Insanity* (*Psychorythm*). Though only described as a variety of mania by him, yet I think its characters are so distinctive as to vindicate for it a special place in a complete symptomatological nosology, which I have accordingly given it. Its study, as we shall see, leads naturally to the investigation of the part played by the laws of nervous periodicity in mental and nervous disorders.

The fixed delusional states without excitement or depression come next, the *Monomanias*. Just as we now separate the monospasms and the local convulsions from the general eclampsias, I think it is better to place the cases of mono-

[1] It must be understood that I only devised this nomenclature to enable students better to understand the psychoses by analogy with the diseases with which they were already familiar, and for class purposes. I have no wish to bring it into general use in medicine.

mania by themselves, instead of calling them, as some authors do, partial mania. Monomania is sometimes analogous to a paræsthesia. If a man hears distinct articulate words which are merely the moanings of the wind to others, and if those subjective false voices call him bad names, he becomes suspicious of the people about him; this may become a morbid habit of his mind, without any special excitement or depression, and we say he labours under monomania of suspicion. This is one way in which delusion may arise. A true impression from a nerve of common sensibility may be misinterpreted, as when a man has cancer of his stomach that causes him real gnawing pain, and he says he has rats inside him that are eating his vitals. It may help you to understand this condition of partial insanity better if you think of it as a *Monopsychosis*. Closely connected with this class of mental cases is the wide but ill-defined series of groups that in Germany and America are called *Paranoia*.

When the morbid condition is *one of general mental enfeeblement* it is called *Dementia* or *Amentia*, both very good terms. Dementia I would restrict to incurable conditions of enfeeblement commonly secondary to other mental states. Amentia means enfeeblement from birth, constituting *Idiocy*, or *Congenital Imbecility*. The conditions they represent are analogous to the anæsthesias, pareses, and paralyses that result when the sensory and motor centres of the brain are respectively diseased. They might be called *Psychoparesis*.

The next on the list, I have placed there because it fills up a gap that existed in former classifications of mental symptoms. It represents the *outward negation of mentalisation resulting from disease*, where the patients are insensible to external influences, will not speak, where the faculty of attention appears to be quite gone, and where they appear not to think or feel at all. I can devise no better name than the usual one of *Stupor*, Amentia being already appropriated to Idiocy. "*Psychocoma*" would express this condition.

Inasmuch as physiology has clearly demonstrated the exist-

ence of centres in the nervous system that control other nervous centres, giving the name of inhibition to the function of the former; and we find that there are certain cases of mental disease, where an analogous function of the higher mental centres seems to be deranged, where there are, in fact, *states of want of inhibitory mental power without marked depression, exaltation, delusion, or enfeeblement*, I have put those under a special class, viz., *States of Defective Mental Inhibition.* Those might be called, for the sake of keeping up a scientific correspondence in the nomenclature, *Psychokinesia.*

Lastly, there is a mental state graphically described by Dr Maudsley, and which certainly represents facts in nature, *the insane temperament* or *neurosis insana*, or, to keep up uniformity of the classification, *Psychoneurosis.* This consists more of potentialities of psychosis, of extraordinary and unusual assortments of mental faculties, of states of feeling that are unaccountable and uncommon, and of courses of conduct that seem merely automatic and incapable of volitional regulation—all these things being the result of a hereditary neurosis in a brain whose various functions and parts are unconformable, or whose dynamical constitution is unstable and eccentric. The more recent term *Paranoia* includes some of those cases and some of those of monomania. The following therefore is the *Symptomatological Classification* I shall use, with the chief varieties of each form:—

1. *States of Mental Depression* (*Melancholia, Psychalgia*):—*a.* Simple Melancholia. *b.* Hypochondriacal Melancholia. *c.* Delusional Melancholia. *d.* Excited Melancholia. *e.* Resistive (obstinate) Melancholia. *f.* Convulsive Melancholia. *g.* Organic Melancholia. *h.* Suicidal and Homicidal Melancholia.

2. *States of Mental Exaltation* (*Mania, Psychlampsia*):—*a.* Simple Mania. *b.* Acute Mania. *c.* Delusional Mania. *d.* Chronic Mania. *e.* Ephemeral Mania (*Mania Transitoria*). *f.* Homicidal Mania.

3. *States of Regularly Alternating Mental Conditions* (*Folie Circulaire, Psychorythm, Folie à Double Forme, Circular Insanity, Periodic Mania, Recurrent Mania, Katatonia*).

4. *States of Fixed and Limited Delusion* (*Monomania, Monopsychosis*):—*a.* Monomania of Pride and Grandeur. *b.* Monomania of Unseen Agency, of Suspicion, of Persecution and Fear. Paranoia.

5. *States of Mental Enfeeblement* (*Dementia and Amentia, Psychoparesis, Congenital Imbecility, Idiocy*):—*a.* Secondary (Terminal) Dementia (*following Mania and Melancholia*). *b.* Primary Enfeeblement (Imbecility, Idiocy, Cretinism, *the result of deficient Brain Development, or of Brain Disease in very early life*). *c.* Senile Dementia. *d.* Organic Dementia (*the result of gross Organic Brain Disease*). *e.* Alcoholic or Drug Dementia.

6. *States of Mental Stupor* (*Stupor, Psychocoma*):—*a.* Melancholic Stupor, "Melancholia Attonita." *b.* Anergic Stupor, "Primary Dementia," "Acute Dementia," "Dementia Attonita." *c.* Secondary Stupor (*transitory after Acute Insanities*).

7. *States of Defective Inhibition* (*Psychokinesia, Hyperkinesia, Impulsive Insanity, Volitional Insanity, Uncontrollable Impulse*):—*a.* General Impulsiveness. *b.* Epileptiform Impulse. *c.* Animal, Sexual, and Organic Impulse. *d.* Homicidal Impulse. *e.* Suicidal Impulse. *f.* Destructive Impulse. *g.* Dipsomania. *h.* Kleptomania. *i.* Pyromania. *k.* Moral Insanity.

8. *The Insane Diathesis* (*Psychoneurosis, Neurosis Insana*).

All these varieties of mental disease commonly find their origin in and flow out of excesses, defects, and irregularities in the physiological functions of the brain. They may all arise from innate morbid tendencies in the organ, or from eccentric causes within or without the organism. The brain responds by thought, by feeling, by voluntary, instinctive and reflex acts, to almost everything in the universe outside it, and to every tissue, organ, and energy within the organism, and no

two brains are alike in their reactions. If its constitution is unsound therefore, or if its conditions of energising are unphysiological, the causes being innumerably various without and within for aberration and derangement, it results that the symptoms are almost as various as the causes of mental disease. More than of any other disease, it may be said that no one ever saw two cases precisely alike. This or any other classification, therefore, only represent types and genera, not species. The reactiveness of the cortical cell differs in every human being, just as his face differs from every one else, and reactiveness is the brain quality chiefly affected in insanity.

Clinical Classification.—Such was until recently the usual mode of studying and classifying mental diseases. It assumes that the mental symptoms are the chief things about those diseases to be observed. The late Dr Skae, following Morel and Schrœder van der Kolk, devised and directed special attention to another mode of looking at mental disease, which we may call the clinical method. It endeavours to take account of causes, and of the relationship the different varieties of the disease have to the great physiological periods of life, and to the activities of the body other than the mental—in other words, it regards the whole *natural history* of the disease.

The chief varieties of this *Clinical Classification* (which includes the *pathological varieties* of mental disease) are the following:—

1. General Paralysis. 2. Paralytic Insanity (*Organic Dementia*). 3. Traumatic Insanity. 4. Epileptic Insanity. 5. Syphilitic Insanity. 6. Alcoholic (and Toxic) Insanity. 7. Rheumatic and Choreic Insanity. 8. Gouty (Podagrous) Insanity. 9. Phthisical Insanity. 10. Uterine and Menstruational Insanity. 11. Ovarian Insanity. 12. Hysterical Insanity. 13. Masturbational Insanity. 14. Puerperal Insanity. 15. Lactational Insanity. 16. Insanity of Pregnancy. 17. Insanity of Puberty and Adolescence. 18. Climacteric Insanity. 19. Senile Insanity.

There are a number of more rare and less important clinical varieties of insanity, which I shall just allude to, viz. :—

1. Anæmic Insanity. 2. Diabetic Insanity. 3. Insanity from Bright's Disease. 4. The Insanity of Oxaluria and Phosphaturia. 5. The Insanity of Cyanosis from Bronchitis, Cardiac Disease, and Asthma. 6. Metastatic Insanity. 7. Post-Febrile Insanity. 8. The Mental Concomitants and Results of Influenza. 9. Insanity from Deprivation of the Senses. 10. The Insanity of Myxœdema. 11. The Insanity of Exophthalmic Goitre. 12. The Delirium of Young Children. 13. The Insanity of Lead Poisoning. 14. Post-Connubial Insanity. 15. The Pseudo-Insanity of Somnambulism. 16. Insanity following Surgical Operations.

The classification of the future will be one on a pathological basis. But we are far from that yet, and any premature attempts to construct such a classification, not founded on a sound brain physiology and psychology, must do more harm than good. Certain crude suggestions for classifying mental disturbances by means of the vascular and lymphatic changes that can be recognised in some cases, especially in acute insanity, seem to miss the essential relationship of those structures to the neurine. The vessels and lymphatics are the servants of the nerve cells, not their masters, except in rare and exceptional cases. The original stimulus towards vascular and other intra-cranial abnormalities comes from the trophic and vaso-motor centres within the brain cortex. You might as well classify the men and women in a city through the clothes they wear, the houses they dwell in, and the tools they work with.

In studying mental diseases, one must constantly refer to the general functions of the brain, and I have thought it might be useful to point out, in the following form, the bearings of some of the most important anatomical, physiological, psychological, and pathological considerations on that study :—

There is in the brain an extreme complexity of tissues, fibres, and groupings, and an extreme delicacy of structure, these corresponding, no doubt, to the multiformity, complexity, and delicacy of its functions. There is an obvious interdependence of parts, a localisation of structures and functions, and yet a real solidarity of the whole brain in structure and function.

Hence we are apt to have many functions and structures involved in mental diseases—motor, sensory, vaso-motor, and trophic. Localisation is never complete, and solidarity is never perfect.

There is the most direct connection, structurally and functionally, of every organ, of every tissue, and of every function with the brain convolutions, each being separately "represented" there, and their influence is mutual, powerful, and constant.

Hence peripheral lesions and disordered functions of organs cause mental disturbances, and *vice versa*. The mental symptoms often take their special character from the peripheral function disturbed.

Developmentally and functionally one nervous ganglion or group of cells is "higher" than another, and the higher usually controls or stops the action of the lower.

Hence disorder of the higher centres is far more important than the lower.

Looking at the brain convolutions, their neurons, fibres and granules differ in shape and size in different parts of the organ. They are placed in distinct layers, and arranged in groups, those also differing in different regions. They have been demonstrated to be different in appearance in young children, in idiots, in old persons, and in many cases of insanity, from what they are in a healthy adult (see Pl. xiii. figs. 2-6, and Pl. xv. figs. 6-10).

Hence we have a structural basis for certain forms of insanity, and for limited mental disturbances, and therefore a definite pathological histology of many forms of the disease may be confidently looked for in the future (see Pls. xiii. and xv.).

There are some reasons to suppose that parts of the brain convolutions can energise in different ways, one part being capable of doing the work ordinarily done by another. Then every part of the brain is double.

If this is so, damage to, or exhaustion of, one portion of brain convolutions [as in Goltz's and Nothnagel's experiments] need not necessarily cause complete or irretrievable loss of mental functions.

The brain has a reflex and auto-

In mental disease, this reflex

matic action. Most of its functions are affected by this, and may be excited into activity or may be disturbed in a reflex manner by indirect stimuli, as the heart is from stomach derangement. Most of the reflex functions of the brain may be unattended by consciousness; or consciousness without volition may be present in regard to mental acts and to subsequent muscular action.

The study of the physiological conditions of sleep, dreaming, and hypnotism, are most important, though as yet many of the phenomena are very obscure.

Consciousness may be complete, partial, or abolished in health.

The brain normally has necessity to energise in some direction or other; but energising vigorously in one direction will often suspend energising in others.

The brain has fixed limits of energising in all directions.

All sorts of sensations, we must keep in mind, are subjective, and depend on consciousness. The real import of most sensations, special and common, was originally only learned slowly and by interpretation and experience in childhood.

There is a tendency in the brain to propagation, diffusion, and extension of action, normal and abnormal, and there is much trophic solidarity in the whole brain, its envelopes, and the nerves connected with it, quite independently of whether the tissues are cellular or fibrous, or whether the function is originating or conducting.

function of the brain plays a most important part. Many symptoms can only be rightly explained by it. In many mental diseases the brain acts automatically; even suicidal and homicidal impulses taking place when volition and consciousness are absent.

The psychological facts of those conditions should be kept in mind in studying mental disease. No phenomena of the latter are more obscure than those of the former.

In mental disease we see those conditions from pathological causes.

In mental diseases we constantly put into active exercise certain healthy forms of energising (*e.g.*, walking, enjoying music, &c.), in order to diminish other morbid forms.

Hence the danger of causing disturbance or paralysis of function by coming too near those limits, or overstepping them.

Sensations can be misinterpreted, therefore, in mental diseases, and, as a matter of fact, many insane delusions arise in that way.

This takes place abnormally in disordered working of the organ, disordered functional conditions extending from the encephalic tissue regulating one function to that regulating others. There is a strong tendency to progressive pathological propagation of diseased processes in the brain and along the nerves. Many forms of insanity

Every mental manifestation, normal or abnormal, must be assumed to take place directly through the energising of the brain convolutions.

Mentalisation differs so enormously in degree, form, and intensity in different human beings, in the two sexes, in different races, in persons of different education, and at different ages, that any correct standard of mental health must allow a large margin of psychological difference, apart altogether from disease.

The action of "mind on mind" in healthy brains is direct, intense, and most subtle.

The quality, the power of energising and of resistance, the mode of working, the liability to disease, and the recuperative power of the convolutional brain tissue, are probably determined more largely in any individual by his heredity than by any other cause. Bad heredity may affect the whole brain and all its functions, or only a part of them.

The chief of the human instincts, appetites, and organic necessities are—

1. Love of life, with efforts to prolong it.
2. Desire to reproduce the species.
3. Love of offspring, with efforts to nourish and protect it.

are, no doubt, explained in this way. Usually the functional propagations, like the structural degenerations, take place in the line of physiological function.

Hence, wherever the "origin" of mental disease may be, or whatever may be its "causes," mental or physical, its immediate cause and seat must be in the disordered energising of the brain convolutions.

Hence the necessity for special inquiry as to the normal mental power, the normal mode of working, the education, the temperament, and the diathesis in every case of mental disease one has to study or treat.

The same is the case when the brain is disordered, and hence in psychiatry mental therapeutics are a most important means of treatment.

Hence the importance of a study of heredity in mental disease. In some form, direct or indirect, its influence is rarely absent in any case.

In every case of insanity, attention and inquiry must be directed as to whether any of these are impaired, paralysed, or perverted, or whether their normal mode of action is interfered with.

4. Social instincts in innumerable forms.

5. Necessity to energise.

6. Appetite for food and drink.

Some of these are periodic in their intensity or occurrence.

The chief faculties, looked at from the mental point of view, are perception, ideation and judgment, volition and mental inhibition, affective faculty or all that relates to feeling and emotion, memory, power of attention, representation and imagination, association of ideas, speech, and the moral faculties,—consciousness being the basis of them all.

It is important in examining a case of mental disease to go over these systematically and test them, because they are affected in different ways and degrees in different cases.

The theory of evolution, especially as applied by Herbert Spencer in elucidation of the morals, the social practices, the customs, the beliefs, the ideas, and the feelings of mankind seem complementary to our knowledge of brain physiology. The studies of Romanes and others in comparative psychology are also highly suggestive and instructive.

The doctrine of evolution seems to throw light on many cases of congenital and other mental defects by assuming that in those cases development has taken place in an incomplete or irregular manner, or that "reversions" have taken place to more primitive types of brain and mind. Hughlings Jackson's application of a complementary theory of "Dissolution" to the nervous and mental functions, also enables us to comprehend certain cases of mental diseases better than we could have done without the aid of such hypotheses.

The studies of Wundt, Ladd, &c., and the experimental school of Physiological Psychologists, are also valuable attempts to co-relate mind and brain function, by formulating some of the physical laws and concomitants of conscious states, such as reaction time, liminal sensory stimulation, &c.

Every fact that enables us to realise the necessary connection of brain-working and mind in health, and which accurately compares their relations in different abnormal conditions with the normal standard, helps our knowledge of that connection in disease, and enables us to observe the symptoms of mental disease in a more scientific way.

The great physiological periods

Hence these are very apt to be

or crises of life (dentition, puberty, adolescence, the climacteric, and senility), and the great reproductive activities (menstruation, ovulation, coitus, pregnancy, childbirth, nursing, and care of children), bring into intense activity, or throw out of action wholly or partially, great tracts of convolutional brain tissue.

Diseased or undeveloped function is usually accompanied by atrophied structure, and prolonged disturbance of function by change of structure.

The mode of energising of nervous tissue is normally spasmodic, and even explosive, in regard to certain functions. This quality is often morbidly developed in badly-constituted brains. There is reason to suppose that only comparatively limited portions of the brain can be in action at the same time, and that even the whole of the neurine tissue subserving the same limited function does not all come into activity at once.

The blood supply of the brain is enormous, and that of the grey matter of the convolutions five times the amount of the white. This grey matter needs, and uses up, far more blood than any other tissue in the body in proportion to its bulk. The vascular supply of the brain is derived from different sources. The whole encephalon is divided more or less into vascular areas, each area having slight anastomoses with its surrounding areas. It is not yet proved, but it is probable, that those areas are co-related to different functions. The whole conditions of the blood attended with danger to the normal mental balance when the convolutional tissue is bad in quality, unstable, or badly nourished, or specially liable to morbid explosions of energising. In every case of mental disease the possible influence of these should be inquired into.

Hence prolonged mental enfeeblement is usually accompanied by brain atrophy and prolonged mental disturbance by structural brain changes.

This explains in some degree the phenomena of mental explosions and functional defects being suddenly developed when the structural cause has been a gradually advancing one, *e.g.*, we see sudden mania, or paralysis, or convulsion, or unconsciousness resulting from softenings, or sclerosis, or inflammation that have been going on gradually for a long time till they reached a certain point beyond which normal function could not be performed.

Hence, when in certain forms of mental disease there is congestion or vaso-motor dilatation of those already crowded capillaries, we have serious secondary effects on the neurine and its functions. Nothing is more common after death in insanity than to find the brain substance divided into distinct vascular and anæmic areas (Plate IV.). Certain morbid appearances (*e.g.*, "pachymeningitis hæmorrhagica interna") are found within the skull, which are not found elsewhere at all. The lymphatic spaces are often found blocked up by débris. Capillary hæmorrhages

supply to the brain and within the head, are peculiar and different from any other part of the body from its being in a shut box not fully subjected to the pressure of the atmosphere, except through the vascular and lymphatic openings and foramen magnum, and from its peculiar relation to the cerebro-spinal fluid. The lymphatics are also peculiar in the brain, and this no doubt affects its circulation and nutrition. The vessels of the brain, large and small, are delicate, having little support but the pressure of a shifting fluid, and the cardiac and vascular pressure and tension are constantly varying. It would seem as if mental emotions had a more direct and powerful influence on the vessels of the head than on those of almost any other part of the body, *e.g.*, as seen in blushing, &c.

The various envelopes, and protecting and packing tissues of the brain, are most important in themselves and in their normal relationship to the brain. They derive their blood supply from the same sources.

It may be said generally that inflammation and new pathological formations—tubercle, syphilis, cancer, &c.—show a greater affinity for the non-neurine tissues and blood-vessels than for the brain itself, while the progressive degenerations tend more to affect the true nerve tissue.

Changes in the nerve cells have been clearly demonstrated by Hodge, Mann and others to take place after are common in insanity, and vascular disease is frequent, and should always be looked for, in those who die mentally affected.

In mental disease we often find more evident and constant disease in the bones, membranes, neuroglia, and epithelial linings of the ventricles than in the brain itself. When diseased they affect the neurine secondarily, or are affected by its diseases (see Plates I. II., figs. 3 and 4; VI. XIV. and XV., figs. 1 to 5).

Hence we must specially examine those non-neurine and vascular tissues, and we often find that though they are affected primarily by those new pathological formations, yet the neurine has suffered as much, structurally and functionally, as if it had been first affected.

This makes it all the more probable that the exact import of the nerve changes and degenerations, so

exercise and fatigue as compared with rested cells.

The recent investigations of Golgi, Cajal, Andriezen and others as to the relationship of the cells to the fibres, and the nature of the nervous unit, the "neuron," cannot fail to throw light on the mental working of the brain.

The recent investigations of Flechsig into the development of "nerve paths" in the brain of the child seem to make more definite our ideas of mental development.

The latest investigations regarding the normal appearance and arrangement of the "chromatic granules" of the nerve cells as seen in sections prepared by the Nissl's method are very important.

The dendrites and neuraxons of the cortical neurons must be of almost equal importance with the cells functionally.

clearly shown by Bevan Lewis and others in different forms of insanity, will yet be demonstrated.

And already disturbed and pathological conditions of the whole neuron in insanity have been demonstrated.

Flechsig has also shown that in insanity his cortical "centres of associations" and nerve paths are pathologically altered.

In several forms of insanity we already find "chromatolysis" or abnormal appearances in the granules as well as in the fibrous elements of those cells (Plate XVI.).

It has been demonstrated lately that toxic agents such as alcohol produce marked changes in those dendrites and neuraxons (Plate XVII.).

Clinical Examination of a Patient.—As to the general method of clinically examining a patient, insane or supposed to be insane, the *following rules* may be of service :—

1. Get all the information about him you can beforehand, and from the most direct sources, especially on the following points:—His heredity, temperament, habits, and generally what sort of man he was, what diseases he has suffered from, what delusions he labours under, how he is changed from his former self, whether he is morbidly suspicious and will resent a medical examination, whether he is suicidal or dangerous, whether his power of self-control is affected and in what way, and his weak points mentally—get, in fact, a good concise history of his case, especially noting the first symptoms and the general course.

2. In your interviews be in manner natural, frank, honest, fearless, sympathetic, and a good listener, assuming outwardly that your patient is sane. Do not be afraid to lead up to his delusions and mental weak points after you have gained his confidence and interest. Do not contradict or irritate until you want to test his self-control. Do not deceive him if possible. After you have satisfied yourself he is ill, try and make him believe it too. Take time; few satisfactory first examinations can be conducted in a hurry.

3. Look on his speech, manner and appearance as being, in themselves, possible symptoms of his disease; be all the time in a quiet systematic way, unobserved by the patient, testing his instincts and mental faculties (see p. 16) *seriatim* in your own mind, and be on the look-out for insane delusions or suspicions, depression of mind, exaltation, enfeeblement, lethargy and stupor, or altered feeling towards relatives and friends.

4. Note carefully the expression of the face and eyes, the articulation, the manner, the muscular movements, the writing if possible, the nutrition of the body and the conformation of head.

5. Examine the state of the pulse and temperature. Never think any examination complete without taking the temperature. Many patients labouring under the delirium of fevers and inflammations would have been saved from being sent to asylums had this been done. Examine into the condition of the tongue, appetite, digestion, bowels, and, in fact, go over all the great bodily functions. Especially find out about the sleep—whether he sleeps at all, what kind of sleep, and for how long, and whether he dreams, and of what character the dreams are; usually the sleep is "broken" and unrestful in the early stages of insanity, the patients dream much, and the dreams are unpleasant. Especially examine into the motor and sensory functions of the brain and cord, asking about headaches and neuralgic pains. Always remember that the ordinary symptoms of bodily disease may be masked by the

brain condition, so that lung and visceral diseases, injuries, &c., may exist without any consciousness on the part of the patient, or any obvious symptom whatever.

6. Remember there are three aspects to every case of insanity—the medical, which concerns you as a physician about to treat a patient; the medico-legal, which concerns you and the patient in regard to depriving him of his liberty and of the control of his affairs, and affects his responsibility to the law; and the medico-psychological, which includes all the mental problems that arise out of a study of the case.

7. Always pass before your minds the following conditions, and by exclusion determine that the case is not one of them, viz., drunkenness, drugging by opium or other narcotics, meningitis, cerebritis, brain syphilis, the fevers, sunstroke, traumatic injury to head, hysteria, the cerebral effects of gross brain diseases, simple *delirium tremens*, the temporary cerebral effect of moral shock, or the delirium that precedes death. All those diseases and conditions I have known to be sent in to asylums under my care, as labouring under ordinary insanity. Some of these may, however, lead to, or be associated with, technical mental disease, and require treatment as such.

8. In the clinical study of mental diseases, try and look on all the abnormalities present, mental and bodily, as being symptoms of the disease, and essential parts of the brain disturbance present, and not as mere accompaniments. For instance, in a case of puerperal insanity, it is not merely the delusions and mental exaltation that are the disease, but the high weak pulse, the raised temperature, the glistening eye, the constant muscular motion, the dry tongue, the uterine tenderness, the absence of lochia, the sleeplessness, the paralysis of appetite are also symptoms of the disease in a true sense, that is, they are all results or essential concomitants of the brain disturbance, of which the mental symptoms are the most striking features.

9. The patient's account of himself is not always to be relied on. He may be dying, and yet in his consciousness

have no symptom of it, so that he tells you he never was better in his life; his bowels may have been moved freely that morning, and yet he tells you he has not had a motion for a week; he may not be able to write a line, yet he says he never wrote so well in his life, &c. You must, through your reasoning, medical examination, and observation, find out what is true and what is delusion. I had once a case where a medical man certified as a delusion what an examination would have shown him to be a fact, viz., that "she said she was pregnant." Certain things of the greatest import in a case of insanity the patient is very apt to deny, such as suicidal feelings, masturbation, &c.

10. It may be needful in some cases for the patient's safety, or that of his relations, or for the preservation of his property, to practise some amount of concealment of your profession, and of the object of your visit. The man knows so well what a doctor's visit means that he will not see a doctor if he knows him to be one, or he is so dangerous and cunning that risk would be run by announcing to him the object of your visit. But the public and the friends of patients have often a most needless desire that you should practise guile where there is no necessity in the world for it. As a general rule, there is not much to fear from the insane of the respectable classes of society in this country. But cunning and suspicion are marked characteristics of many of those affected in mind.

11. Negative symptoms—silence, obstinacy, stupidity, &c.—are to be noted, and are valuable in diagnosis and treatment.

12. Compare mentally the man as you see him with the man you may have known or had described to you.

13. The chief questions you ask yourself, and the main problems that you have to solve, are the following:—Is the man mentally affected or not? If so, is he sufficiently affected to be regarded as legally insane and irresponsible? What form of insanity does he labour under? Can the brain disease be localised or its pathological character determined?

What is to be the treatment? What risks are there in the case, *e.g.*, of suicide, danger to others, convulsions, paralytic attacks, exhaustion, refusal of food, or sudden death? What is the general prognosis? How long will it be before the case recovers or dies? Is home treatment suitable or safe? or must the case be removed from home to the country, or to a hospital for the insane? Can trained reliable attendance be got? What mental therapeutics must be adopted, cheering or soothing, diverting, reassuring, checking, agreeing with him, contradicting him, or avoiding his favourite topics?

14. It is always well, in a case of mental disease, to make the relations or guardians of the patient very fully acquainted with the risks of the case, to keep them hopeful if there is any hope, to give the patient the benefit of all doubts, to guard yourself in prognosis, remembering that our knowledge of mental disease is imperfect, that the most experienced of us are deceived oftentimes, and that there are few rules in regard to brain disorders to which there are not exceptions, to take no more responsibility about sending a patient to an asylum than fairly can be laid on a medical man, making the relatives take their proper share. It is, as a general rule, better not to be too explicit about the time it may take a patient to recover. If you undertake the treatment at home, or in a private house, only do so on the understanding that the nurses or attendants are under your exclusive orders. If you have to sign a certificate of insanity for placing a patient in an asylum, or taking the management of his affairs out of his hands, remember there is often a legal risk to yourself from the patient bringing an action against you, a risk that in some rare cases it is well to avoid by even getting a letter of indemnification from a relation before you sign it.

15. In regard to the question of home or asylum treatment, it depends on many other things as well as the patient's condition. His means are the first of these. Home or private house treatment of a case of mental disease is mostly

expensive, from the skilled attendance needed. In the midst of a city, home treatment of almost any case is most difficult. Home treatment is often impossible or hurtful from the associations and surroundings aggravating the disease. If there is a very intense suicidal tendency, the risks are much greater in a private house. If there is a noise, maniacal excitement, or constant muscular motion, a private house is seldom a proper place for long. In a good hospital for the insane, most of the means of treatment, safety, skilled attendance, exercise, a properly regulated mode of life, the administration of food and medicines, can no doubt be best attained, but then there are the counterbalancing disadvantages of the harm to the patient's prospects from the cruel popular prejudices about asylums, and the patient's own feelings about it afterwards. If you can treat a case out of an asylum, and he recovers satisfactorily, it is better for you and him.

LECTURE II.

STATES OF MENTAL DEPRESSION—MELANCHOLIA (*PSYCHALGIA*).

Nearest Mental health, seen at beginning of nearly all kinds of Insanity —Physiological capacity of feeling—Physiological emotional depression—Melancholic phases of existence in all Men—The Melancholic variety of the nervous temperament and diathesis—Influence of Heredity—Crises of life—Melancholia is pathologically brain anæmia, want of trophic power, and of nutrition, causing in certain persons dynamic disturbance—*First Symptoms:* Loss of sense of well-being, of conscious enjoyment of anything, of volitional power, of spontaneity, paralysis of feeling—*Afterwards:* Delusions, loss of self-control, intense mental pain, emotional depression, psychical neuralgia, restlessness, excitement, suicidal or homicidal feelings and acts—*Bodily Symptoms:* Headaches, neuralgias, sleeplessness, falling off in flesh and colour, costiveness, indigestion, paralysis of food-appetite, facial and eye expression, attitudes and gestures and postures, skin dry, sinking and pain in epigastrium. First origin of Melancholia may be central or peripheral; perverted sensations from disease in organs; how Melancholic delusions arise; power of morbid attention on functions and organs. No distinct line between the Sane and Insane Melancholy—*Simple M.:* "Low Spirits," want of affection, want of interest in and enjoyment of life; fancies, whims, with impairment of reasoning power; not much body wasting; sometimes goes no farther; often is prelude to severe varieties, or to other forms of insanity; condition may come and go, and depend on slight causes—*Hypochondriacal M.:* Patient's depressed feelings centre round himself, and his delusions are about his bodily organs and functions; fancies innumerable in kind and variety; seldom very suicidal; differences between the sane and the insane Hypochondriac; the one talks only, the other acts and has lost his inhibitory power—*Delusional M.:* Delusions from beginning the most prominent symptoms; such delusions assigned by relatives as the "cause"; "Visceral" cases, where delusions refer to the stomach and bowels and internal organs often depend

on organic or aggravated functional causes ; prognosis in worst class of cases bad, as in all "fixed delusions" ; examples of melancholic delusions.

Mental Pain.—All the states of morbidly depressed feeling, or, as more commonly expressed, of mental depression, are comprised under the term Melancholia. Like the other symptomatological varieties of mental disease, melancholia does not admit of an absolutely precise definition. In every case there must be mental pain, but then mental pain does not alone constitute melancholia. As man's experience goes in the world at present, mental pain scarcely implies the idea of disease at all. The causes and occasions of mental pain from within and without are so common, as most men are now constituted and situated, that its presence is the rule with many, and its entire absence the exception with most. To constitute melancholia there must be disorder of brain function. A man's finger is squeezed in a vice, and he feels the most intense pain, but we do not call that neuralgia. He loses a child or a fortune, and feels intense mental pain, but we do not call it melancholia, because there is no disease. All mental brain reactions, within certain limits, in obedience to adequate causes are simply the exercise of physiological function, but when the reaction is quite out of proportion to the cause, or when the exercise of the activity of the brain induces mental pain of a certain intensity, duration, or kind without any outside cause, then we conclude that the mental portion of the organ is disordered, and we say the patient suffers from melancholia. There may be in the case certain excitants called causes—mental, moral, or physical. The man may have suffered losses, or he may have indigestion, or a badly acting liver, or he may be very anæmic, and all these things may cause mental pain and depression in a healthy brain, but they will not cause them in that amount and kind to constitute melancholia till his brain convolutions have taken on a disordered action—until their dynamical state is that of disease, not that of health.

If a man's heart is depressed in its action from a fright, we do not give this a name implying disease, unless the depression goes on long after the cause has ceased to act. This illustrates, too, the weak points of the methods of classifying mental diseases from mental symptoms alone. It is as if in cardiac diseases we should classify them as syncopes, palpitations, and anginas. Therefore, we must always keep in mind, in using such terms as melancholia, that the mental symptoms are not the disease; we must always consciously refer those symptoms to the brain convolutions in the diagnosis and treatment of mental diseases, which are simply brain disorders of different kinds in which the mental symptoms predominate. In assigning causes, we may say that peripheral irritations, and moral and mental shocks have caused the *disease;* but we must clearly keep in mind that the *mental symptoms* of the disease are the result of the disordered working of the encephalic tissue. If that remains sound in structure and working, no amount of irritation or moral shock will cause any real mental disease.

States of mental depression are, in some of their forms, of all mental diseases those that are nearest mental health. They shade off by imperceptible degrees into mere physiological conditions of mind and brain. To be able to feel bodily or mental pain implies an encephalic tissue for the purpose. To be very sensitive to pain implies that the tissue is acutely reacting to unfavourable impressions. In regard to mental pain there can be no doubt that the healthy physiological condition is one between extreme callousness to impressions and extreme sensitiveness. A man in robust health, well exercised, does not feel pain nearly so acutely, and bears it better than when he is weak and run down. Those principles apply equally to the feeling and the bearing of mental pain. The most casual study of the affective capacity in human beings shows us that it differs enormously in different persons. One man will lose his children or his fortune, or see the most terrible sights, and he will not feel keenly at all, because his

brain convolutions that subserve feeling are not in their essential nature very receptive and sensitive. Another person will be thrown into very great grief, and feel acute agony, at the loss of a favourite dog. I had a lady patient once, A. A., who would be for days depressed, and suffer mentally, if a friend did not receive her as cordially as usual any day. She suffered mental torture if a relative spoke sharply to her, and she was once absolutely paralysed in feeling and volition by the death of a sister. She had several attacks of mild melancholia produced by most inadequate causes, from all of which she recovered quickly and completely. There can be no doubt whatever that the finer moulds of brain are mostly very sensitive, and the poetic, emotional, and sympathetic natures have always been subject to states of painful depression of mind at the critical periods of life, and when the physical vigour was below par. Half the poets and men of literary genius give ample proof in their biographies and writings and in the characters they have created or founded on their own experience, that they suffered at times intense mental pain. Goethe clearly looked on a period of melancholy as one phase in the development of genius. The lives and writings of Goethe, Schiller, Carlyle, Cowper, Byron, John Stuart Mill, Hume, and George Eliot show that they all had periods in their lives when they suffered intense mental pain, and at least one of them did actually pass the undefined borderland that separates physiological mental depression from pathological melancholia. To feel intense mental pain is mostly the necessary accompaniment of the capacity to feel intense joy. The brain qualities that give intensity to the one give also intensity to the other.

We must take into consideration in every case not only the sensitiveness and the receptivity, but also the power of bearing pain—the inhibitory power against the effects of pain. Some brains possess great sensitiveness and also great power of inhibition. Those are the strong and stable brains. But when a brain is sensitive, and has little

inhibitory power, this combination is a source of weakness and of disease.

There is a morbid brain constitution which predisposes to mental pain, but that does not readily feel intense pleasure, and this is common enough among common men. It does not imply genius or strength in any way, and has no compensating advantages to its possessors. Persons with this tendency are of the nervous variety of the melancholic temperament, or perhaps, more properly speaking, have the melancholic temperament and the nervous diathesis. They are liable to lose their sense of well-being from slight causes from within and without them. Their surplus stock of animal spirits and *vis nervosa* is soon exhausted. They want emotional balance and resistive power. They are very often persons with strong unreasoning likes and dislikes, who are swayed by their instincts, which they cannot correct and guide by their reasoning power. They are often morbidly introspective and gloomily imaginative, having a faculty for finding out and exclusively looking at the dark side of everything, and are very often irritable. Bodily, they do not lay on fat at the ages when fat is physiological; their digestion is not their strong point; when tired they are sleepless.

Heredity.—Such a brain constitution is markedly hereditary, and, I think, is very apt to be derived in the male sex from the mother, and in the female sex from the father, in about 70 per cent. of the cases. It strongly predisposes to attacks of melancholia as well as to attacks of mental depression in what may be called a physiological form after many bodily diseases. In such persons, fevers, lung affections, and cardiac troubles are apt to be accompanied and to be followed during convalescence by mental depression. This is a serious complication in those circumstances, for it retards recovery and tends towards relapses. It is, no doubt, another expression of that lack of trophic and recuperative energy of the brain which we shall see is so marked a characteristic of melancholia. The great physiological crises of life—teething, puberty, adolescence,

the climacteric, senility, pregnancy, childbirth, and lactation—are apt to be complicated by attacks of the neuroses in such persons; loss of blood, over-work, want of sleep, over-anxiety, and menstruation are also commonly accompanied by depression of spirits. Children of this brain constitution often exhibit a kind of child-melancholy at a very early period. I have known such a child at five years of age become intensely depressed, cry, and moan for hours, because it was afraid of the "hell" which its mother—of the same temperament—had described as being the portion of bad boys who tore their pinafores, sinned against God, and did not obey their mammas. Precocity, over-sensitiveness, unhealthy strictness in morals and religion—for a child—a too vivid imagination, want of courage, thinness, and a craving for animal food, are characteristic of such children.

Melancholy v. *Melancholia*.—It is very difficult to draw a line of definition between mere "lowness of spirits," ordinary "depression of mind," popular "melancholy" or "hypochondria," and the pathological melancholia. They shade off into each other by fine degrees; and yet it is most important to make a distinction. The general public, who are very fond of hearing professional gossip in regard to medico-psychological problems, and of restating as gospel the illogical travesties and popularised versions of such problems which some professional men retail, have an idea that those who have studied the subject most deeply have come to the conclusion that "all men are mad"; and this because we say that no man but has his weak points of mind, and few men but are subject to mental depression or excitement, or to lose their self-control at times. Such a popular belief does harm, because it is utterly opposed to fact, and tends towards confusion and misconception in regard to a physician's most serious problems. It is necessary, therefore, to attempt definitions, even though they may not cover the whole ground.

Definition.—Mere melancholy might be defined as a sense of ill-being, and a feeling of mental pain with no real perver-

sion of the normal reasoning power, no morbid loss of self-control, no uncontrollable impulses towards suicide, the power of working not being destroyed, and the ordinary interests of life being lessened, not abolished.

Melancholia might be defined as mental pain, emotional depression, and sense of ill-being, usually more intense than in melancholy, with loss of self-control, or insane delusions, or uncontrollable impulses towards suicide, with no proper capacity left to follow ordinary avocations, with most of the ordinary interests of life destroyed, and commonly with marked bodily symptoms.

Typical cases exhibiting these two conditions are totally different and distinguishable, and the only excuses for confounding them are that they shade off into each other, that we have no absolutely definite scientific test to distinguish them, that they are both in many cases the outcome of the same temperament and diathesis, and that they both have something of the same nature, both psychologically and physiologically. Yet it is not the case that all melancholy people are liable to melancholia. A typical case of melancholia, as we shall see, runs a somewhat definite course, like a fever, and has often all the characters of an acute disease.

Frequency.—Though, in the statistics of asylums, melancholia does not appear to be the most frequent of the varieties of mental disease (see Plate V.), yet I think that if statistics of the real frequency of this disease in all its forms, mild and severe, could be got, it would be found that it is much the most common form. In its milder varieties it is a manageable disease at home, in this contrasting strongly with most cases of mania. For this reason many cases are treated at home and not sent to asylums.

As a general rule, one has less difficulty in the examination of a case of melancholia than of any other kind of insanity. The whole process of ascertaining the symptoms that are present is more like that in any bodily disease. The patient

is usually conscious that there is something wrong with him, which is not the case in most forms of insanity. It is, in fact, the sanest kind of insanity. He can often describe many of his symptoms. Many of his subjective sensations are reliable, and are very valuable in diagnosis and treatment. The diagnosis is not all a process of deduction from speech and conduct, and from objective signs. The patient will tell you in the first place, very likely, that he is ill, very unhappy and feels mental depression. In most cases melancholic patients assign as causes of their misery what are not its causes at all. Here it is where their insane delusions, their false ungrounded beliefs, come in. I have analysed the "causes" assigned by melancholics that I have had under my care during the past seven years for their own depression, and I find them to be wrong in most of the cases. As to the evolutional and purely psychological aspects of morbid conditions of depression, or of any other morbid mental conditions, I do not consider a clinical work like this to be the proper field for their discussion, but any one interested in this view of the subject, I would refer to Dr Bevan Lewis's text-book,[1] where they will find it profoundly and originally treated. He makes an earnest attempt to apply the doctrines of Spencer and the latest knowledge of brain physiology to elucidate the facts of melancholia, bringing in Hughlings Jackson's theories of "dissolution" and "different levels" of cerebral function. He starts with the thesis that in melancholia "object-consciousness" is morbidly lowered, while "subject-consciousness" is exaggerated, that there is failure in the "muscular element of thought," restricted volition in consequence, going on to "failure of personal identity." No summary could do justice to his views.

Varieties.—Melancholia occurs in many forms, with very various psychological and clinical symptoms. The following are, I think, the most common varieties, and I think the study of the disease will be made easier, and its treatment

[1] *Text-Book of Mental Diseases*, by W. Bevan Lewis, *vide* pp. 115–136.

become more intelligible, by considering those varieties *seriatim*, viz. :—

a. Simple melancholia.
b. Hypochondriacal melancholia.
c. Delusional melancholia.
d. Excited (motor) melancholia.
e. Resistive (obstinate) melancholia.
f. Epileptiform (convulsive) melancholia.
g. Organic (coarse brain disease) melancholia.
h. Suicidal and homicidal melancholia.

It must be clearly understood that those are not distinct forms of disease. Many cases combine the characteristic symptoms of more than one of those varieties. Nothing is more common than for a case to be delusional, excited, and suicidal. It is also common for a case to change in its character as it goes on, *e.g.*, a simple case to become delusional or suicidal.

Simple Melancholia.—The best way to begin the study of melancholia is to take a case of what may be called simple melancholia, that is, one that is both mild and uncomplicated, and where the affective depression and pain are far more marked than the intellectual or volitional aberrations. Such cases are very common, and most of them are never sent to asylums or come under the notice of specialists; indeed, many of them never come under the notice of any doctor at all, for it is characteristic of some of them that they have a great disinclination to consult our profession. *Such a case as the following is a good example of its mildest form :—*

A. B., a gentleman of 60, of a neurotic but not insane stock, had inherited from his mother a neurotic diathesis and a melancholic temperament, and was of a sensitive, vivacious, sympathetic disposition, and very studious habits. He had kept his brain at too full pressure nearly all his life by his ambition and volitional force. This want of adjustment I count as really an imperfection of brain constitution, where the inhibitory or volitional power is so great as to be

able to force the rest of the brain to work or suffer longer than its innate trophic and dynamic power would safely allow. In a perfectly ordered brain the fatigue of exhausted energising should be so absolute as to compel rest. There should be no power in a higher centre to compel a lower centre to do more than it is fitted for. Yet we know that this is commonly counted a great power for a man to possess —to be able to work, or think, or feel, or wake, or walk, not according to his innate capacity for these things, but according to his wish or the imagined necessity of the occasion. Carlyle once wrote to a friend that like his father he "could gar (compel) himself to work when utterly disinclined to do so." It is a dangerous power for those of a neurotic inheritance. All went on well till A. B. was about 50, when, after a big piece of intellectual work, he began to feel that he was always tired, he had a jaded feeling, his work, instead of being a pleasure, became a conscious toil,—indeed, he seemed capable of feeling no joy in life any more. It did not quite amount to a sense of ill-being, but that evidence and crown of the perfect working of every organ, the undefinable but very real feeling of conscious well-being, had left him. The common pleasures of life, the society of his wife and children and friends, were no longer delightful,—indeed, intercourse with his friends by speech or letter was distinctly wearisome, and he avoided it. His courage was manifestly lessened, and he was irritable with his children, an unusual thing with him. It seemed to him as if his wife and children were less consciously dear to him, and this alarmed him and made him ashamed. He had a feeling as if he had done something wrong to cause this—that it was a wrong to them in itself, and must be a judgment on him for some sin. His favourite authors and poets seemed to have lost much of their charm. His religion brought little comfort. His appetite was dulled; food and drinks did not tempt him, and after a meal he was uncomfortable. His sexual desire was much lessened. Some of his instincts and propensities seemed to be altered.

His bowels were costive; his skin seemed to be harsher and drier than normal; he had not the same feeling of reaction after cold bathing; he could not sleep soundly all the night through, and awoke unrefreshed; he was losing weight a little.

But all this time he was not very thin or weak, and he could appear in public or to his friends just as usual. He had the power to conceal all his symptoms from those to whom he did not want them known. There were certain curious features, too, in his case. He was always worst in the morning,—most persons with any sort of mental pain are,—but if he set himself to write a letter, or took a brisk short walk in the sunshine, or took a cup of hot coffee, he would feel better and happier. In the evenings, too, he would often, in bright light, after a good dinner with a glass or two of wine, and in the society of friends, be quite himself again, and feel almost gay for a time. He stopped work, travelled and rested, and was well in three months. Since then he has had several such attacks, some of them more severe, during which the mental pain was more positive and intense, the conscious mental prostration greater, and the paralysis of volitional energy more complete, so that at times he could not possibly see his friends or put on before them any appearance of cheerfulness. At those times the beginnings of delusions showed themselves. He believed, and could not correct the false belief by reasoning, that he was lost and his prospects ruined, and that his life had been wasted and a failure, and that he had not done his duty by his profession, or his wife, or his children. At those times, too, his intellectual processes would be slow and torpid, his power of attention weakened, and the arrival at any conclusion impossible to him from any data whatever. When he consulted me in one of those attacks I recommended absolute rest, a sea voyage,—which I would not have done had he been in the least suicidal,—almost no company, plenty of easily digested but fattening diet, some good claret, and

animal food only once a day. I told him he might live on bread, butter, milk, eggs, fish, fruit, and fresh vegetables if they agreed with him and he felt that they digested well. A tonic and aid to digestion, in the shape of quinine and nitro-muriatic acid, was all the medicine I gave him. I did not think he needed stimulating nerve tonics, and warned him against opium, which some one had recommended, as against his worst enemy. I told him to live out in the fresh air, as being nature's great sleep-producer, appetiser, and tonic. I counselled him against any expenditure of nerve energy whatsoever, either in seeing company, travelling too fast, walking or talking,—in short, he was to take mental, affective, motor, and sexual rest. I warned his friends against the common delusion that a man in that state needed to be "cheered up" specially. My experience has been that such cheering up is a natural process that will come of itself when the brain attains its normal trophic and energising power. I have seen many patients still further exhausted by the violent and continuous efforts made to cheer them up.

I gave my opinion as to the prognosis that he would probably get over each attack as they came on him, but that he should be extraordinarily careful when he came towards old age, and said he would probably be an old man before his time.

As to prophylaxis, I recommended him, when he got better, to do his work with great system and order, cutting up his day, like the face of a chess board, into regular divisions, and filling in each with regular work, or recreation, or rest. I told him to weigh himself every month, and whenever he found he had lost 3 lbs. to stop work and take a change or a sea voyage. I recommended the bromide of potassium for sleeplessness, in 25 grain doses, if fresh air would not do, but I should now say paraldehyde in drachm doses.

That is the type of a *very mild case of simple melancholia*,

caused by over brain-work in a person predisposed to it by heredity. In such a case it seems as if brain anæmia was present, the morning exacerbation after the physiological sleep anæmia pointing to this, relief being obtained by anything that determined more blood to the organ.

As an example of *simple melancholia with partial paralysis of volition*, and of that particular kind of morbidness which consists in never "making up one's mind," in being subject to "fixed" and "imperative ideas" taking unwilling possession of the mind, along with a subtle kind of morbid introspection and morbid magnification of small things, the following graphic case of A. C. is of much interest:—She was a young lady who had worked far too hard at school, and so had probably produced impaired nutrition of her convolutions. I quote from her own description of her mental state.

"I watch every action, word, and thought, constantly questioning them, accounting for them, excusing them, or deprecating them. Every day I rise I wish to be happy like the others. I will not torture my brain. It is a sin to steal my own happiness and that of others. I reason, resolve, and hope; but the greater the effort to be free the greater the struggle. I have been so oppressed with this unspeakable distress that I feel as if I were two persons—the one tyrannically demanding to be gratified, the other protesting and pleading. I am often in despair, and feel my life a burden. At night I am glad the day is done; in the morning I am in terror the day will be a repetition of the former. The most trivial incident will occupy my mind; I discuss it in all its bearings, telling myself all the time it is not worthy of my consideration. Some one speaks to me, or some one is talking. If the former, I answer (often very abstractedly) with the feeling that there is something on my mind; then I return to the triviality. If I have forgotten it I must remember it, and then with a distinct effort put it away from my mind. It steals back. I tell myself that I have already discussed it, but I must repeat the whole matter to myself,

and that with no ordinary process of thought. I seem to feel a strange strain on my memory, and again I have to use an effort to banish this nothing. Again it will arise and be dismissed; and I number the times as carefully as if much depended on it. The efforts to dismiss the subject cause the blood to rush to my head, the perspiration to break, and I often find my hands clenched in the struggle. All through this I can bear a calm exterior, no one knowing how I am tortured. This fret goes on in every circumstance. I try to divert myself, and go here and there, seek the conversation of some one, seek solitude, try the piano, then a book, until I feel like a hunted creature. This strain upon my mind I cannot endure. I seem paralysed. I cannot perform anything I wish to do, though I spend any amount of energy in fretting.

"In the most critical moments of my life, when I ought to have been so engrossed as to leave no room for any secondary thoughts, I have been oppressed by the inability to be at peace. And in the most ordinary circumstances it is all the same. Let me instance the other morning I went to walk. The day was biting cold, but I was unable to proceed except by jerks. Once I got arrested—my feet in a muddy pool. One foot was lifted to go, knowing that it was not good to be standing in water, but there I was fast, the cause of detention being the discussing with myself the reasons why I should not stand in that pool."

The morbid "watching of herself," as she calls it, is a very common psychological phenomenon. The morbid doubting, too, and inability to make up her mind to action, is also common. I know a young man of a very neurotic family, A. D., whose sister, C. E., was insane and laboured under the variety of mania that I shall describe, who suffered from simple melancholia, but still more from this "insanity of doubt," for he would stop half an hour in dressing to decide which stocking to put on first, and has been known to stand for two hours where three roads met, trying to decide which

to take. If hurried or forced during those morbid periods of doubt, he suffers intense mental pain, and is inclined to resist dictation. Such cases throw much light on many of the resistive and apparently "obstinate" moods of the insane, who are often too much affected intellectually to describe their feelings, or to give their reasons for their conduct.

To return to A. C., whose letter I have quoted. She could not walk far, had palpitation when she ran, had no courage to ride, had much confusion and pain at vertex of head after reading or thinking hard. She was fairly nourished, slept well, menstruation was regular, and she looked a sweet, bright, intelligent girl.

During adolescence she had suffered much from neuralgia, severe headaches, depression of spirits, and a few attacks of hysteria, and had no surplus stock of nerve energy or trophic power. She had used up in school-work the energy that ought to have gone to build up her brain and body. I prescribed life in the open air, no reading, no work amongst the poor (that had strained her by over-sympathy with them), to live largely on non-stimulating fattening food, to take bromide and iodide of potassium in small doses, and strychnine meantime till she could get to Schwalbach and take the baths and chalybeate waters there. This she did, and improved greatly.

I have on several occasions met with cases of this type in women of a nervous diathesis or heredity, both before and after marriage, in which the morbid doubting and introspection were very prominent features.

I have met with many other cases very similar to this, but each one with its own individual features. It appears to me no diseases are so individualised as mental diseases. It seems as if the brain showed its infinite complexity over every other organ by this extraordinary variety in its derangements.

Such attacks of *simple melancholia* sometimes occur in young persons at *puberty* or *adolescence*. In such cases there is always a strong hereditary tendency towards the neuroses,

if not to mental disease. I was asked to see A. E., a girl of 15, some of whose mother's family had been insane, who was clever and studious, though at one time wild and mismanaged, who, after hearing a sermon one Sunday, became very depressed, insisted on praying with the other girls in the school, and was a little excited and demonstrative. The great feature of her case was one which, in different forms, is very common in young brains that are subject to the psychoses, viz., a sort of automatic, rhythmical, emotional movement. She became what she and those about her called "agonised" when left alone, that is, she would get into a state of intensely depressed brain action,—kneeling, uttering over and over again rhythmical expressions of prayer, swaying her body backwards and forwards, and wringing her hands at intervals. When with others, or at her lessons, she would appear to be quite well, but reserved and shy, and could not learn her lessons so well as before, and had no tendency to romp. She was becoming paler and thinner, though she ate well. She had never menstruated. Her intelligence, when I saw her, was normal; and she said she was quite well, and would admit no depression. She said she had headache in one temple, and felt her back weak. I sent her at once to the country, to ride, walk, live in the open air, to take aloes, iron, and quinine, to read little, not to go to church for a short time, to give up coffee and tea, and animal food, but take milk and eggs *ad libitum*. At first, for a month or two, she used to feel depressed, and slightly agitated before people, but soon got girlish, romping, and quite well. After a tour in Switzerland she returned fat, cheerful, and vigorous, with no undue religious emotionalism. She menstruated soon. If one had the guidance of such a life, much, I think, might be done by prophylaxis to ward off attacks of the neuroses. But one great contingency it is most difficult to know how to meet, viz., marriage. If such a woman marries, she runs many risks in pregnancy, childbirth, and lactation, and she is likely to have weakly children; if she remains single,

she has nearly as many hazards in unused functions, hysteria, unsatisfied cravings, objectless emotion, and want of natural interests in life. For herself she would get more happiness in life by marrying; for the world it is better that she should not. But prophylaxis in mode of living, attention to keep the body nutrition at all times up to the highest mark, and early treatment of the beginnings of the evil would, I am sure, often ward off an attack. I need hardly say that the "cause" assigned—viz., the sermon she heard—had in reality less to do with the disease than the brain she took to church, predisposed by heredity, exhausted by study and the unnatural life at a boarding-school, starved of fresh air, and rendered unstable by the physiological crisis of commencing menstruation. And here I would say, once for all, about unusual religious services, exciting preaching, and "revival meetings," that, as a physician, I have no special objection to them, but I think they are only suited to stolid healthy brains, and should on no account be attended by persons with weak heads, excitable dispositions, and neurotic constitutions.

The immense variety that the combination of different mental or nervous symptoms is capable of producing comes out in this, the simplest of all mental ailments. In some cases the mental pain is, as it were, negative rather than positive, there being simply absence of pleasure; in others there is a simple blunting of the emotions, with a tinge of depression; in others, again, the normal gaiety disappears; in others there is a paralysis of energy; in others a sudden ceasing to care anything about the usual interests of life; in others a natural suspiciousness of temperament becomes morbid or a new morbid suspiciousness arises; in others a natural diffidence of disposition increases so as to become a disease and to cause intense unhappiness; and in others it is a morbid fearfulness. It would swell the bulk of this lecture to utterly impossible proportions were I to give cases illustrative of all these conditions, but, to show the ordinary types, I give one or two. I was once consulted about a lady,

A. F., about 40 years of age, who was said to have had a similar attack some years before, and to have recovered. She had given up her business, and had, therefore, no serious interests in life. She had been for some months ill. When well, she had been a clever active woman in body and mind, had conducted a business enthusiastically and profitably, was sociable and a favourite with her friends. When I saw her she had little conscious mental pain, but she had no mental or bodily pleasure. She had no energy—no interest in anything. She had no delusion, except an unreasoning belief that she could not get better. She was utterly careless about her dress, or appearance, or cleanliness. She was obstinate about some things; she cared for nothing or nobody, not even for her life, and was perfectly conscious of her condition. The only thing in which she took any interest was talking about her symptoms. Her memory was good, her reasoning power was, in the main, good. She was thin and flabby. She would do nothing she was told, and needed the guidance of others for her recovery. She recovered after about three years, having then passed the climacteric.

I have seen many cases where the mental symptom of depression was so subsidiary to general nervous prostration, incapacity to walk, work, to digest food, or to fatten, that it was overlooked. I knew one case, A. G., where, as the result of many causes of nervous exhaustion, along with mild mental depression, indigestion, and the most distressing weakness, the cardiac innervation became so weak that the recumbent position had to be kept almost constantly for a time in case of syncope. She recovered in two years under tonics, changes of scene, and a warm climate. Many of these cases are of the same essential nature as typical mild melancholia. American medical authors have much to say about such nervous exhaustion and prostration—the *Neurasthenia* of Beard. For the cure of some of these cases a plan of treatment has been revived, which is certainly not applicable to many cases of melancholia in my experience. It is that

of *massage*, or making the muscles contract and the blood circulate faster by rapid percussion, squeezing and rubbing the body all over every day, and over-feeding the patient while she is confined to bed, instead of walking in the fresh air. Astonishing temporary results are got in some cases in the way of fattening, but I have frequently seen along with those an aggravation of the mental symptoms in melancholics. It seems as if the air and climate, and the mode of life and education, in some parts of America were so stimulating, that the brain there sometimes exhausted both its trophic and energising power, and paid the penalty by prolonged periods of "Neurasthenia." The natural cure would seem change to a more sleepy climate. I think that a modified system of massage is very suitable for some early melancholics, where innutrition is a very marked symptom, and where other measures are not succeeding, massage with the patient confined to bed may be tried. Use it, in fact, as a supplementary kind of exercise. I must say I have seen brilliant results in a few exceptional cases from massage.

There are some instances where the higher affective life is paralysed, while the lower appetites and propensities are left intact, if not actually increased. A mildly melancholic patient once said to me, "I canna think, canna do anything, canna care for anything—wife or children, or anything at all, but meat, meat! If they were all lying dead I would not care a curse if I get meat."

In certain other cases there are extraordinary combinations of mental symptoms along with the mental depression, of which this is an example with a *morbid fear of forgetting names and words*:—

A. H., æt. 64. Disposition cheerful. Temperament sanguine, but not a "nervous" man at all. Habits industrious, steady, and accurate, but somewhat sedentary. A clever and intelligent business man. Mother died of some brain affection, without distinct mental disease. The only other predisposing cause was his time of life — the climacteric. The exciting

cause of the aggravation of the mental state which necessitated his coming to this Asylum was the death of a sister. His present attack has been of gradual onset, beginning in a very mild way some years back, getting worse, and only assuming a form that could be reckoned technical insanity four months ago. He began by being fanciful and disinclined for bodily or mental exertion; in fact, a kind of morbid laziness came over him. Laziness is more often a real disease than is commonly imagined; it simply means, in those cases, diminished evolution of the higher nerve energy. He gradually and steadily got worse, falling more under the influence of his morbid fancies. They produced insane conduct five months ago which showed itself as morbid restlessness, shouting, and acting on his unfounded suspicions. He suspected that people were plotting against him, that there was a society in the next street, the members of which got into his room at night and stole his clothes and watch. He got into silly conservative habits, so that the slightest new way of the house was most disagreeable to him. He could not be got to go out and walk, or to attempt business. Once he threatened to commit suicide with a razor, but seemed to have no serious intention to hurt himself. His memory became impaired in regard to some things, and he thought it worse than it really was. His affection for his relations diminished, and he lost his social instincts.

On his admission into the Asylum he was mildly depressed. His morbid suspicions seemed not only to be a symptom of the disease, but also a cause of depression. He was restless, fidgety, easily startled, and perversely irritable. There was some limited enfeeblement of mind in regard to certain things, *e.g.*, inability to identify familiar persons and places, or to recall events at will; he had groundless fears, and his manner was hesitating. His memory, in regard to most matters, was unimpaired, but in regard to names it was most peculiar, for he had a feeling, *almost amounting to terror, that he would forget some familiar name.* His volition was weak as regards

its positive action, but there was a good deal of obstinacy. In appearance he was fairly nourished, but flabby and slightly paretic looking. After a time his mental depression centred round his fear of not "remembering names." In reality, he would remember them pretty well, but he would get very unhappy, sometimes excited, and most irritable through the morbid fear that he would forget them. In reading the newspaper he would mark certain names down on paper lest he should forget them. He would come up to me and ask in the most earnest tone, as if his life depended on the answer —"Doctor, can you tell me the name of that burn in Fife I fished in in 1850? I can't get it, and it makes me miserable." At times it seemed as if he had a dreamy mental vision of great rows of long botanical and topographical names, whose exact spelling and pronunciation he could not make out, and that this made him utterly miserable. He got very stout after about six months, and went—much against his will—to the Asylum seaside house, where he still further improved, and then unwillingly went home, where he lived for ten years a mentally depressed, peculiar life, fearing the loss of words and names still. He then got so troublesome that he had to be sent back to the Asylum. Many of his peculiarities result from his old methodical habits remaining in an insane and grotesque form. He has been sixteen years ill, and the slightly paralytic symptoms, which have now increased, are proof to me that he has some brain degeneration, probably combined with a good deal of convolutional atrophy (Plate II. fig. 5).

In the cases I have referred to, the condition of simple melancholia has been the mental disease from beginning to end, but very often it is merely a stage in the clinical history, and the case soon assumes a deeper and different form of depression, or in some cases it passes into mania.

Simple melancholia sometimes becomes chronic, of which the following case was an example, having *depression*, but great *self-control before strangers*, *intellectual vigour*, *morbid sensitiveness as to people knowing about her illness*, *want of real*

enjoyment of food, but eating plenty, grimacing and swearing in secret, almost tearless weeping, wringing her hands, and nervous jerkings :—

A. J., æt. 63. Widow. No children. Temperament melancholic, and diathesis nervous, but disposition lively, and very energetic. Very intelligent; habits active; well educated and well bred. For four years she had been depressed, unsocial, morbidly shy, and in great dread lest her friends should know there was anything wrong. Cannot make up her mind about anything, and to any new proposal whatever is always averse; changed in ways; not so particular as to dress and cleanliness as in health—this is very common in similar cases,—and more penurious—also common. When she sees strangers or friends she can talk and behave very well, and seems almost to enjoy their company. Always objects to going anywhere, but does not like to be left at home. Has no power of coming to any resolution, but much of passive resistance and objection. Conceives very strong dislikes and suspicions, reads all day and very quickly, but will not sew, or knit, or play; very acute and observant; very sure she will never get well. As she sits and talks to one, she never looks one in the face, and fidgets and jerks, and sometimes makes faces. When alone she swears and uses abominable language, this being of course utterly foreign to her real nature and former habits. She says she cannot help it, and deplores it,—a common symptom in such cases. She says she never sleeps, but this is not true, though she sleeps badly at times and walks about the room at night.

For treatment, I put this lady on very many things. Opium did harm, and so did the vegetable narcotics, all but cannabis indica in 15-drop doses, which I gave temporarily with good result when she was unusually restless and sleepless, combined with 30 grains of the bromide of potassium. I gave her in succession arsenic, strychnine, iron, quinine, the mineral acids, the hypophosphites, salt baths, fresh air, and walking *ad libitum*, cod-liver oil, maltine, employment, milk,

fruit, fresh vegetables, and farinaceous and fish diet, largely ringing the changes on the tonic medicines, with Friedrichshall water every other morning for the bowels. The course of arsenic did much good, being followed by an increase of body weight. Though she did not get well, yet undoubtedly she got fatter and happier and more comfortable to do with, and remains so now at the end of ten years.

Simple melancholia is in most cases curable; it does not necessarily require treatment in an asylum, when the means of the patient admit of suitable attendance, change, and treatment elsewhere; it never kills directly by exhaustion, and seldom ends in dementia. The exceptions to its curability occur in the very advanced periods of life, when the brain is retrogressing or degenerating, where the heredity is very strong, or where it occurs as an accompaniment of organic brain disease, and this is not uncommon when there is a strong neurotic heredity as well as such organic disease.

Simple depression frequently precedes other forms of mental disease than melancholia, some authorities going the length of saying that it is the first symptom of all kinds of insanity. My experience is that it is not a necessary prelude to mania or to general paralysis, but that in a slight degree it is a very frequent one indeed.

Hypochondriacal Melancholia.—The next variety of melancholia is a rather well-marked one. In seriousness it exceeds the simple form. It is further away from mental health, psychologically and bodily. The symptoms are more decided and positive. Along with the effective derangement there is more judging aberration, and less inhibition over morbid speech and conduct; yet the radical instincts and habits of life are not entirely perverted, nor is the self-control so lost as in the severer varieties of the disease. The mental pain has a certain superficialness and want of intensity, and the cause of it is always stated by the patient to be diseases or disorders of the bodily organs or functions that are not real, or, if real, are exaggerated in the patient's mind out of all proportion to

their actual severity. As simple melancholia has a sane initial period, and many cases are never legally or technically insane at all, so hypochondriacal melancholia has generally a sane stage and a sane twin brother called hypochondriasis, which is usually so lightly thought of, and so misunderstood, as to be for the most part thought a subject of laughter to the patient's friends, and is always popularly talked of as being a state that the patient has got into through his own fault, and could get out of by the exercise of his own volition. In hypochondriacal melancholia a sense of ill-being is substituted for the healthy pleasure of living, but the ill-being is localised in some organ or function of the body. The patient's depressed feelings all centre round himself, his health, or the performance of his bodily or mental functions. He is all out of sorts, he cannot digest his food, his bowels will never act, his kidneys or liver are wrong, he has no stomach, his heart is weak, and he asks you to feel his pulse, which is just going to stop beating. He is paralysed, and will not move a limb till he forgets his fancy for a moment; he cannot think, because his brain is made of lead; he is made of glass and will break if roughly handled. There are no limits to the fancies of the hypochondriac or the hypochondriacal melancholic. The way we distinguish them—the sane from the insane hypochondriac—is this: a man may have any conceivably absurd fancy about himself, but if he can do his work in the world, and does no harm to himself, and has a fair amount of self-control; if he can pick himself up mentally and in conduct at will, and has the power to stop talking of his fancies when he wishes, even though he revels in the descriptions of his own evacuations, consults all the doctors he can afford to pay or who will give him advice without pay, and swallows all the physic he can afford to buy, we call him merely a hypochondriac; but if he has real and intense mental depression that he cannot throw off, if he loses his self-control, cannot do his work, outrages decency openly, practises things that will soon end his days, or threatens to take away

his own life, and cannot at will withdraw his mind and speech from his delusions, then we call him a melancholic of the hypochondriacal type, and, if necessary, put him under restraint. But, as you see, there is no line of demarcation. The one condition is often the first stage of the other. From a physiological point of view the afferent impressions sent up to the brain from the organ implicated in the delusion are unpleasant, instead of, as they should be, pleasant. The secondary cause may be real peripheral disorder. A man's liver may not be working well, and causing him uneasiness, or his stomach may not be doing its work well, or his bowels may be costive—they usually are—or he may have actual disease in the part that he says is wrong, but none of these things would cause the mental phenomena of hypochondria if the man's brain convolutions were working healthily; therefore the real cause must be referred to the brain.

The following was a case *of hypochondriacal melancholia* of short duration:—

A. K., æt. 67, unmarried. Disposition eccentric, suspicious, obstinate, and unsocial. Habits sober, but not continuously industrious. Has had three previous attacks, all of melancholia of a hypochondriacal character, treated in an asylum. No ascertained heredity towards the neuroses. It was said that he had a fall on his head when he was ten years old, and had never been "right" since, but I attached no importance to this story. The exciting cause of his attack was said to be masturbation, but whether this was a cause or a symptom, I could not clearly make out. He was said to have become depressed three months ago, to have had suicidal feelings to which he gave loud expression, to have lost his self-confidence; and he became perfectly helpless and sleepless, according to his own account. He has eaten voraciously all the time, and has not fallen off in looks or weight. He came to the Asylum voluntarily, and considered his case was so urgent that he sent for me out of church. He said he felt nervous and depressed, and was afraid every minute that he would lose

his self-control. He was full of fancies as to the bad state of his own bodily health, that his bowels were very costive, and that he had no appetite whatever. He wanted to be most carefully examined as to the state of his lungs and heart, and more especially as to his sexual organs. He had a real chronic enlargement of one of his testicles, and insisted that he had a sore on his penis, the existence of which required a magnifying glass to determine. His temperature, pulse, and all his organs were normal; he was well nourished. He insisted he had a serious skin eruption, which was really a little acne on his back. He was obtrusively suicidal in his expressions, though it ought to have been clear to him that if he was prevented from putting an end to his life he would soon die of some one of the numerous diseases he had. He remained in this state for about two months and a half, and was subjected to rather a calm but strict discipline at first. He was acute about money matters, most fault-finding as to his food, and said he did not sleep, when in reality he snored all night. He was inclined to be discontented because he did not receive that amount of attention which his case deserved. I never laughed at him, or pooh-poohed him, nor courted his conversation, but left him under a strict medical control, put him on tonics, and made him live in the fresh air, and occupy himself as much as possible. He improved, and was nearly recovered in three months from his admission, in other six months being quite lively, and he then got married. After three years he had another such attack, from which he also recovered.

Here is *another case of hypochondriacal melancholia of a deeper and more serious nature*, and of a longer duration, of the same type, the cause being disappointment; the sensations, appetites, and propensities being changed; travel aggravating the symptoms, which were very demonstrative, with suicidal talk and ludicrous attempts; strychnine, discipline, and fresh air having a very good effect, with a great gain in weight in six months:—

A. L., æt. 38. Temperament melancholic. Disposition quiet,

thoughtful, gloomy, energetic, enthusiastic. Habits temperate, and very hard working. Fond of active work rather than study. Had had a previous attack, lasting three months, of the same character as this about to be described, but not so severe, and treated at home. Maternal uncle and aunt eccentric, if not insane. The existing cause of the present attack was a disappointment. It began by simple depression and incapacity for professional work. The bodily symptoms were at first sleeplessness, and then a curious feeling in his head as if it were made of lead. His thoughts became more and more concentrated on his health and the state of his organs. His appetites and propensities changed. Instead of being very fond of animal food, he could not eat it at all. Instead of having the *nisus generativus* keenly, and indulging it freely, his sexual appetite disappeared. He had had non-specific psoriasis when well, and it had disappeared—this I have noticed in insane patients very often. He had tried the usual plan of travel and change of scene, but he had been the worse for it, as often occurs in melancholia. There is scarcely a point on which I have so much difficulty in the early treatment of melancholia as whether to send away patients to travel or not, and, if they are to go from home, where to send them to. Quick travelling, and going to many places in a short time, is nearly always bad for a nervous or insane patient. Big noisy hotels and an exciting life are also nearly always bad; but then one must have change of some sort, breaking off old associations, and different air, and scenery, and employment. The fact is, that no definite rules can be laid down on this subject; but there are a few considerations that help to guide us. In the very early stages of the disease, when the mental pain is merely incipient, travel abroad often does good, if it is done in a systematic, methodical, leisurely way. If the disease has advanced so far that the power of attention is much impaired, then a quiet country place, where there are few visitors, is best. If the bodily condition is very weak and exhausted, travelling often does more harm than

good. If there are delusions of suspicion very strong, so that the patient is always imagining that people are looking at him, speaking about him, following him, then the quieter he is kept the better. In many cases we must try experimentally to see whether travel is to do good or harm.

On admission A. L. was much depressed, and very demonstrative in his account of his feelings and ailments. He could not read, he said, or understand what he read. He was very suspicious, thinking that people were watching him; imagining he was paralysed in sensation and partly in motion; that he had no appetite, though he ate voraciously, and, when caught in the act, saying that his appetite was an unreal, unnatural one. He said his face and features were quite changed, and he wailfully contrasted his present looks with his former appearance. He went and made faces at the looking-glass, and said he could not help this. Said his natural affection for his wife and children was gone, and his senses of taste and smell were dulled, but there was no evidence of it. He says his brain felt as if "made of lead," and had a "contracted" feeling. He was well nourished and muscular, and all his organs were sound but his digestive system, which was clearly out of order. His tongue was furred and flabby, taking the marks of the teeth; his bowels were costive; his pulse was 68, and good; his morning temperature was 97°, and the evening 96°·8. He was put on strychnine in $\frac{1}{32}$ grain doses and quinine, and he affirmed that the strychnine did him good, that he felt consciously the better for it, that it pulled him up, and enabled him to exercise more inhibition over his actions, and he certainly could tell when it was omitted from his mixture. He was sent to walk all about into town and into the country, and though he often referred to suicide, it was assumed in his case that there was no real danger. One day he returned from a walk alone in a most excited state. He said he had attempted suicide, and disgraced himself for life. It appeared he had come upon a flagstaff and had taken one end of the rope and tied it round his neck, and had then

taken the other in his hand and attempted to hoist himself up the staff! But there was no mark. Another day he lay down in a ditch with a little mud at the bottom, and said he had tried to drown himself, coming home with his clothes all wet. In fact, there was always an element of the ludicrous in his misery and in his mode of expressing it. Regarding the suicidal efforts and expressions of hypochondriacal melancholics, though there is little real risk, yet there is some. A doctor patient of mine once took a poisonous dose of morphia —doctors always poison themselves when they want to commit suicide, just as soldiers always shoot themselves—and nearly died. When A. L.'s mind could be distracted, and he could be got to talk of anything but his own bad feelings, he was rational, intelligent, and his memory good,—this, too, being characteristic of such patients. He got various tonics along with the strychnine,—viz., iron, arsenic, vegetable bitters, the phosphates,—but my own impression is that the strychnine did him most good.

In three and a half months he was so far improved that he believed he was to get well ultimately, and this in a melancholic case is one of the first and one of the surest signs of commencing recovery. He had gained a stone in weight. He could divert his attention more easily from himself. His mental pain was less, his irritability greater, and his head felt better. He lost the worst of his extravagant delusions first, viz., that he would be hanged for hurting his wife. By the way, he had, what I have often noticed in such cases, exalted ideas of the beauty and high qualities of his wife and his children, and the greatness of his previous position and prospects, all by way of contrast to his own misery and misdeeds. In six months he was quite well, and soon was able for hard work, which he did as well as ever, being able to make a large income.

Now, the public and the friends of patients are very apt indeed to speak of such cases and treat them as if it was all the patients' fault, as if by a voluntary effort they could throw

off such foolish fancies. One hears even doctors talking in the same way. They do not appear to understand how anyone can believe such manifest, and what appears to them childish, nonsense about the state of the health and organs, and yet be reasonable otherwise. I need hardly say how absurd such a view of the matter is. The two cases I have related show how such a condition is a real disease, beginning, running its course, and ending like many other diseases. The physiological view to take of such cases is, that in them we have the brain centres that preside over the great organic functions of alimentation and generation, &c., disturbed. When those functions are normal and the brain is normal, the subjective feeling is one of rest and satisfaction—one of organic pleasure. When the functions of those organs are interfered with, or have disease in them, we have a feeling of organic pain, but if our convolutions are in good order we do not put a wrong interpretation on the pain. When the brain centres that preside over those functions are affected by a disease-storm, then, whether there is disease in the organs or not, there is often sensible disorder or lessening of function (as when the sexual appetite was paralysed in A. L.), and the performance of function gives no sensible organic satisfaction. If the intellectual centres are also affected, we have the ill-being and pain misinterpreted and attributed to disease.

All cases of hypochondriacal melancholia do not recover as those two did. My experience has been that this kind of case, when it occurs at the more advanced ages, is apt to be permanent, or the prelude to senile dementia. I had a medical man (A. M.) once under my care, who was sixty, and who had exactly the feelings I have described, but who had no motor excitement, who would speak in the calmest manner possible about his feelings. He said that eating, though he had an appetite, gave him no pleasure; that he had no sense of repletion, so that he had to stop, not because he *felt* he had eaten enough, but because he *saw* he had eaten enough. He said that he had no comfortable satisfaction after his bowels

were moved; that he had no sexual desire or power whatsoever, which was true. He never recovered, and he never could be made fat, though every physiological and therapeutic fattener was tried. He said he felt all the time as if he had a "paralysis of the sympathetic" in his abdomen. He tried to poison himself with morphia; and he did at last commit suicide after living twelve years quietly, and at times almost happily, on a farm in the country. Certainly the cases who affirm they have no stomachs nor gullets, and that their bowels are not moved for years, &c., must have the subjective feeling somewhat the same as they would have if those things were so. I have seen male senile hypochondriacs get very erotic mentally, with no sexual power. They would want female nurses about them, would have them wash and meddle with their organs of generation, would wet and dirty the bed in order to be washed by a female nurse, have enemata administered, while all this time they would affirm that they had no stomach, that they could take no food, that their bowels were never moved, and that they were so weak that every movement was an intense pain.

That hypochondriacal delusions are determined at times by peripheral organic disease is, I think, sufficiently proved by pathological evidence. Many cases of hypochondriacal melancholia are caused by want of work, by want of rational interest in life, by sluggishness of mind, by selfish indulgences such as well-off old bachelors practise, by over-eating and little exercise, by too routine modes of work and living. For these the treatment must be work and activity and change. I knew such a man cured by losing his fortune and having to work hard for his living, and a woman cured by marrying a poor widower with seven children. I have known a mother cured by losing a child. In fact, every variety of melancholia is often cured by a great domestic loss, a real grief taking the place of, and driving out, the morbid mental pain; but before this can occur the general nutrition must usually be improved.

There is, of course, no dividing line between the hypochondriacal variety of melancholia and any other form. Especially it runs into that variety that I have called delusional melancholia, of which, in fact, it may be regarded as a less severe variety. When the delusions in that form refer to the bodily organs or the patient's health, it is difficult in some cases to say whether the word "hypochondriacal" applies or not.

Delusional Melancholia.—By this term I do not mean simply melancholia with delusions. In that case nearly all melancholic patients would come under this class. I mean by it that variety of the disease in which delusions, or a delusion, are from the beginning the most prominent mental symptom, in which those delusions remain throughout the disease of the same character, being what are called "fixed delusions," in contradistinction to delusions that change in kind, or subject, or degree. As a general rule, in this variety of melancholia the delusion stands out so that the friends of the patient call it the cause of his disease, and say that if he could get rid of it he would be all right. It is the peg on which all the mental pain and depression seem to hang. To those who do not consider the nature of the disease, the delusion seems the primary and causal event, the depression the secondary and resulting, just as, when a prosperously happy man loses his wife and becomes sad, his loss is the cause of his grief. In some cases this may be so, but in by far the majority of them the delusion and the depression are both results of the same cause, viz., disorder of the brain, that being commonly developed out of hereditary tendency, and excited into action by peripheral disease in some other part of the body, by blood-poisoning, or by unphysiological modes or conditions of life. The relation of emotion to delusions and "fixed ideas" in insanity on the borderland conditions is much the same as the relation of emotion to trains of thought and imagination in health. Sometimes this emotion arises out of the ideas before the mind, and

sometimes the ideas originate emotional states. Melancholia being more essentially an emotional disorder than any other form of insanity, the depressed feeling frequently causes melancholic delusions.

The delusions of melancholics are almost infinite in number and variety. I have had the chief delusions of about one hundred put down, just as they were expressed to me (see p. 80). A sadder list of the causes of human misery, if they were real, it would not be easy to find. To the unfortunate men and women who hold these beliefs they are as real as if they had been true. They are enough to furnish another Dante with the causes of torture for another *Inferno*. It is true they were not all fixed delusions of the delusional variety of melancholia. To give a right idea of that form of disease I shall classify the delusions somewhat, and give one or two cases representing each kind. The first kind of case I shall speak of is that most nearly allied to the hypochondriacal last described, where the delusions refer to the patient's body or health, or to the performance of the bodily functions. These are very interesting from the physician's and the physiologist's point of view, for the one expects that by curing any bodily disease present he will cure the delusion; and the other finds in such a connection of special mental disturbance with special bodily disorder a sure proof of the relationship between certain parts of the brain and the organs of the body. Not that we can in all cases demonstrate during life or after death such a direct connection.

There is a very common kind of case where the delusions refer to the stomach and bowels; I call them the *visceral* or *abdominal melancholics*. While they may be regarded as having something in common with the hypochondriacal cases described, yet they are of a far more serious character. Their delusions are more intensely believed in, and the mental depression is much more profound. There are not only suicidal feelings and expressions, but serious attempts in

many cases. The organic functions and appetites are far more interfered with. The appetite for food is paralysed, and nourishment is resolutely refused. The sense of organic satisfaction in eating, digestion, and alimentation generally is changed to one of uneasiness or pain. The patients thus get wasted. Sometimes real pain is felt in the abdomen. Many of them complain of an intense sinking at the epigastrium, very like that which combined hunger and fatigue produce in healthy persons. Some complain of a constant fulness in the abdomen, others of the disagreeable feeling that costiveness produces, others of a constant sensation of irritation, emptiness, and faintness. The fancies and delusions attached to, and arising out of, those real sensations are most various, as may be seen by referring to the list of melancholic delusions I shall give (see p. 80). All exaggerate their costiveness or looseness, as the case may be. All say their food does and will do them no good. They are so far right that, put as much food as you like into their stomachs, it does not nourish as in health. Some say they have no stomachs, some no gullets. All say that the food will not digest. Some say they have foul breaths and smells from their bodies that make them offensive to those about them. Some say that they have syphilis; some that they are being poisoned—indeed this is common; some that the devil, or mice, or rats, or cats are inside them. The sense of taste is certainly perverted in many of the cases, so that food tastes badly.

All take food without enjoyment of it. Some take it only because they know they will be forced to do so if they refuse; while others resist every persuasion, and have to be fed forcibly by means of tubes passed into the gullet or stomach. They are mostly thin and sallow, and some of them die of starvation with plenty of food in their stomachs. In some of the older cases there is a tendency to alternate constipation and obstinate diarrhœa.

I had under my care in the Carlisle Asylum two very

interesting cases—brothers—both of whom were *cases of visceral melancholia, and became insane about the same age, and both of whom had the same delusions, viz., that their bowels were obstructed, and in both organic disease was found after death in the visceral tract.* Dr Campbell published an account of them,[1] of which this is an abstract:—

A. N. Admitted into the Carlisle Asylum on February 16, 1865. Male; 60 years of age.

No hereditary predisposition existed as far as could be ascertained, and this was the first attack of insanity. Mentally, he had, at the outset of the attack, been very dull and very hypochondriacal in his fancies. His bodily health had been tolerably good. He had been impulsively dangerous; but had not attempted or threatened suicide. On admission he was found to be above the average height, well built, and in fair bodily health. Mentally he was very dull and desponding. His memory was good. He could speak coherently and answer questions correctly, but could not carry on a conversation owing to his always recurring to his bodily condition, which he described thus: that his belly was so much swollen that he could not take any food; that he never got anything through him; and that when he took castor oil it came away without moving his bowels. Nothing unusual could be discovered in the state of his abdominal viscera. He refused his food for three days, and had to be fed once with the stomach-pump.

Little change is reported to have taken place in the mental or physical state of the patient for two years and a half, when he had again on several occasions to be fed with tube, owing to his persistent starvation on the ground that his intestines were full. He was most miserable in mind, frequently contemplated committing suicide, and at least on one occasion attempted to strangle himself. He went about the wards shouting that he had "forty days' meat in his belly," that he was "bunged up," &c.; and, if permitted,

[1] *Jour. Ment. Science*, Jan. 1875.

would spend most of the day in the water-closet. A dose of medicine always produced an alvine evacuation of normal colour. During this year both his ears became slightly swollen—the insane ear—then shrank, and became much misshapen.

On October 16, 1874, having gradually got weaker, without any marked symptom or any special disease, he died. Almost his last words were that he had forty days' meat in his belly.

Autopsy.—Head.—There was an abnormally large amount of fluid under the membranes, and the convolutions were considerably atrophied. Sections of brain showed it to be rather softer than normal. Sufficiently rich in puncta in some parts; at base of brain it presented a slightly reticulated appearance from atrophy round minute vessels. The floors of the lateral ventricles were studded with small granulations. *Chest.*—In the lower lobe of the left lung, at its outer surface, there was a large vomica containing dark grumous fluid, and on the pleural coat of the lung there was, outside the cavity, some deposit of grey tubercle. *Abdomen.*—Liver normal; duct from gall bladder and pancreas patent. The gall bladder contained a considerable amount of thin bile. Stomach normal — contained some food; small intestine normal through its course; large intestine contained a considerable amount of rather hard yellow fæces. The large intestine, 50 inches from the caput cæcum, and $2\frac{1}{2}$ inches above the sigmoid flexure, had a very constricted part 3 inches in extent, and $\frac{6}{10}$ths of an inch in diameter. Above the stricture the gut was 2 inches in diameter. The portion of gut below this to the anus was normal in calibre.

A. O. Admitted June 22, 1868, æt. 61. No other hereditary predisposition as far as known, except that he is a brother of A. N. No cause could be assigned for the attack. He is stated to have been insane for two months; previously he had been a steady, hard-working man. The first mental symptoms noticed were great dulness and hypochondriacal

fancies; latterly he had become worse—very melancholic and suicidal. He complained much of abdominal discomfort, indigestion, and costiveness. On admission he was found to be a middle-sized man, old-looking for his age; his tongue clean. Temperature 97°. Pulse 60. Skin and conjunctivæ slightly tinged yellow. Bronchitic râles heard over both lungs. Abdominal viscera seemed normal. Mentally was very dull and miserable, wringing his hands, complaining that he can get "nothing through him," that his "belly is much swollen," wishing himself dead, saying that he should be hanged, &c.

Patient continued miserable and dull after admission; if permitted, would spend most of the day on the water-closet, trying to defæcate, and, even after his bowels had been cleared out by the action of medicine, persists that they are full, that he needs medicine, and, though not so noisy as his brother, goes about complaining, in almost the same words, that he is "bunged up," &c.

He continued in the wretched mental state described for a year and a half. He had been treated with vegetable tonics and blue pill, frequently repeated, as it had been noticed that his stools were clay-coloured; and, as his bowels were very costive, aperient medicine had been given to him at intervals. He sank and died on November 2, 1869.

Autopsy.—Head.—The whole brain was very œdematous. Fornix almost diffluent, and corpus callosum of both sides extremely soft. The optic thalamus of the left side was in a more softened state than the right. The cerebellum was abnormally soft and œdematous. *Chest.*—The lower portion of the right lung was much congested, and contained innumerable small points of tubercular deposit. The lower lobe of the left lung was congested, and full of minute points of tubercular deposit; its upper lobe was slightly congested, and contained a few deposits of tubercle. *Abdomen.*—Liver slightly dark in colour, otherwise appeared normal; gall bladder very small and shrunken, its walls were very much thickened, it contained a little black bile. The gall bladder

and pancreas had separate ducts entering to the duodenum, that from the pancreas entering lowest. The duct from the gall bladder was not patent at its termination; it ended in a cul-de-sac of the intestinal wall. The wall of the intestine was thickened at this part, and looked like an ulcer inside of the intestine.

These cases show that different kinds of abdominal distress and disturbed alimentation may excite the same delusion. Extreme constipation existed in both cases, but from quite different causes—mechanical obstruction in the one, and lack of bile in the other. We know, of course, that neither constipated bowels, or lack of bile, or mechanical obstruction is necessarily followed by such mental delusions. For these we need something else, viz., brain convolutions predisposed to disordered action, which results in a mental misinterpretation of real pain or organic discomfort; and in those two brothers, though their family history was unknown, that cause of the insanity was no doubt present in the shape of a hereditary neurosis. One is justified in thinking that both causes were needed to produce the result in those men, who might have died reputedly sane but for the abdominal diseases which converted the heredity from a potentiality into an actual disorder. It will be observed that they both began to exhibit symptoms of insanity soon after 60, and the brain in both cases presented signs of organic degeneration.

There is no doubt a special tendency for abdominal and cardiac injuries and diseases to be accompanied by mental depression or a sense of vague discomfort.

The two following are cases where an organic lesion was found after death, that had evidently determined the character of the delusion :—

The first was *a case of visceral melancholia, beginning as simple melancholia, then expressing religious delusions, then visceral delusions; "no œsophagus"; refusal of food; forcible feeding; death; intestine large, and scybala found almost obstructing bowel.*

A. P., æt. 58. Disposition lively, social, cheerful. Habits active and industrious. Two previous attacks of melancholia; one lasted about two years; treated at home, and by change of residence. Paternal aunt died insane. Exciting cause not known. First symptoms: change of disposition and habits, depression, inactivity, apathy, sleeplessness—treated with morphia). Recent symptoms: deep depression, despair, religious delusions, *e.g.*, that there was no hope for her, that she had committed an unpardonable sin; restless; sleepless; no attempt at suicide. Duration of attack: two months.

On admission, great depression, taciturnity, and delusions as to her spiritual state. She was quite coherent and free from excitement. Memory good. Physical condition poor. Nervous system and thoracic and abdominal organs apparently healthy. Appetite good. She slept little for nine nights, getting no morphia, and missing it very much. Took sufficient food. Was quiet, reserved, and depressed; thought her case a hopeless one. Considerable improvement occurred at first, and then greater depression and a change in the character of the case, the delusions now assuming the visceral character. Became restless, excited, and intractable. Said she could not live, and tried to strangle herself. Refused her food because she said she had no gullet. Grew steadily worse. Abdomen full, and a tumour was diagnosed. Persistently refused food. Had to be fed with nose tube thrice daily, and very frequently vomited the meal. Bowels had been obstinately constipated; laxatives and enemata being employed caused unformed evacuations. Breath became extremely offensive, mouth covered with sordes. Died six months from beginning of attack, and four months and one week after admission to the Asylum.

Autopsy.—Beyond very slight atrophy of the grey matter, there was no apparent brain disease. The thoracic and abdominal organs were healthy, with the exception of the intestines. The intestinal walls were greatly distended at different parts, the large intestine being particularly so

affected. In the large intestine huge masses of hard fæcal matter were found, which must have been there for a considerable time, judging from their appearance and the amount of irritation set up in the intestinal walls. On several parts of the internal surface of the latter there were considerable extravasations of blood and traces of inflammatory action. One huge mass of fæcal matter seemed to block up the lower orifice of the intestinal canal. This case taught me a lesson about getting the bowels well cleaned out in all cases, and in two at least I have treated since, recovery has followed the evacuation of impacted scybalous masses.

Curability of Visceral Cases.—Fortunately all such cases do not terminate in death, nor are they all accompanied by organic disease or obstruction of the viscera. Most of them are incurable, and yet after death we often find no organic disease to account for the symptoms during life. Indeed, this is the case with the greater number of the typical cases. As the result of a statistical inquiry into this form of insanity, taking all the cases I had notes of, I arrived at the following results. In the first place, out of the visceral cases only one-fifth completely recovered, a few making a partial recovery, the acute misery and the delusions passing off, but some depression and some enfeeblement of mind remaining. Of those who recovered several relapsed into the same mental state at older periods of life, and then remained incurable. Another fact in regard to this disease came out in the statistics, viz., that every typical case was over fifty years of age. Some of the cases, in which there was no organic disease found after death, had been characterised by a tendency to a sort of passive diarrhœa during the later stages of the disease, the best cure for which I always found to be the recumbent position. It seemed to be a diarrhœa from deficient innervation of the bowels—a sort of alimentary atony. This was usually accompanied by tissue wasting throughout the body, a low temperature, an incapacity to resist cold, a blue chilly state of the extremities, and a tendency to congestions,

tubercles, and low inflammations. Either such conditions are the natural termination of life in such cases, or intercurrent diseases engendered by those conditions come on, such as bronchitis, catarrhal pneumonia, tuberculosis, gangrene of lungs, &c.

The following is another very good example of this important and troublesome class of cases, there being present *delusional melancholia, caused by exhaustion from over-work, the delusions being that all animal food given was human flesh, and was poison; with refusal of food. Two attacks; first recovered from with perfect mental capacity for hard work; second attack ending in death.*

A. Q., æt. 50. During his first attack, which consisted of mental depression and delusions that his food was "raw human flesh," so that he would not take it, he lost over two stone in the two months the disease had lasted before he was placed under treatment in the Asylum. The cause had been mental anxiety and over-work, no heredity being admitted. The strange fancies that "suggestion" will cause were well illustrated by his imagining that the arrow on the paper in the crown of his hat had been put there to indicate that he would be put in a dark coal-cellar if he did not eat arrowroot! This is an excellent example of that morbid suggestion which plays a great part in many forms of insanity. He also believed his food was poisoned; and he would not use the water-closet, as he imagined it would interfere with the drainage. He had cold hands and feet; his skin was blue and cold; he lost his big toe nail from a chilblain; and he had a boil on his face. He pointed to all these things in proof of the truth of his delusion that he had been poisoned. He had oxaluria, and his bowels were costive. He was fed well, got stimulants and fresh air, and gained in weight; but in seven months from the beginning of his illness he would still take no interest in anything but the state of his bowels. In about a year from the beginning of his illness he had recovered from his depression, and had got rid of his delusions, and he was strong and stout. In eighteen

months he was doing an enormous professional business, implying the greatest mental strain and the exercise of the highest intellectual ability. He did so for eight years, and then the symptoms, mental and bodily, that I have described came on again, and he had again to be placed under treatment in the Asylum. This time he was over 60. He was more emaciated; he showed marked signs of arterial degeneration; his prostate was enlarged, and his urine troubled him both by retention and incontinence at different times; he was scarcely able to speak above a whisper; and in his gait, attitude, and movements he gave the impression of an old man. In spite of every treatment—tonic, nerve-stimulant, fattening, and stimulant—he grew worse. He was compelled to take enough food, but it did not fatten him. He was constantly troubled with a mild diarrhœa, and he could not always keep himself clean. Whenever in any form of insanity the patient persistently passes urine, or, worse still, fæces, in his clothes or bed, it is a bad sign on the whole. It appears to imply always a profoundly diseased interference with the radical instincts of man. The chief exceptions to this bad prognosis from this cause are when it happens in very weak persons, in acute delirious mania, and in stupor. The patient was removed home, and gradually sank in about nine months from the beginning of his second attack (see Plate XIII. fig. 6).

I lately was consulted about *a similar case that recovered.* A lady, A. Q. A., æt. 67, had an attack of jaundice, followed by melancholia, eight years ago. The depression lasted for four years, but complete recovery took place. After keeping well for three years, she took nephritis and congestion of the liver, and the melancholic symptoms at once returned in a more severe and visceral form. She refused food, and had delusions that she could not swallow, and had a choking feeling. She did not sleep, and was then very prostrate. By means of insistent and kindly nursing at home, daily liquid custards of milk and eggs, champagne, fresh air, and the judicious use of paraldehyde one night, chloral and very small

doses of morphia the next, this alternation being kept up for months, she gradually made a good recovery.

Such cases as the last show that the morbid brain action, the trophic paralysis, the actual visceral derangement and its exaggerated mental representation, can all be recovered from. It also shows that there is liability to return with the decadence of function and degeneration of tissue of advancing life. As we shall see when I come to speak of the climacteric period and its characteristic mental disease, this great physiological crisis has much to do with such a case, as well as with the three preceding. Medicine, rest, food, fresh air, nursing, physiological conditions of life can do much, but they cannot arrest the tendency to death inherent in tissue, and organ, and organism, when their appointed time of living has run.

If we could connect the visceral delusions and depression in every case with visceral lesions, as in the cases of A. N., A. O., and A. P., we should place them in the clinical classification as "Visceral Insanity." As we cannot yet say there is any visceral lesion or disorder at all in many of them, but merely a delusion that there is, I have simply described the clinical facts in regard to them, and avoided a new "form of insanity."

The following was *a complicated case of delusional melancholia, with one central and many peripheral causes of irritation and exhaustion, viz., a cancerous tumour of middle lobe of brain, disease of kidneys, liver, pylorus, &c.*

A. Q. B., æt. 58, a lady of good education, cheerful and frank disposition, domestic and industrious habits, who had enjoyed good health, and had a family of several children. Temperament not nervous. No hereditary predisposition to insanity. Predisposing cause of attack seemed to be domestic anxiety and a sudden alarm of fire. Had been falling off in flesh, appetite, and strength before mental attack, but only became depressed for some weeks before admission, and soon became possessed with the delusion that she was very wicked, that she had syphilis, and would infect those around her. She

refused food, was sleepless, and imagined she had no passage in her bowels.

On admission there was extreme depression; says she is very wicked, is lost, has syphilis, and is not fit to be here. Has an anxious, worn, pinched expression of face. Cannot be interested in anything outside herself. Memory seems fairly good. Is coherent, and can answer questions; very thin; colour very bad. Has enlargement of the thyroid body, with prominent eyeballs. No paralysis or anæsthesia. Tongue slightly coated. Bowels very costive. Pulse 88, weak. Temperature, 98°·3. Patient was ordered a tonic —quinine and hydrochloric acid—and to have two glasses of sherry daily, with good nursing, and plenty of easily digested food and fresh air.

For a time patient showed a slight improvement, but this proved very temporary, and the melancholic condition became aggravated. She slept badly, occasionally having a good night, but generally being restless, with broken, disturbed sleep. The appetite was much impaired, patient taking very little food, and ultimately refusing food altogether, so that on one occasion she had to be fed with the stomach-pump.

With occasional slight variations from time to time, patient's mental condition during the winter continued much the same as that noted above—depression and enfeeblement, with delusions of a melancholic type. But during all this time her physical health was steadily deteriorating; she took her food badly, and only with much coaxing—though the stomach-pump did not again require to be used; she was restless at nights; the bowels were still costive more or less. There was great emaciation, a slightly jaundiced tint of the conjunctiva, and a markedly cachectic appearance, such as to make one suspect that the patient might be labouring under organic, and possibly malignant, disease. Great œdematous swelling appeared in the feet, and gradually extended up the legs. The pulse became small and very thready, and

latterly could sometimes scarcely be felt at the wrist. The bowels at this time were much more regular than previously, and the stools more natural in appearance. Patient grew weaker and weaker, and ultimately sank, a year after admission.

Autopsy.—Body much emaciated. *Brain.*—Vessels at base atheromatous. Vertex healthy-looking. There was a tumour, the size of a hen's egg, growing from the upper part of petrous portion of the left temporal bone, weighing half an ounce, and attached to the inner table of the bone, which was somewhat softened. The tumour was encysted in the brain matter, but not attached to it, lying quite free in a cup-shaped cavity. The contiguous brain substance was flattened out and somewhat softened.

The cancerous mass, on microscopic examination, was found to consist of small cells lying in the meshes of a delicate stroma, although much resembling brain matter, but distinguishable from it by the absence of the characteristic larger brain cells of the grey matter. The brain was softened near the tumour, and very anæmic.

Abdomen.—There were several small secondary masses of cancer at the pyloric end of stomach, the orifice of which was constricted. No secondary cancer in liver, kidneys, glands, or other organs. The splenic artery was enormously tortuous and dilated. Liver was fatty, with thickening of the coats of its arteries and bile ducts, and considerable increase of fibrous tissue round them. The fibrous tissue round the bile ducts was deeply stained with bile, even to the smallest duct.

Kidneys.—Right kidney full of very large cysts, substance otherwise normal. Left kidney had marked cystic degeneration. The renal substance was almost gone, its place being taken by numbers of cysts, many of them containing dark fœtid fluid matter.

I think one may confidently refer the direct cause of the special delusions in most of those visceral cases to a disordered

working of that portion of the brain which presides over the function of alimentation; and, secondarily, to a disordered working of the organic nerve ganglia that so abound in the abdomen—the sympathetic system of nerves, the semilunar and visceral ganglia, and the small nerve ganglia in the coats of the bowels. Ferrier thinks that the posterior lobes of the brain are the seat of the organic brain functions, but there is no proof of this. The real cause of the abolition of the normal food appetites in so many diseases and states of disordered health, and their perversion in other instances, is unknown, but, beyond a doubt, we must refer many of them to some central cause in the brain. The whole of A. Q. B.'s case was interesting from there being gross disease in the brain, which probably caused the melancholia, and disease in the abdominal viscera, which probably determined its special character and its delusions.

In many marked visceral cases of melancholia, with delusions of no stomach and intense repugnance to food, I have had the semilunar and many of the sympathetic ganglia of the abdominal plexus examined microscopically, and in almost all cases I found the nerve cells markedly degenerated, atrophied, and pigmented (see Plate II. fig. 5). Some of the cells had almost disappeared, and very few of them in any of the sections were normal. Beyond a doubt their functions could not have been properly performed by those diseased cells, but whether this degeneration was primary or secondary to the visceral sensations I have no means of knowing.

The *delusions refer to electricity or some such imaginary source of annoyance* in a large number of instances, as in this case, which recovered:—

A. R., æt. 44; education average. Disposition reserved, unsocial, suspicious, grasping; habits steady and industrious. One previous attack of depression with delusions lasting a month; treated and cured by travel and rest; no insanity in family. Exciting cause: over-work and business anxiety.

Attack has lasted one month, though he had been dull before. Became restless and sleepless; lost appetite; very depressed; threatened violence to himself; was very suspicious, and absolutely possessed with the delusion that an electric battery was at work in his house acting on him, and causing pain and sleeplessness. On admission, great depression shown in expression, language, and behaviour. Talks all the time about people working on him with an electric battery in his bed, and that enemies are conspiring to ruin him. General health weak; condition poor; tongue foul; bowels costive; conjunctivæ yellow; muscles flabby. For a week after admission he remained extremely depressed, reserved, full of the battery delusions, and suspicious, and slept very little. Under light digestible food and milk, tonics, podophyllin every night, fresh air, and constant companionship, he improved steadily, became more cheerful and sociable, talked less of the delusion, slept better, and had a good appetite. Within three months he was able to live in one of the detached houses; and in two months more he was discharged recovered, having gained a stone and a half in weight, looking fresh, and mentally quite happy. During recovery he passed through the common enough stage of belief in the existence of the battery at one time, though he said it was not worked on him then. After complete recovery he laughed at the whole idea as being a morbid fancy; but he said his sensations had been most uncomfortable, that he used to feel sudden pains, to twitch and jerk and jump up in bed, and had imagined those motor and sensory nervous symptoms meant that he was worked on by a battery. The pathological explanation of them is no doubt this, that through brain disorder or peripheral disease, painful and perverted sensations are felt, and their meaning misinterpreted by the disordered intellectual centres, which are at the time not in a condition to be affected by evidence or capable of reasoning rightly. I once had an epileptic patient who, at times after the regular fits, used to twitch in her limbs, and who would

point to the twitchings that were evidently accompanied by pain, and say—"Look how it works on me," meaning that some one was electrifying her. Such delusions of annoyance or being worked on by electricity, magnetism, or unseen agency, if they last long, while the depression abates, are very unfavourable as regards prognosis. But, so long as there is distinct depression, of which these delusions are an accompaniment, the case should be held to be curable, and treated as such.

There is a popular notion that *religious cases of melancholia* are very unfavourable. It is meant that persons never get well who have intense despondency as to their religious condition, and delusions as to their eternal damnation, as to having committed unpardonable sins, having offended the Holy Ghost, having led most wicked lives that will never be forgiven, having failed to instruct their children properly in religious truths, having caused much sin in others by their example, having neglected the services of religion, having been hypocrites and impure in heart and motive while professing Christianity, and kept up religious appearances so as to deceive the world, being possessed by the devil, &c. No doubt there are some bad cases of religious delusional melancholia, and such patients are apt to make a strong impression on those who see them. In reference to them the religious superstitions of the Middle Ages as to diabolic possession still cling in the popular mind. They are always taken to the clergy first for comfort and spiritual help. It is difficult to draw the line, too, between them and the religious "conviction of sin" and the doubt and depression which, according to many systems of theological belief, are a normal part of the individual religious life. John Bunyan's prolonged depression and "darkness," and Carlyle's "Stygian darkness, spectre-haunted," his "Gehenna within," and his "semi-delirium sad as Golgotha," are sufficiently like some of the cases to cause a feeling of confusion about them. Some of the cases have been called by special names—*Demonomania*, &c.

There is no doubt, too, that the religious instinct of man, being one of the deepest and most central parts of his psychological constitution, and one often cultivated and developed from childhood in a way that few of his other faculties are, causes, when it is perverted, intense general emotional disturbance. These reasons are sufficient to account for the general idea that the prognosis in "religious insanity" is always bad. But, as a matter of fact, this is untrue. A very large number of cases of melancholia have a religious element in them, and it certainly does not prevent them from getting better. The following is an example of *religious melancholia*:—

A. S., æt. 29. Disposition cheerful. Habits industrious. Comes of an excitable, eccentric family. Causes of her illness ill-treatment by her mistress and amenorrhœa. First symptoms, mental confusion and depression, and falling off in bodily looks, appetite, and strength, and her head feeling "queer." On admission she had mental depression, as indicated by her expression, attitude, and the general tone of her conversation. There was also slight mental enfeeblement; her memory seemed to be greatly impaired. She laboured under various delusions of a religious kind, *e.g.*, that she was the greatest sinner alive, and had committed many and unpardonable sins. She wore a very dejected aspect. The sensory functions were slightly dulled, and the reflex functions impaired. She had suffered for several months from amenorrhœa. She was very suicidal. She was the very picture of misery, despair, and lack of interest in the world outside her.

She was put upon sulphate of quinine, and iron, and aloes, good food, and fresh air and work, which she was not at first able to settle herself to do. At first there was no change for the better. Was very depressed; refused food; wept causelessly at frequent intervals, and generally bemoaned her lot as being a castaway from God. Became distinctly worse mentally. Had hallucinations of hearing. Still refused her food. In two months had greatly improved in

her mental and bodily condition, and took her food, but was at times obstinate and wayward. In five months menstruated for the first time since admission, and at once her mental recovery was completed, and she said she felt quite differently. She had got stronger, stouter, and better looking before, but the change after menstruation was marked and immediate. The sense of religious depression and despair disappeared, her cheerfulness returned; and religion thereafter did not trouble her much one way or the other.

In this case she had been brought up in a religious sect, where, theoretically, religion was all in all. When she was miserable, what would so naturally suggest the cause of her condition as the religious ideas in which she had been educated? But the religious element in the case in no way affected the progress or the favourable result of the case.

There are some cases of religious delusional melancholia where the depression is certainly very intense, the mental pain most deep, and the prognosis very bad. Some of those are persons with the combination of a highly-developed religious instinct and a strongly-marked heredity to insanity. If, along with those two conditions, life is on the wane with the patient, and loss of weight and general vigour has begun, and *religious delusional melancholia* then comes on, the outlook is often bad. The following is an example of such a case:—

A. T., æt. 45. No children. No heredity to insanity acknowledged by relatives, but this I had reason to doubt. Temperament melancholic and diathesis nervous, but disposition had been cheerful and benevolent; habits active, especially in doing good, teaching classes among the poor, and comforting the afflicted. A particularly bright, cheery woman when well, and happy in her religion. She went to a trying climate about a year ago and got a little run down. A few weeks before I saw her she had become dull and lost her brightness and vivacity. She said she had lost her "hope in God," and her comfort and assurance in religion. She thought

God had forsaken her, that she was lost, that her former religious life had been tinctured and polluted by selfishness of motive, and that she had been a hypocrite before God and man. She would not go to church, and any attempt to administer religious consolation to her in the usual way by clergymen, engaging in religious exercises with friends, quoting suitable texts, &c., only made her worse. "Those are not for me," she would say, "I would insult the Almighty more and more by going to church." Her mental pain and intellectual perversion entirely prevented her from being able to see the cheerful aspects of the Christian religion. With these mental symptoms there had been headaches and strange feelings in the head to begin with, but these passed off, as is very common, when the affective mental symptoms developed themselves. But there was a furred tongue that had been wrongly treated by purgatives. When will our profession fully understand that a man's tongue may be as furred and foul from want of food, or from an atonic innervation of the stomach and bowels, or from a mere neurosis, as from sluggishness of the *primæ viæ*? She was menstruating irregularly. She looked haggard and flabby. She had lost her feminine plumpness, and her weight was much less than it had been in health. Her food-appetite was paralysed, eating giving her no pleasure. I prescribed nitromuriatic acid and quinine mixture; fattening diet, taken little and often; simple warm water enemata for the bowels; change of scene among intimate friends; stopped the knocking about in travel that she had been trying; proscribed religious talk of any sort; and gave directions for her being watched at all times. But she steadily got worse, more sleepless, more restless and agitated, and more miserable, till she was the picture of despair; became distinctly suicidal; had to be sent to an asylum, and in two years she passed into dementia with still a melancholic tinge to it, as is usual in the dementia that follows melancholia.

This case is the common type of religious delusional melan-

cholia, but there are persons with religious melancholia of a far more subtle type than this—persons of a neurotic diathesis, lively fancy, delicate feeling, and keen religious sentiment that has been developed by much fostering care from their youth up; persons who have had many of the functional neuroses, been martyrs to headaches, varied by spinal irritations; in torture from neuralgia one day, and roused by mild hysterics the next. They are clergymen's spinster daughters, or the female members of intellectual and religious families. They suffer much, but they generally suffer it patiently. The depression of feeling with them is usually hung on some subtle controversial or doctrinal peg, or on an ethical or religious point, so fine that it seems to a healthy mind almost ridiculous to regard it as of any importance. Such persons at times undergo temporary paralysis of religious feeling and volition, "deadnesses," and they torture themselves about it. Those people are all thin, and to them I preach the gospel of fatness, the gospel of fresh air, of healthy secular literature, and active occupation, of iron and quinine, and a little bromide of potassium, or paraldehyde or sulphonal when needed. Some of these good people masturbate badly.

In some cases of *delusional melancholia the delusions refer to ridiculously paltry things.* One young man, A. T. A., once consulted me on account of his depressed condition, and the great depression under which he laboured was caused, he said, by his having joined the Conservative Club in his native town without consulting his father. A woman hung her depression on the peg that the marriage ceremony in her case many years previously had not been properly performed in some minute particular. Dozens of patients have assigned to me as their unpardonable sin that they had occasionally practised masturbation. Patients torture themselves about events in their lives that no one else can see to be of any import whatsoever. In some cases the patients transfer their own disease in delusional imagination to those near and dear to them,

and are most depressed about it, *e.g.*, I have a woman now who says her husband, a robust artisan, is very ill, that he is "dull in his mind, poor fellow, and I wish you would cure him."

The following is a *case of delusional melancholia*, where the *delusions seemed at first sight "fixed," but where recovery took place satisfactorily:—*

A. U., æt. 36. Disposition reserved and quiet, but not melancholy. Nervous diathesis. Habits industrious. Sister incurably insane, and in an asylum. Father had an attack of a month's duration. The exciting cause of the attack had appeared to be the death of a near relation of her husband, whom she had helped to nurse. The first mental symptoms were depression of spirits and sleeplessness. She soon expressed the insane delusion that she had been the cause of her brother-in-law's death, through having had improper thoughts and conduct towards him during his life. This she talked of from morning till night, in fact would speak of it to strangers, and would talk of nothing else; when pressed, her improper conduct was found to have consisted in smoothing his hair when he was lying in bed very ill, and even that may not have been a fact. She would not employ herself, lost all interest in her work, or in anything. I saw her in consultation, and advised a good trained nurse, change and travel, and visiting near relations. But she got steadily worse, and was very obstinate indeed, and would take no medicine. Thinking that perhaps some uterine disease or disturbance might be present and determine the character of her delusions, I wished her examined, but she would on no account consent. She ate heartily, and looked fat and well. She made one or two futile attempts at suicide by twisting her hair round her throat. When well, she had been a bright, agreeable-looking woman; when suffering from this illness her expression of face was totally changed. One would scarcely have known her to be the same person. This absolute change and reversal of the characters of the facial expression is very marked in

such melancholia. She had to be sent, after about three months, to one of the villas attached to the Asylum, and for the first week she did nothing but repeat her delusion and fret about it; she thought of nothing else. She took up the idea then that she ought not to have left home or come here. She was sleepless and restless at night, and very obstinate. She got tonics, lived in the fresh air, and walked long distances each day with her attendants; ate well, and got 45 grains of bromide of potassium at night. She improved for three weeks and then had a relapse during menstruation, which was abnormally scanty. She felt as if she had a shock on her head one night, and after that she felt as if her brain was "completely gone." Such neuroses of sensibility are very common in and before melancholia, and this feeling as if the brain was "gone" is particularly so. I suppose the patients are conscious of a mental incapacity, a paralysis of thinking and volition, along with a strange feeling in the head, and that this is the foundation of this delusion. After this she changed somewhat. She was more obstinate and very sleepless, and unable to read or employ herself; but, instead of having caused her brother-in-law's death, she began to blame herself for having left home and her husband, and harped on this from morning till night, reproaching herself for what she had nothing to do with. I looked on this change of delusion as a very good sign, and my prognosis was better after that. She menstruated regularly but scantily, as she had done from the beginning of the attack. She was put on dialysed iron, and got it steadily thereafter. In four months there was a very great improvement, and in six months she was well enough to go home, and completed her recovery there, having gained about a stone in weight during her convalescence, though she was never very thin from the beginning.

Next to the convulsive and organic varieties of melancholia, the fixed delusional is on the whole the least hopeful as regards recovery.

The following are actual examples of delusions of about

100 female melancholic patients, and they far from exhaust the list:—

Delusions of general persecution.
" " general suspicion.
" " being poisoned.
" " being killed.
" " being ruined.
" " being conspired against.
" " being defrauded.
" " being preached against in church.
" " being pregnant.
" " being destitute.
" " being followed by the police.
" " being very wicked.
" " impending death.
" " impending calamity.
" " the soul being lost.
" " having no stomach.
" " having no inside.
" " having a bone in the throat.
" " having lost much money.
" " being unfit to live.
" that she will not recover.
" " she is to be murdered.
" " she is to be boiled alive.
" " she is to be starved.
" " the flesh is boiling.
" " the head is severed from the body.
" " children are burning.
" " murders take place around.
" " it is wrong to take food.
" of being in hell.
" " being tempted of the devil.
" " being possessed of the devil.
" " having committed an unpardonable sin.
" " unseen agencies working.

Delusions of her own identity.
" " being on fire.
" " having neither stomach nor brains.
" " having skin disease and infecting others.
" " being covered with vermin.
" " letters being written about her.
" " property being stolen.
" " her children being killed.
" " having committed theft.
" " the legs being made of glass.
" " having horns on the head.
" " being chloroformed.
" " having committed murder.
" " fear of being hanged.
" " being called names by persons.
" " being acted on by spirits.
" " being a man.
" " the body being transformed.
" " insects coming from the body.
" " rape being practised on her.
" " having venereal disease.
" " being a fish.
" " being dead.
" " having committed "suicide of the soul."

LECTURE III.

STATES OF MENTAL DEPRESSION — MELANCHOLIA (*PSYCHALGIA*)—CONTINUED.

Excited (*Motor*) *M.:* Restlessness, noise, agitation, wringing hands, moaning, shouting, tearing clothes, violence, insane obstinacy; difficulty of management, hallucinations; Delirium Tremens a typical and exaggerated variety of this state; muscular expressions of mental state; trophic changes, boils, irritations of skin causing scratchings, erosions of surface, pulling out hair, &c.—*Resistive* (*Obstinate*) *M.:* Unreasoning resistance to everything; trying and difficult form to manage; to overcome resistance forcibly often causes excitement; such obstinacy usually delusional, with element of stupor—*Convulsive M.:* A rare but serious and usually incurable form, with a few attacks of severe convulsions usually at beginning of the attack; usually pia mater adherent to convolutions—*Organic* (*Gross Brain Disease*) *M.:* Occurs sometimes in the first stages of organic brain diseases; can usually be treated at home; seldom suicidal—*Suicidal and Homicidal M.:* In every case of Melancholia, however mild, look out for suicide, and guard against it. Meaning of suicidal feeling—infinite variety of motive and delusion, and of modes of suicide; concealment; cunning; act depends much on natural courage of patient, and partly on his religious and moral principles; prevalent modes of suicide in individual cases, in nations, and in sexes; suicide by suggestion, from seeing means at hand; subtlety and liability to recurrence of the impulse. Homicidal and Suicidal impulses and acts frequently combined—Lack of *post mortem* appearances in Melancholia; period of life at which most frequent; hereditary laws—*Treatment:* Diet—tonics, nutritives, sedatives (use and abuse), stimulants, quinine, iron, strychnia, phosphorus, the bromides, mineral acids, laxatives, mineral waters; fresh air, exercise, baths, change of air, scene, and association, rest, travel, occupation, amusement, music, avoidance of excitement or noise or strain of any kind; many attacks will "run their course," and "take their time," like a fever; nursing, watching; removal to Asylum—

Prognosis: Considerations—youth; general state of body; fixed delusions or not; mode of onset; hallucinations; trophic symptoms in skin; effect of treatment; convulsions; suicidal tendencies; persistent refusal of food. Hygiene and prophylaxis in children of melancholic and neurotic families—Diet; mode of life; schools; occupations and professions; sleep; cramming and competitive examinations.

Excited (Motor) Melancholia.—This, like all the other varieties of the disease, may be one stage in the complete clinical history of a case, or may be the type from beginning to end. The motor centres are evidently affected to a greater extent in this than in any of the other varieties, except the one I shall describe as the melancholia with epileptiform attacks. The patients rush about, are violent to those about them, wander ceaselessly, walk up and down like tigers in a cage, or roll about on the floor, bite their finger-nails, or wring their hands, or shout, or groan, or moan, or weep loudly, or tear their clothes, and in all their attitudes and motions express strongly their mental pain. In short, the muscular expressions of the pervading emotion are strong and uncontrollable by volition. Some of the very worst and most incurable cases of melancholia are of this type—certainly the most troublesome to manage. The motor expressions are partly determined by the intensity of the disease in the brain centres, and partly by the amount of inhibition possessed by the individual when well. It must be remembered that active motor acts done when the patient either "loses control over himself," or does not exercise that control, often give sensible relief to the mental depression, just as shouting, weeping, or rushing about will give relief to bodily pain. In such a case the nerve-storm is "irradiated," as Meynert says, into other centres, and not inhibited so strongly as before. It is not uncommon to see cases of melancholia with symptoms that closely resemble convulsions. All the people about the patient say she is in "a fit"; but it is not a true convulsion. Women very frequently present the motor type of the disease. The Celtic race does so markedly. The wailing

and weeping, the gesticulations and motor grief of an Irishwoman are usually out of all proportion to the mental pain—that is, if we take the Teutonic type as our standard. Here is an example of *excited melancholia*:—

A. V., æt. 28, an Irishwoman. Patient had been confined a week previous to admission. The day before her admission she suddenly became very unsettled and careless about her child; she also attempted suicide. On admission she was greatly depressed; she confessed to feeling exceedingly miserable, and could be got to answer the simplest questions only with difficulty; she had a woe-begone appearance, and her bodily health was very weak. She slept very little the first night, but seemed considerably better next day; conversed readily and cheerfully; said she felt much better, and that her strange behaviour previous to admission was due to something which came over her and confused her.

In a week she got worse, being much depressed; thought she was to be killed; and that everything was going wrong with her; did not take her food well; attempted to drown herself by jumping into the Asylum shallow curling pond.

In a month she was somewhat improved, but still continued much depressed in mind. She did a little work. In six weeks, after seeming to improve for a time, patient relapsed. She became the embodiment of utter misery and wretchedness, which she exhibited in a most demonstrative way. She wrings her hands; sways backwards and forwards, contorting her body; rushes about from place to place, and cannot settle for a minute. But the most striking things about her are her countenance and the noises she makes. She has a large mouth, and as her visage assumes the most doleful aspect, expressing the intensest misery, her mouth begins to open until it is a great gaping cavern, and she howls—"Oh, John dear! doctor, darlin'! and me childer! and me persecuted in this jail! oh, I'm punished! dear darlin' doctor! oh, me two brothers! oh, kilt and murdered they are! Oh! oh! oh!" All this time there is seldom a tear, and it

goes on from morning till night, and sometimes all night, so that you cannot hear yourself speak within 10 yards of her. Though the misery is very real to her, yet the effect is often ludicrous, as if you were looking at the overdone misery of an Irish wake on the stage. She ate well, and her bodily health improved, though she had *prolapsus uteri*, for which no treatment could be adopted. After fourteen years she died of heart disease, but with her demonstrations of grief much subdued.

Here is a *chronic case of the same sort that lived eleven years*:—

A. W., æt. 45, deaf and dumb, but educated. A "relative" is insane.

For seven years he was in a condition which, to all outward appearance, was that of misery as great as any painter has ever depicted as the lot of the damned in hell. He was never at rest, but paced about with an uneasy nervous gait. His hands were always moving, tearing his clothes or unbuttoning them, or masturbating, which he did in the most shameless open way; indeed, he was doing it half the time. He made a hideous noise nearly all the time between a groan and a hiss, and his expression of face was that of absolute misery and fierce desperation. At times he rushed about, and if any one came in his way he knocked him down; in fact, he had a distinct homicidal impulse, which made him attack those near him. At times he tore his flesh and beat his head. He seemed to feel no pain. He was the worst patient in Morningside Asylum, and, in fact, was about the worst I have ever seen, taking the long time he was affected into account. Everything had been tried in vain for his recovery and amelioration. Nothing would interest him; scarcely anything would quiet him. I tried hyoscyamine, and it nearly poisoned him. I gave him bromide of potassium in doses up to 6 drachms a day. I tried cannabis indica with it, and he merely fell off in flesh, without being benefited. He was walked in the fresh air till two strong attendants

were done up. He was tried to wheel heavy barrows of soil, but the fight to get him to do so threatened to run some risk of killing him. I often wished I could castrate him, for the constant masturbation, or attempt to masturbate, seemed to show that the centres of generation were in a state of morbid excitation, and I think it might have done him good. For the last three years of his life he was more quiet and demented, and he died of exhaustion, with some tubercular disease in his lungs.

This is *another chronic case of motor melancholia, of a kind which is very common in old age* :—

A. X., æt. 77. Single ; gentlewoman. Disposition active, but passionate. First attack. No exciting cause known. Had a fall down stairs six months ago. Became very restless and sleepless, and lost appetite. This condition had lasted for three months.

On admission she was very depressed and unsettled. Could not sit down or rest for a moment. Walked about the room the picture of despair, and took no interest in anything. Was enfeebled in mind, and behaved in a silly, miserable way. Her physical condition and general health were poor, and she was very anxious about her state of health and her soul's salvation. She had no sleep the night after admission, and was very noisy and restless. She was very depressed ; begged to be sent home ; wrung her hands and wept. This continued with little change. Her nights, with few exceptions, were sleepless, unless narcotics were given ; and she was also very noisy, beating at her bedroom door and shouting loudly. During the day she was in a constant state of miserable unrest. She was suspicious and despondent ; wished she were dead ; refused her food ; would not settle to any work. This state of unhappy restlessness and excitement became fixed and chronic, while her mind became more enfeebled. She got plenty of food, but never could be fattened. After three years she began to show distinct signs of partial hemiplegia, which was first on one side and then on the other,

each attack passing off in a few days. Two of the former assistant physicians to the Asylum, Drs Hayes Newington and J. J. Brown, have described this condition and its pathology, attributing it to capillary apoplexies occurring in succession.[1] But she could never sit down for any length of time till near the very end, a year after the commencement of the paralysis, when she went to bed and soon died. She would eat her meals standing and moving. She swore and used blasphemous language to herself. She said she would "burst" if she was made to sit down. The convolutional motor excitement was unceasing, and nothing could exhaust it. It was connected with an irritation in the process of the decay and degeneration and atrophy of the brain in old age—a long-continued brain-storm that ended only with life. Such old people are most difficult to treat. If we, by mechanical means, restrain their movements, my experience has been that it is no real conservation of energy, but the excitement, finding no motor outlet, reacts inwards and makes the mental state worse.

When *insanity in boys and girls takes the melancholic form, it is usually attended by much motor excitation, especially weeping—the childish mode of expressing grief. This is an example:—*

A. Y., æt. 12. Disposition excitable; habits "old-fashioned," sedentary, thoughtful, and studious for his age. Several brothers and sisters died in infancy of head affections, and a paternal uncle had been melancholic. Mother nervous and eccentric. Father died of consumption. Had been brought up in a poor way alone with an old grandfather, living on tea and coffee and no milk. Had not romped and played enough. Had been in the habit of wetting the bed. His father died a few months ago. Seemed to feel it keenly as a grown-up man would, and has never been the same since. Of late has dreamed much, and awoke in the middle of the

[1] *Edin. Med. Jour.*, August 1874, and *Jour. of Mental Science*, July 1877.

night. Has been at school, and did well. Last week the schoolmaster checked him for holding his pen the wrong way. He came home agitated, nervous, depressed, and confused. Talked all night in an incoherent way of holding the pen, &c. He has got worse, till he is now much depressed; crying, sometimes with tears, sometimes without, all the time;—by the way, melancholics are not always tearless; I have one now who literally weeps floods of tears. He was very restless and sleepless; appetite gone; was flabby, with great dilated pupils, a temperature of 98°, and a pulse of 106, and weak. Under Tinc. Belladonæ gtt. x. and Potas. Bromid. gr. xv. twice a day, fresh air, milk, and light work, he rapidly improved, and was well in a fortnight. He wets the bed much less, too, when well. But in four months, when employed as a message boy, he began to fancy he was dishonest; got confused, wept loudly, was depressed and nervous, and dreamed terrible dreams. He got well again, and then relapsed. His tendency to recurrence and relapse is characteristic of all the mental diseases and of nearly all the neuroses of childhood, puberty, and adolescence. During his first attack he cried, screamed, moaned, groaned, and was restless, more markedly than during his subsequent attacks. In two years from the first attack, after many relapses, he was sent to the Asylum, and there, under proper diet and treatment, he got fat and cheerful, making a permanent recovery.

One gets a good idea of excited motor melancholia from a case of *delirium tremens*, which, looked at from a symptomatological point of view, is a typical example of this disease.

Trophic affections such as boils, skin itchiness, and irritations, causing the patients to pick their skin, tear out their hair, and bite their nails down to the quick, are particularly apt to occur in the marked forms of this excited melancholia, showing that the disturbances are profound, and extend specially to the trophic functions of the brain. For the same reason, no doubt, some of the cases are intractably prolonged, and many are incurable. In no variety of the disease do the

muscular attitudes and expressions of mental pain get so fixed. I had lately a case who has been melancholic for over twenty years, whose power of really feeling mental pain has gone, but who wrings her hands and groans, whose attitude is bent and despairing, and whose face in deep furrows expresses the intensest melancholy. This state will come on quite suddenly, without any outward cause. If interrupted in the middle of one of these attacks of agitated psychalgia, and asked—"What's the matter, Miss Z.? what are you crying about?" she will smile and say—"I don't know." "Were you unhappy?" "No." Or if a glass of wine or a bit of cake is presented during the midst of the worst paroxysm, she will stop her groaning, take it, and smile. And, by assuming a sorrowful or a jovial tone of voice, one can make her groan or smile, and even sing a song. The melancholia has in time become muscular and automatic, without any real subjective feeling at all, and there is no memory of pain or pleasure. This interesting psychological condition is only seen when the convolutions are wasted or destroyed structurally. This condition is often seen in old persons. The brain is more profoundly disturbed in its functions in the excited than in any other form of melancholia except that with epileptiform convolutions.

Treatment.—Regarding the treatment of excited melancholia, it might at first sight appear that mechanical restraint of the movements of such cases, or at all events narcotic and temporarily paralysing drugs, would be indicated, to conserve the energy and to save exhaustion. In former times this plan of treatment was acted on habitually. In very exceptional cases we do so still, but a closer study of the affection and the results of experience show us that evil results of the gravest kind are apt to arise by the indiscriminate restraining of motion either mechanically or chemically. We see that the motor effects are the natural expression and outlet of morbid energy generated in the brain ideo-motor centres. If they are restrained, the condition of the brain seems to suffer, the

excitement to increase, and there is much greater risk of its exhausting and killing the patient, or of the brain condition becoming incurable. So we let the patients walk, shout, even at the risk of tumbling and accident, and we try and send the motor energy into normal directions by much hard walking in the open air, free scope, garden work, wheeling barrows, &c.

I take the following *case as a good example of the effects of such rational treatment in motor melancholia in what was a very severe example, and of the possibility of treating such a case to a favourable termination out of an asylum, during the whole of its course, when circumstances are favourable* :—

B. A., æt. 60, a retired professional man, who had been in many climates. Temperament was sanguine, diathesis nervous, disposition very lively and social; habits active. He once before had a short attack of depression, and had recovered at home. The present attack began by simple depression and falling off in weight. He then passed through a hypochondriacal stage, complaining constantly of his bowels and digestion and liver. Those ideas increased until he had fixed visceral delusions. He had, as a matter of fact, *prolapsus ani*, but in imagination his bowels were all diseased, and his powers of swallowing gone. His next stage was that of active motor excitement, showing constant restlessness by night and day, shouting, tearing out his hair, and picking his skin into holes. He recovered rather suddenly in about a year from the beginning of his illness, after he had gained about 28 lbs. in weight. His treatment was throughout tonic and nutrient—quinine, the mineral acids, arsenic, iron, the bitter natural waters, and strychnine. He took as much as eleven tumblers of milk a day, and the only thing that at one period of his case made us not give up hope was that he was able to digest this, and that he gained weight, except during the most excited stage, which lasted for four months. He took Tr. cannabis indicæ and bromide of potassium for the excitement with marked benefit, and I once, when he was very excited but improving in strength, had his occiput shaved and a large

blister applied, also with benefit. He took no animal food during his illness. Warm baths, with cold to his head, produced temporary quietude during his excitement. He had a first-rate male attendant and a devoted wife, and lodged in a suburban villa with a large garden, where he stayed nearly all day, driving and walking out when quiet. I have never treated a worse case of melancholia out of an asylum.

Resistive (*Obstinate*) *Melancholia.*—In many cases of melancholia, obstinacy, with an unreasoning, passive, or active resistance to anything that other people want them to do, is the marked feature of this disease: to dressing, to undressing, to taking food, to going to bed, to getting up, to going out, to moving about, to micturating, &c. When this resistance is very extreme, as it sometimes is, it is a trying and very dangerous complication, from the difficulty of overcoming it and carrying out necessary treatment without hurting the patient. I have often had nurses and officers come and report to me—"We will not go on dressing except a doctor is present. There is great risk of breaking his bones or injuring him." It is evident, too, that overcoming the resistance, and making the patient do things contrary to his will, is often attended with aggravation of his mental pain, causing excitement, and even violence. As a general rule he cannot say why he resists, but he does so persistently, doggedly, unreasonably, and in some cases with fierce violence. It is one of the symptoms that try most the patience of attendants and nurses, especially of the less gentle and reasonable sort. They cannot understand that it is a mere symptom of disease, and are apt to treat it as if it were sane obstinacy. Resistance is sometimes combined with active motor agitation, but most frequently it is passive obstinacy. It is often one direct result of the delusions present. One patient fancies he cannot pay for his clothes or food, and so will not wear the one nor eat the other; another fancies that she is taken to execution, and so will not walk; another is to be made a spectacle of, and so will not associate with other patients. Some have vague feelings

of distress that the house is falling and that the ground is unsteady, and so will not move. One very *resistive woman* I have now as a patient—B. B.—who will not do anything that is good for her. She will not put on her clothes or shoes, and says, in a vague, incoherent, fearful way—"It's awful, I'm trampling myself down under the ground"—and so she will not walk. "I'm in a hole to serve other people. I've neither meat nor drink"—she had both before her, but in regard to those she had not the sweet sense of possession.—"I dinna ken the beginning o't, and I dinna ken the end o't. I never thocht I was to be the key o' the earth. Everything's naething. I've come miles and miles. It's awfu'. I was forty when they changed me into this state. I dinna ken what age I am now. They've greased me a', and gin' me oil"—castor oil—"and done a' kinds o' things, and there's no a bit o' wit in me." She shows that there is some delusional doubt in her mind as to her own personal identity, as to the ground on which she stands, as to time and space, and as to her own age; and she puts a bad construction on every act done by others, accusing them of all her ills. Her sensibility and muscular sense are perverted. Extreme obstinacy in cases of melancholia is usually, in my experience, the result of a complicated and deep delusional state such as this, or to an insane stupidity, confusion of mind, want of power of comprehension or attention. There is an element of stupor in many of them—delusional stupor. One may not at the time be able to make out what the delusions are, but patients can, after recovery, usually tell what they were. In some of these cases I am reminded of the resistance of a wild animal when first caught. Fear, the instinct of self-preservation, unreason, suspicion, and the instinct of freedom, are all mixed up in the case. An evolutionist would have no difficulty in seeing in those phenomena a reversion to primitive instincts. I have often seen, as clinical accompaniments of such cases, a hot-feeling perspiring skin and a particularly offensive strongly smelling

perspiration. Women have often greater mental confusion and obstinacy at the menstrual periods. *Masturbation* in both sexes often causes, aggravates, and accompanies this condition. They often admit afterwards that it was this habit which aggravated their confusion and obstinacy during the illness, but say that it was almost involuntary and automatic at the time. I have now a lady—B. C.—under my care, whose obstinacy is so extreme that it sometimes takes six attendants to dress her, yet, when the first article of clothing is put on, she will sometimes finish her dressing herself. A locked door makes her furious to open it, so we allow her to go where she likes, and almost do what she likes. She will stand in a passage for hours, evidently uncertain what to do, but any attempt to make her go one way will certainly tend her to go the other with all her might. When opposed she is fiercely resistant, attacking those about her violently at times. Resistance to taking food in such cases is common and very prejudicial to their recovery. They are unpersuadable, but sometimes when the first mouthful is forced into their mouths they will then finish the meal. In other cases, if food is left near them in an out-of-the-way place, they will go and eat it by stealth, denying the fact afterwards. We often take advantage of this peculiarity to get them to take food. In some of those things they are exactly like a wild animal beginning to be tamed.

This condition sometimes has more of confusion and stupidity than resistance or obstinacy, and when that is so it is allied to melancholic stupor, of which I shall speak in another lecture. In fact, I have seen resistive melancholia as a stage in a case passing into stupor, and then again a further stage in passing out of it towards recovery.

The following was a prolonged case of resistive melancholia who recovered:—B. D., æt. 40. Married. Temperament bilious; diathesis nervous; disposition cheerful; habits active. No children. First attack: duration eleven months. Assigned cause, depression from diarrhœa. Slight symptoms

at first suggesting epilepsy, but no true convulsion. Her father was epileptic, and a sister insane. She became depressed, and refused food, requiring the use of the stomach tube for two months. Had delusions, *e.g.*, that her husband was near her when he was far away. At first she was treated in a private house, but her extreme obstinacy about eating, dressing, undressing, walking out, and coming home when out, implied more attendance at times than could be got in any private house.

On admission to Morningside Asylum she was found to be labouring under melancholia, and to be in fair bodily health. Two months after admission it is noted:—"B. D. continues very restless, suspicious, and obstinate, and it is with difficulty she can be got to do anything. She occasionally plays on the piano, but only does so to get a newspaper, which she seldom reads, but carries about with her and will not give up again, believing it contains messages from a friend. There is no active excitement or any other symptom, simply passive resistance to almost everything. She constantly imagines that some relative of hers has come to see her; and, when out walking, will look into all sorts of improbable places for this person. She sleeps fairly at nights, but awakes very early in the morning, and is then very restless. Takes her food well; gets tonics of all sorts." Continued, after eighteen months, as restless and obstinate as ever, and could not be got, without much trouble, to do any work. Slept badly, and was often restless at night. Took plenty of food, and kept in fair bodily health. She was addicted to masturbation, and after recovery believed that caused her bad symptoms. Looked sometimes very demented, and could not be got to do much work. Slept rather better. Prognosis seemed very doubtful. During the latter half of the second year she was able to go out into town on several occasions; and in the end of it she was more settled and tidy in her ways, but still full of the delusions about people being present who were not, &c.

In *three years*, after various trips to the seaside, and a tour in the Highlands, she had improved sufficiently to leave the Asylum on a year's probation, going first to live in a family for a year, then taking a tour on the Continent, and, finally, being able to take up housekeeping for herself, getting rid of her mental disease, becoming very stout, healthy, and cheerful after about five years from the commencement of her attack, and continued so for twenty-two years. Unfortunately, at 65 she became again melancholic with somewhat the same symptoms and delusions as before, but much milder in character, and this attack was the prelude to her dying of malignant disease of the liver. *This case shows that treatment should be continued, and hope should not be given up for a long time in this disease.*

The following is probably an incurable case :—B. E., æt. 46. Single. Education good; disposition cheerful; habits active and industrious. No known hereditary predisposition to insanity. First attack: duration two months; predisposing cause, change of life. She became depressed and had melancholic delusions, *e.g.*, that she had committed some crime, and must be punished; complained of headache, neuralgia, and uterine disorder.

On admission she had a look of stolid misery, was evidently much depressed in spirits, was very obstinate and intractable, refused her food, was very taciturn, and showed a good deal of motor excitement. Her physical condition was poor, but there was no evidences of organic disease.

From the beginning there was the greatest difficulty in nourishing her, and for nearly ten months the nose tube had to be used regularly. She resisted the operation of feeding in the most obstinate and dogged manner, the services of some half dozen attendants being usually required before a meal could be given. In the same manner she resisted being dressed, undressed, taken out for exercise, going to the water-closet, or leaving it when there. Her resistance was not passive, but very active indeed; she would often strike and

kick those who wished to make her go out, and she would seize hold of anything near, and nothing but force would overcome her resistance.

Her condition improved considerably for a few months, and the nose tube was dispensed with. She gained in weight, did a little useful work, and at times talked rationally and cheerfully. This improvement, however, did not persist. The prognosis is bad now after ten years. Dirty habits developed eighteen months after the commencement of the attack. A hæmatoma which appeared is in such a case almost sufficient to warrant a verdict of incurability.

Melancholia with Epileptiform Attacks (*Convulsive Melancholia*).—In the excited form of melancholia the motor movements are ideo-motor and volitional—that is, co-ordinated motions and indications of emotional depression without necessary loss of consciousness and memory. But in the form I am now to describe, which is very rare indeed, and has not been before described, the motor affection is a true convulsion with unconsciousness, occurring once or twice, seldom oftener, in the course of the attack; and it differs in no way in some cases from an ordinary epileptic fit, and in others in no way from a general paralytic epileptiform attack. This form of melancholia is in my opinion one of the most serious varieties of the disease. In it the whole of the functions of a brain convolution are affected—mental, motor, sensory, trophic, and vaso-motor. The mental depression is very intense, accompanied by muscular agitation and excitement, and usually by great obstinacy. There is usually much insensibility to pain, and a tendency to skin irritations, so that the patients scratch themselves and pick holes in their skin, or rub off their hair or pull it out in patches. They are all prolonged and practically incurable, for I have seen only two make even modified recoveries, and none of them have ever been able to work afterwards. It must be understood that I do not include in this variety convulsions of syphilitic or alcoholic origin. Convulsions are present in certain cases of those two kinds of

insanity, but I shall refer to them under those headings. This variety of melancholia seems to have a distinct pathological basis. I have never met with any case but one where, after death, some cause of irritation or some limited adhesion of the pia mater to the convolutions was not found, just as in general paralysis, not at the vertex, but on some of the basal convolutions. The structure of the convolutions is altered on microscopic examination, there being proliferation of the nuclei of the neuroglia, especially seen round the arterioles and capillaries, with destruction of many of the nerve cells.

I have seen over a dozen of these cases, but of eight I have records since I realised that this was a distinct pathological variety of melancholia—almost the only variety that can be correctly so described. Of those eight cases five had only one epileptiform attack, two had two, and one had many. In six they happened within three months of the beginning of the disease, in one after three years, and in one only after twenty years. In three of them the patients died within three years; in five they lived—one for twenty-four, one for ten, one for nine, and one for eight years. They differ entirely from ordinary epileptics, and from the cases with occasional epileptic fits that sometimes occur in advanced dementia, as the brain gets wasted; and they are certainly not cases of general paralysis, for the speech is not affected.

The following are examples of convulsive melancholia:—

B. F., æt. 61. Single. Temperament melancholic. Education good; disposition cheerful, with periods of irritability; habits perfectly steady; teetotaller. One previous attack of melancholia. Hereditary predisposition to insanity; exciting cause unknown. The attack began by a running down of bodily health generally. Duration of existing attack three or four months. Has been depressed, and lately has had two epileptiform seizures, each lasting about five minutes. Attempted to cut his throat the day before admission.

On admission was very depressed, and had many melancholy delusions. Said that he had lost all his money and was

entirely ruined, that he was hundreds of pounds in debt, and that he can never pay what he owes. He was taciturn, obstinate, and reticent, and displayed a confused impairment of memory. He was in feeble health, and had slight kidney and liver disorder.

The prominent feature in this case came to be a curious, unreasoning, automatic obstinacy. When dinner is announced, for example, no persuasion will get him to go down to the dining-room; and when requested to go out to walk he simply will not go. He can give no reason for his refusal, and when force is used he resists with all his strength. In other respects he behaves in a very quiet and sedate manner. He is a very diligent reader, wakening up to activity when fresh newspapers or periodicals are brought in. He is usually little given to conversation, and he is slow to reply to any observation made to him. He is still very despondent, believing that he is ruined, and that he has not a penny of his own, but he has occasional outbursts of fun, and even plays little practical jokes at times, and laughs at the result. Now and then he will talk as animatedly and intelligently about things as ever he did in his life, and one could not then say there was anything wrong with him. Yet, in the midst of this, if his dinner is announced, or the time comes to go out to walk, he will become confused and obstinate, and will need to be taken out of the room by force, no amount or kind of persuasion at all availing. Has had no more epileptiform seizures, but did not improve or change mentally. After eleven years of this condition he died of bronchitis at 72, but no *post-mortem* examination was allowed.

The following was a case of convulsive melancholia become chronic, with muscular expressions of mental pain, but no real feeling. Enfeeblement of mind; two epileptiform attacks—one twenty years after the other.

B. H., æt. 36, when admitted, laboured under melancholia. Had been treated in the Asylum ten years before, and had recovered. Insanity supposed to be due to too free use of

stimulants. After eight years' residence she was discharged improved, but within three years she was brought back. She was greatly excited — crying, moaning, wringing her hands, and displaying generally a picture of the most intense misery, and had an epileptiform fit soon after admission.

She has now been for twenty-one years in a condition of melancholia; but with the lapse of time her feelings have become so blunted, and her intellectual faculties so dull, that while she still wears all the trappings and the suits of woe, her face drawn and furrowed, and in a fixed state muscularly of utter misery, her attitude that of utter dejection, and constantly wringing her hands and uttering a sound between a wail and a groan—she is inwardly, if not happy, at least free from real conscious remembered mental pain. For about two days in each week she is wonderfully bright and sensible. At other times she is very stupid and helpless. At her best she is much enfeebled in mind, and is childish and forgetful. She rubs the hair off parts of her head incessantly, and often for hours she calls out—"Oh dear! oh dear!" in the most doleful tones. But when asked if she is unhappy, she smiles and says—"Oh, no;" and she will chat away in a pleasant, garrulous manner, and will sing a snatch of a song or play a tune on the piano, or beg for a bit of cake. She had her second general epileptiform seizure in 1880, twenty-one years after the first. She died at the age of 71, and several bony spicules were found in her dura mater projecting into the motor area of the cortex. There were no adhesions of the pia to the cortex, and no granulations of the ventricles. But on microscopic examination the pia was found thickened, with blood between its two layers in some places. There was a sclerosed layer on the surface of the cortex. The pericellular spaces were enormously enlarged, with much atrophy of the cell substance in all the layers of the cortex, and there was much pigmentary degeneration of the large cells of the third layer.

Organic Melancholia (*the Melancholia accompanying Gross*

Organic Brain Disease).—There are mental symptoms, often only amounting to depression of spirits, which accompany coarse organic disease of the brain, tumours, softenings, and wastings. It is usually in the first stages of those diseases that we have the mental depression, though in some cases it continues till death. In some of those cases I have seen the mental symptoms the very first to appear, long before cephalalgia or paralysis, or even before great bodily weakness made its appearance. A paralysis of the sense of well-being and the enjoyment of life, a difficulty in coming to decisions, a loss of mental energy, an intolerance of the usual work, if not an actual incapacity to do it well, an irritability of temper, a tendency to make slight mistakes in small things, a loss of memory, and a subacute mental pain, I have seen to exist for two years before men showed any diagnostic signs of brain ramollissement or tumour. The melancholia is usually of the simple type, seldom assuming the excited, delusional, or distinctly suicidal form. I have seen it of the hypochondriacal kind in a few cases. Organic melancholia commonly ends in organic dementia as the brain disease progresses, if the patient lives long enough. But the patients seldom need to be sent to asylums if they have money enough to pay for home nursing and attendance.

The following is a typical case of organic melancholia, interesting from the bodily as well as from the mental point of view:—

B. J., æt. 35. Melancholic temperament, nervous diathesis, cheerful disposition, and very industrious habits. An unusually intelligent man, who after his business hours—and they were long and hard—read books on philosophy and science. There was no known heredity to mental or brain disease. He had mental worry and business disappointment, followed by a weariness, lassitude, and loss of energy. The disease began by his being forgetful of things. This he was conscious of, and it worried and depressed him, and from some expressions he used his friends feared suicide. He

had at the same time headaches, then he smelt bad odours where none existed—a grave symptom always — then he began to take short unconscious attacks, without convulsion or falling down, sometimes several times a day.

When I saw him first, eight months after the symptoms had begun, he was depressed, but without any intellectual delusion. He could not read nor apply himself to anything; his memory was bad; he had terrible headaches, and a feeling of a band round his head; his head was not pained by tapping with the finger; his right face, arm, hand, and leg were weaker than the left, and he had a peculiar slow mode of speech, a difficulty in remembering words, and a tendency to use wrong words having the same general sound to those he wished to use. Sexual desire and capacity had ceased for six months. He was constantly sleepy and yawning, and would go to sleep as he sat and talked to one; in fact, all the time he seemed like a man half asleep —a grave symptom too. He had a perpetual weariness. Face very heavy and expressionless. When very bad one day, and he wanted to say he never had a foul tongue, he said—"I never was like some folks that show that they have a strong colour on the tone—on the tongue." His bowels were excessively costive. My diagnosis was serious brain disease affecting the convolutions, but chiefly confined to the left side. I thought it was either softening or tumour. In case it might be of syphilitic origin, and also because I had found this treatment gave relief in cases of this kind of non-specific origin, I put him on large doses of the bromide and iodide of potassium, with $\frac{1}{12}$-grain doses of corrosive sublimate. I also blistered his head severely behind. This treatment undoubtedly relieved the intensity of the pain, and stopped the epileptiform attacks. His temperature was at this stage subnormal, seldom exceeding 97°. In three weeks after I saw him he had got distinctly worse. He walked worse, staggered, and would fall backwards and to the right if left alone. He spoke worse, and wrote worse,

e.g., when I asked him to write "my hat," which was before him, he wrote slowly "*mhate.*" His temperature was 100° one evening. He died suddenly next morning.

On *post-mortem* examination, I found on removing the dura mater that the convolutions bulged, and were flattened, especially on left side. The whole of the middle lobe of the left side felt baggy and fluid on pressure. On section the lateral ventricle of that side was enlarged, and almost all the white substance of that lobe was gelatinous, stringy, with a pale straw-coloured fluid oozing from it. It was, in some respects, unlike any case of brain softening I had ever seen. The grey matter forming the gyri of the middle lobe was pale and soft, but not diffluent or gelatinous. The pia mater stripped off it very readily. The corpus striatum and optic thalamus of that side were softened to some extent. I could find no embolism nor thrombosis of any of the arteries to account for the softening. The anterior and posterior lobes were pale and wanting in consistence, but not gelatinous. Broca's convolution was not greatly affected. The right hemisphere was pale and soft, especially the whole of the central white substance, but was not gelatinous like the left. In the pons, just under the floor of the fourth ventricle, was a small recent apoplexy, the size of a split-pea.

None of the current vascular or embolic theories explain such a case of brain softening. I think such a disease is the result of morbid trophic changes of purely nervous, and not of vascular origin. Some of the modern authorities would apparently deny the nerve tissue an inherent power to waste, or disintegrate, or become diseased or softened independently of the blood supply or the packing tissue changes. I believe in no such theory. Over mental work or worry does not primarily affect the blood-vessels, yet it causes brain changes of the most serious kinds. Even when vascular changes are found, I believe them to be secondary in great measure to the alterations of nervous structure. The blood-vessels and the neuroglia are, after all, the servants of the brain tissue

proper, and this has not been kept sufficiently in mind in some recent nerve pathology.

On the vascular starvation theory of brain necrosis it has been always assumed that some mechanical obstruction of a vessel by embolism or thrombosis is required. I have seen most of a hemisphere softened and bloodless, with every vessel fully patent. There had evidently been a spasmodic closure of the vessels, a true vaso-motor spasm of a prolonged and complete kind, starving one hemisphere of blood and killing the patient. I believe that sometimes happens, and is the cause of softenings, apoplexies, epilepsies, spasms, and mental affections in different cases.

Suicidal and Homicidal Melancholia.—The question of the patient being suicidal should never in any case of melancholia be left unconsidered, and the risk of his becoming suicidal should never in any case be left unprovided for. No tendency to suicide exists at all in many melancholics from beginning to end of their disease, but it does exist in some form or other—in wish, intention, or act—in four out of every five of all the cases, and we can never tell when it is to develop in any patient. The intention and the act may come on suddenly, by suggestion from without or within, or by the sight of opportunity or means of self-destruction. When a man takes away his own life, or even when a serious attempt is made, it is so distressing to every one connected with the patient, so hurtful to his prospects, and so damaging to the reputation and foresight of the doctor in charge, and so in the teeth of the radical medical principle to obviate the tendency to death, that no pains should be spared to guard against its occurrence. While it prevails so commonly in all forms of melancholia, there is a variety of this disease which is specially characterised by the suicidal intent and impulse, and of all the forms of mental depression this is one of the most striking and most important. When the love of life, that primary and strongest instinct, not only in man but in all the animal kingdom, through which continuous acts of

self-preservation of the individual life of every living thing are performed—when that is lost, and not only lost but reversed, so that a man craves to die as strongly as he ever craved to live, we have then the greatest change in the instinctive and effective faculties of man that is possible, and we have reached the acme of all states of mental depression. Suicide in some cases is a desperate impulse, in others an insatiable hunger, in others a fixed resolution to be calmly and deliberately carried out, and in others a frantic attempt to escape imaginary calamities or tortures.

The determination to commit suicide is in some cases one come to in the calmest and most reasoning way. A patient says—"I'm utterly miserable. I'm not going to recover. Why should I live in torture?" and so determines to end his life. Such cases are nearest in character to the suicides among sane persons which Morselli's statistics[1] show are increasing in nearly all the civilised countries. Next to this mode of arriving at the suicidal purpose, in my experience, come the attempts to commit suicide from the motive, illogical as it seems, to escape imaginary torture or persecution. This, too, causes one of the most common mistakes made in not taking precautions against it. A man is desperately afraid he is going to be hanged for some imaginary crime, and his friends think it would be absurd to have anyone watched against taking away his own life who seems so morbidly fearful that some one else is going to do it for him. But this is one of the most dangerous class of cases. The psychological condition of such a person, when analysed, is found to be this, that there coexist a paralysis of the life-love, a suicidal longing, with delusions of persecution or torture side by side. They are mental symptoms of the same brain disorder. A very suicidal lady—B. K.—in this state wrote a friend:—"If my soul and body could both die, this would be my salvation; but no, this will not be. O God! how dreadful seems my case. Sadness, terror, tortures intolerable will be

[1] *Suicide*, Henry Morselli.

my portion." In other cases there is a direct delusion or hallucination leading to the act of self-destruction. The patient thinks himself too bad to live, that he pollutes the earth, is a source of misery to his relations, that he must sacrifice himself to save others; or he hears voices—of God, of the devil, of friends and enemies, dead and alive—saying to him, "Kill yourself;" "Cut your throat;" or there is a longing for death simply, so intense as to overpower all other motives and considerations, without any delusion—a death-love that acts as a fascination. Then there are cases where there is no love of death at all, but rather a fear of it. Yet an ungovernable morbid impulse impels the patient to commit suicide against his will, and contrary to any resolution he is able to form. Then there are cases where, without loss of consciousness, the suicidal feeling comes suddenly on, as in the case of a boy of six I knew, who would suddenly tell his mother to put away the knives as he might cut his throat; at eighteen he had an attack of adolescent mania. Lastly, there is the epileptic suicidal impulse while the patient is in a state of false consciousness, with no memory of the act afterwards at all. But the last two I shall treat of under the heading of impulsive insanity. Naturally it follows, such being the immediate motives to suicide, the act is carried out or attempted in a great variety of ways. Sometimes it is sudden, the desire to do it arising in a moment, without warning; in other cases, it is led up to by the clinical history of the case very gradually; in other cases most elaborate preparations have been made to accomplish it. Twice in America—one, I think, in imitation of the other—men have constructed an elaborate apparatus, taking months to make, by which the contriver gave himself chloroform first, and when unconscious an axe was let loose and chopped off his head. In other cases much cunning and mendacity are used to throw friends off their guard, so as to enable patients to effect their purpose. As a general rule, the more it is talked of by a patient the less danger is there of its being carried out;

but to this there are exceptions. In most really serious cases this is less talked of by the patient than any other symptom of melancholia. The most absurd precautions are sometimes taken in doing the act. Very often patients take off some of their clothes when about to cut their throats. I had a patient once who, in his own house, arranged himself most carefully over the seat of his water-closet before he opened a vein in his arm with a penknife.

Amount of Risk.—Various things determine the real amount of risk; the intensity of the disease; the amount of consciousness and volition left; the sex and temperament of the patient; the means available; the suggestions offered in the shape of opportunity, that is, the sight of knives, ropes, water, open windows, poison, which in certain cases can rouse into activity a till then dormant suicidal desire; and, above all, the natural courage and resolution of the patient. The effect of the last element is overwhelmingly proved by the fact that only one woman commits suicide for every three or four men in all countries, the suicidal desire I find being more frequent in women than men. There are some hypochondriacal and simple melancholics who are always talking of suicide, and who never go further than talk and ostentatious preparation. I have referred to the hypochondriac (A. L., p. 51) who tried to hang himself by pulling himself up a flagstaff with one end of the rope round his neck and the other in his hand. I knew a patient alarm his friends by drinking a liniment which he knew to contain only a little Tinct. Saponis; another who went and bought no less than 30 yards of rope, hinting his fell purpose to the shopman; another who was always tying thread and garters round his neck, just tight enough to make a mark; and many who tried to end their lives by holding their breaths. In some suicidal cases there are curious automatic suicidal movements quite unconsciously done. I have always many patients who, at times, put their hands to their throats and compress them slightly. Some patients regularly "work at their throats" in that way. I have seen

continued in a patient, as an automatic muscular habit, the mere organic memory of a melancholic suicidal state which had then passed away, the patient being at the time cheerful and convalescent. So I have seen patients gently strike their heads against walls, and play with dinner knives, as if to end themselves, long after any real suicidal desire had gone.

Methods of Suicide.—Regarding the modes of committing suicide, there are eight most common—drowning, hanging, starvation, wounds, firearms, poisoning, precipitation from a height, and asphyxia. But other and rarer methods are as diversified and original as human imagination can conceive.

Some things seem to go contrary to the radical instincts of human nature, *e.g.*, going into boiling water, or swallowing it, or putting a hot coal into the mouth and attempting to swallow it. But I have seen one example of each of all these modes of attempted self-destruction. "Each country," says Morselli, "has certainly its particular predilections." He says, too,—"In the choice of the means of death man is generally guided by two motives—the certainty of the event, and the absence or shortness of suffering." I disagree with this. I think he is guided by the readiness and the simplicity of the means at hand, by the absence of ideas connected with them repugnant to the instincts of human nature, by his natural temperament, and by the suicidal traditions of his country, or race, or profession. In China and Japan the means used are entirely different from those in Europe. But one fact is of great practical and prophylactic importance. The same patient very often sticks to one means of suicide. A man who wants to cut his throat or drown himself will frequently pass unattempted innumerable opportunities of hanging. Even the vanities, follies, and eccentricities of human nature come out strongly in the modes of committing suicide. I knew a man who was very particular about his linen, and could not bear the idea of cutting his throat because it would soil his shirt front, and people might say he had not had on a clean shirt that day, while he was very

anxious to get poison. Patients frequently starve, or attempt to starve, themselves in order to terminate their lives; yet food is by no means always refused in insanity with that direct object.

Modes of Forcible Feeding.—It may be convenient here to refer to the best means of forcible feeding. If persuasion, a little starvation in strong patients, and fresh air and exercise do not make them take food, patients will frequently masticate and swallow when it is put into their mouths. From very long experience I say that a liquid custard of new milk, cream, and three or four eggs, flavoured with a dash of nutmeg or sherry, is the very best and handiest form of liquid diet at first, and for a time at least. If feeding has to be long continued, the best way is to have a big mortar, and pound into a liquid form, with beef-tea, the ordinary diet. Beef, mutton, fowl, fish, and vegetables of all kinds can in this way be liquefied. Always add $\frac{1}{4}$ lb. sugar to each meal, a teaspoonful of maltine, and half a glass of brandy, and feed twice or thrice a day. If the patient will not swallow, the simplest and most available of all apparatus is about 6 inches of india-rubber tubing from a baby's feeding bottle, that can be got at any chemist's, and a small funnel of any sort. With this latter inserted into one end of the tube, and the other end well oiled and passed along the floor of the nares to the pharynx, we can pour down the custard in tablespoonfuls, and the patient must swallow it. But this mode of feeding won't do for long, for patients soon get into the trick of expiring just as the fluid is entering the pharynx, and so blowing it out of their mouths. There are now made French red rubber elastic tubes, like longer stouter catheters, which can be passed along the nasal cavity and down into the œsophagus and so overcome this difficulty. A small funnel inserted into the free end enables us to pour any kind of liquid food into the stomach. If the abdominal muscles resist, and the liquid will not flow down, then a "Yellowlees' bottle" attached enables one to blow the food

into the stomach. This implies no forcible opening of the jaws, and will succeed in almost all the patients. I always use this method now, and I am satisfied it is by far the best. But in case this method fails, we must use the French rubber tubes of large size to be passed into the stomach by the mouth, which must be first opened by a suitable instrument (to be got from all good instrument-makers). This mouth-opener should always be tightly wrapped round at the points with strong tape to protect the teeth. Never bring the steel in contact with the teeth. If there is very great difficulty in opening the mouth, two openers, one put in at each side of the mouth, and both screwed up at once, obviate all difficulty. For such forcible feeding have plenty of assistance. Use a large stomach-pump, or a funnel at the end of the tube held above the patient's head, or the bottle mentioned, to pass the liquid nourishment into the stomach. Take care the patient does not get up and tickle the throat and vomit the food after the meal. With good tubes and instruments, and plenty of assistance, the patient being placed on a bed or sofa, with his head raised, he can be fed quickly and easily. I seldom have any difficulty. I must say, however, that I have met with two patients where I could not pass the French soft rubber tube, and where I had to use the old stiffer gum elastic tube, so that it is well to have one on hand.

Period of Greatest Danger.—My experience is that the greatest danger of suicide is near the commencement of the attack of melancholia. The impulse is then commonly strongest, and its presence and danger is less realised. Like any other disease, its intensity gets spent after a time. So with refusal of food. It is generally most troublesome at the beginning.

As showing the contradictory feelings in a mildly suicidal case, this is the letter of one (B. K.) :—"I wish you would come to see me. I never sleep at all now. I am very ill, and I am in despair about my soul's salvation. I wish I had

an opportunity for suicide. I hope to see you soon. I am very much afraid of hell. I am getting worse, and I see no chance of getting well. I sometimes wonder how much money I have lost. I am afraid of losing money by being fined for blasphemous writings or whisperings (which he indulged in often). I wish I was dead. The keepers have been very kind to me. I hope to live with you soon. If you lived in Edinburgh I would be very glad to see you. I am afraid of dying suddenly. I would be happier with you. I hope to be better when you come. Write soon. I am afraid of hell very much. Is your health good? Keep your money safe beyond my reach.—Yours affectionately."

Degree of Intensity of Suicidal Feeling.—It is most important to estimate the degree of intensity of the suicidal feeling. Is it obviously over-mastering? Is the power of attention and of reasoning greatly impaired? Are the natural habits or propensities changed? The likings and antipathies interfered with or reversed? Is the sense of the ludicrous gone?—But it must be remembered that the sense of the ludicrous may not be gone, and yet a serious suicidal intent may be present. I have seen outbursts of gaiety in a suicidal melancholic.—Is the capacity for ordinary social enjoyment gone? Are the delusions wholly believed in and dominating, or only partially so? Is the patient cunningly trying to throw you off your guard? Is he subject to relapses and remissions? Is he more suicidal in the morning than at night?

The following is a record of *one of the most persistently and strongly suicidal cases I ever had under my care:*—

B. L., a professional man, aged 25, of melancholic temperament; nervous and reserved but kindly disposition; temperate and industrious habits; had been a hard student. A cousin of his mother and one of his maternal great-aunts were insane. Comes of a professional family. There was no exciting cause for his illness. Nine months ago he got dull and sleepless. He first thought he did not do his professional work well; then, by a natural transition, as his disease

acquired more power, that he had committed some crime and ought to die, and that his soul was lost. He took a poisonous dose of belladonna with suicidal intent before admission. He had fallen off in bodily strength and flesh. On admission he was perfectly coherent, and his memory good, but much depressed, with no interest in anything, and with the delusions above-mentioned. In spite of treatment, which consisted of nutritious food and tonics, and attempts to get him employed and his attention aroused to healthy objects of interest, he got steadily worse. His pulse was weak, his temperature low, his muscles flabby, his complexion pale, and his bowels costive. He walked rapidly about, and could not sit down long and settle himself. He said he was troubled much with seminal emissions, and this seemed to depress him further. He had a dislike of animal food. He made innumerable attempts at suicide in quiet, reasoning, deliberate ways. He put his fingers down his throat; he swallowed berries of the *Arbor vitæ* picked in the grounds; he swallowed eighty-two small stones gathered in the gravel walks (weighing twenty-four ounces), and passed them without doing him any harm; he tried to push a nail, picked up and secreted for the purpose, into his heart; he seized a bottle of whisky one day and drank part of it. Even when intoxicated with this he was miserable; and his dreams, he said, were only a little less depressing than his waking thoughts, which were always that he was wronging everyone by allowing himself to live, and that he ought to take away his life and so end his misery and lessen his punishment in the other world. He refused his food for a time, and had to be fed with the stomach-pump. I was singularly unfortunate in the attendants I placed in charge of him, for they got very careless, and one or two I dismissed on his account. He was so quiet and reasonable and nice a man, and tried so successfully to throw them off their guard, and his attempts were so carefully planned that, no doubt, a man unacquainted with disease from the physician's point of view was very apt to abate his

watchfulness. An attendant will be very alert for a few weeks, but when it comes to months, and when the man he has to watch seems as reasonable as he is himself, and is quiet, it is almost impossible to get one who will not give such a man a chance some time. The whole mental energy of B. L. was employed all the time in scheming suicide. And when such a man is a doctor, it simply is a question of how long he will take to get a chance. He drank some turpentine used for polishing, once, and nearly died. He was weak and threatened with bed-sores, and his attendant got a solution of guttapercha in chloroform to paint over his skin. B. L. seized the bottle and drank a quantity of it. We had to use artificial respiration by Sylvester's method and the interrupted current for 14½ hours, when, to our surprise and delight, he began to breathe, and told us to "go to hell."[1] That case taught me many lessons, practical and medical. I have never trusted one attendant continuously on duty in such a case since. I have never believed anyone to be dead, since my experience of B. L.'s resuscitation, merely because he could not breathe and his pulse could not be felt. Six months after admission poor B. L. died of slow exhaustion. Food would not nourish him; stimulants would not rouse him. The disease arrested all his trophic energy. He determined to die, and seemed to accomplish his object by the strength of his volition.

The following was a *case of acute suicidal melancholia coming on suddenly, caused by prolonged affective strain, anxiety, and want of sleep, with intense suicidal feeling, and many attempts; no sleep; exhaustion and death in a fortnight*:—

B. M., æt. 55, a man of a melancholic temperament, nervous diathesis, rather over-sensitive disposition, great intellectual power, and good education. For months he had had too little sleep, and very great domestic anxiety. This

[1] A full account of this case was published by Dr J. J. Brown, then one of my assistants, in the *Edinburgh Medical Journal* for November 1874.

did not seem to tell on him till a sudden outbreak of intense melancholia, with suicidal feeling, came on him without any outward warning. But, no doubt, he was a man of immense power of inhibition, who had the capacity to work his brain up to the point of complete exhaustion, and also conceal from others any evidence that he was doing so. This phenomenon is very often seen in women nursing those dear to them, or "keeping up" themselves and others under loss or calamity. They look cheery up to the last, and do their work, but they break down suddenly, and sometimes incurably. He asked one morning that his razors should be put away, and within an hour or two he had entirely lost his power of self-control, gave expression to the intensest melancholic delusions—that he was too wicked to live, and could not live; that he was lost, ruined, &c., &c. When placed in charge of attendants, as he was at once, he made many and desperate attempts at suicide, so that he could not be left for a moment. He could not be roused to attend to anything; he was restless, moaned, and never expressed any interest again in his wife, or family, or concerns. There was a sudden paralysis of his love of life, of wife, and of children—of his interest in anything but his delusions. His tongue was furred and tremulous, his facial expression that of despair, his pulse feeble, his temperature 100°, his appetite gone, his bowels costive, and his skin ill-smelling. He never seemed to rally, and died within a fortnight of the acute brain condition, though he had every care and attention, with plenty of food and stimulants and nursing. The cells of the grey matter of his convolutions were found extensively degenerated.

Frequency of the Suicidal Impulse.—The prevalence of the suicidal tendency in melancholia can only be correctly brought out by taking large numbers of cases. I have taken the last 729 cases of melancholia under treatment. These were from all classes of society, and this is a valuable point in the Morningside Asylum statistics, as compared with those in an asylum for paupers only. The disease in all those patients

was decided and marked, otherwise the patients would not have been sent to the Asylum. All the very mild cases would be kept at home, and many of the decided cases, too, among the richer classes. In regard to melancholics treated at home, I have no means of ascertaining the prevalence of the suicidal feeling, and it must be kept in mind that many of my patients are sent to the Asylum on account of their suicidal tendencies chiefly, and but for these would have been at home. It may fairly be regarded, then, as far more common among asylum melancholics than among those labouring under the disease out of asylums. Among those 729 cases there were 283, or about two-fifths (39 per cent.), who had actually attempted to commit suicide. In many cases, no doubt, the attempts could scarcely be regarded as being very serious. In addition to this number there were 301 cases, or two-fifths more, that had spoken of suicide, or given some indication that it had been in their minds. That makes 584 out of 729 melancholics, or four out of five of the whole, that were more or less suicidal. No wonder, therefore, that the loss and perversion of the instinct of the love of life is regarded as one of the chief symptoms of melancholia. I am quite sure, however, from what I know of the disease, that the actual risk of suicide being seriously attempted or accomplished is much less than those figures would seem to show. The really typically suicidal cases, in whom the desire to die is very intense and the chief symptom present, any one of whom would certainly put an end to his life if he had the opportunity, are not so frequent. As near as I can estimate, one melancholic in twenty only is of this intense and very dangerous kind.

There is one peculiarity about the suicidal feeling which it is well to keep in mind, and that is its liability to return suddenly or to be called up by the sight of means of self-destruction. I had a patient who was all right so long as he did not see a knife. That set up the demon in him at once.

Homicidal Feeling.—The *homicidal feeling* is much rarer in

melancholia than the suicidal. They frequently coexist; but in some few cases the homicidal feeling exists alone without the other. At the beginning of acute alcoholism we all know how common are those tragedies that shock us in our newspapers, men killing their wives and children, and then themselves. We shall also see that in puerperal insanity there is a strong tendency in many of the cases towards child-murder; but, apart from those two special forms, only a *few melancholics have homicidal feelings, of which the following case is an example. She had, too, hallucinations of hearing voices telling her how to commit suicide, and she made a homicidal attempt:*—

B. P., æt. 30. Widow; of a sanguine temperament; frank and cheerful disposition; temperate and industrious habits. First attack. Cause: annoyance at some legal proceedings three days ago. Became depressed, very restless, sleepless, and her appetite disappeared. She began to think her children were murdered and that people were going to kill her. Whenever you see such delusions, look out to prevent suicide. It is a most common accompaniment. She had hallucinations—hearing voices telling her to commit suicide, which she attempted by drowning. Had been taken to the police-office on emergency, and was at once sent to the Asylum. On admission she suffered from intense mental depression, crying, saying she had been drugged at the police-office, and by a servant. She said that a chimney-can turning with the wind said to her—"Drown yourself, prepare yourself, drown yourself." She was excited and restless in manner, and jerky in her muscles. She could answer questions, and her memory was not gone. Her expression was depressed, suspicious, and alarmed; her skin muddy and spotted; pupils unequal; eyes glistening; was fat and muscular; tongue furred; bowels constipated; appetite gone; refused food absolutely; was menstruating. Temperature, 100·1°; pulse, 108. Was restless the first night, which she spent in the dormitory with the attendant, who twice during the night sent a report about her to the assistant-physician. At 5.30 A.M. next morning she

made a most severe homicidal attack on the attendant, nearly strangling her. Her motive for this was not expressed. It might have been a pure homicidal impulse, or it might have been, and I think it was, from the delusion that the attendant was going to murder her. The assistant-physician after this, finding that it was to be a continuous struggle with the attendants, had her placed in a bedroom alone, with the shutters locked and everything made secure, as he thought, with an attendant to look in every ten minutes. He reported this to me, and I approved of the mode of treatment. She refused breakfast, breaking her dishes, and fighting with the attendants. She was seen at 12.30 or 12.35 by the attendant lying quietly in bed, but at 12.45 it was found she had hanged herself to the shutter bar, which had not been properly constructed, with a piece of her sheet, her feet being on the ground. The efforts at artificial respiration were unavailing.

This is an example of an acute suicidal and homicidal melancholia, the worst of all cases to manage. If you keep attendants with such a patient there is a struggle and much danger to both ; if you place him alone there is always some risk of suicide. What I do now is to put on such a patient clothing of strong untearable linen, to give for bedding blankets quilted in soft untearable canvas, and put him in a room padded if necessary, lighted and with an inspection opening, an attendant being outside the door. It will be seen, from the temperature and whole conditions of B. P.'s case, that such a condition has many of the characters of an acute disease. Such acute symptoms do not usually last long. If we can tide over the first week or two, we then expect all the symptoms to abate. The hallucinations of hearing in such a case may disappear, and are not of such grave import in prognosis as in less acute cases. The unspeakable agony which such cases may suffer was well illustrated in B. P. A., a man of 25, who had led a good life and taken a high place by examination in his profession, but who had been attacked by

acute suicidal melancholia. The patient often needed three and four men to manage him when rolling about on the floor of the padded room. In the fearful agony this was his prayer to the devil—"Oh, devil, come and take me! Oh, devil, come and take me! Oh! oh! oh! oh! Are you asleep? Oh, devil! devil! the judgment day has come. Oh, devil, take me! Oh, I have no will! I feel sick! Oh, devil, take me! Thou knowest all about me! Oh, come here or I'll kill myself! Bloodthirsty devil! damned devil! pull down the house! These men (the attendants and doctor) have come for me!" &c., &c. Repeated hypodermic injections of hyoscine of $\frac{1}{75}$ gr., with doses of sulphonal in 20 grs. in between, had to be used at first to produce a sedative effect on his brain. But, then, all this agonised delirium scarcely sounds much worse than Carlyle's "semi-delirium sad as Golgotha," his "spectre chimæras," "bottomless abysses," "Gehenna within," "spectre fighting," and his "mad primeval discord" in *Sartor Resartus*.

The homicidal impulse in a slighter form is more common. I have now two ladies under my care—B. Q. and B. R.—who kick, and pinch, and strike their attendants and fellow-patients, declaring they cannot help it. One of them, B. Q., has the suicidal impulse too, and strikes her head and breast. She cries to be put in a strait-waistcoat to prevent this. I tried this once, but it had no good effect, and it gave her no more sense of security, and she did not sleep any better. In the other case, B. R., she only has the homicidal feeling in the morning. In the evening she is quite lively, dances, plays on the piano, and smiles. The homicidal feeling seems a reversion to the human instinct of slaughter and destruction that is so strong in many savage peoples, and is seen in most men when enraged. I had a case in whom it seemed to result from an excessive production of motor energy in the nerve centres, for any mode of expending this—by tearing his clothes, digging in the garden, fighting, or gymnastics—would relieve his homicidal feeling for the time. Such a case is

very analogous to the physiological instinct of breaking things in children. Many of the excited melancholics tear and break things, fight, and attack those near them. My experience is that not more than one in fifty melancholics is homicidal in any degree, and not more than one in a hundred is dangerously so; but when the suicidal and homicidal tendencies are combined in a strong degree, such a patient is worse to manage and more unsafe than any other.

Anomalous Cases.—It must always be remembered that a large number of patients do not conform strictly to any of those varieties of melancholia, and may pass from one variety into another, or have the characters of two or even three of the varieties. *The following is such a case, with desquamation, high temperature, and sudden death:—*

B. S., æt. 50. Single. No occupation. Fair education. Disposition reserved. Habits correct and temperate. One previous attack of melancholia, duration under a week, treated at home. No hereditary predisposition to insanity or other nervous disease. Predisposing cause: previous attack. Exciting cause: change of life. First mental symptoms: had some domestic grief which greatly upset her; became unsettled and depressed, and assigned groundless reasons for her grief. Has since become taciturn, and refused food for two days; sleepless; not epileptic, suicidal, or dangerous. Duration of existing attack: six days. Great depression, constant restlessness, moaning and complaining, taciturnity when questioned, refusal of food and medicine.

On admission: great depression, will not answer a single question, keeps constantly moaning and crying "Oh! oh!" looks very miserable, wanders about the room incessantly wringing her hands. Memory and coherence cannot be tested; will not attend to questions. Seems to have delusions of a melancholic character. Is a thin middle-aged lady. Muscularity and fatness poor. Appetite absent. Pulse 108, regular but small. Temperature 99·4°. General bodily condition very weak.

First night in the Asylum was very restless, kept up a constant wail of "Oh! oh!" Could with difficulty be got to swallow a little fluid food. "Typhoid" expression; very sallow look; dark rings round eyes; dry scaly lips; temperature 99·2°. This state continued and increased for about a fortnight without improvement. Very sleepless; constant piercing wail, very distressing to other patients. Her weakness was extreme. She was entirely confined to bed and fed every half hour with liquid food, milk, eggs, beef-tea, and a large quantity of wine. She then began to improve and was much better in the mornings, and got worse in the afternoons. Could be induced to speak intelligently; looked less depressed; took a fair quantity of food; slept better. Within another week she was quite convalescent, gaining in flesh and strength very rapidly. At the same time desquamation occurred (this I have seen in several patients after such short acute attacks). Still a want of appetite. Two weeks later sent out on pass. Appetite and general health improved. Residence in Asylum, four weeks and ten days. She had a relapse four years afterwards, and was admitted with the same symptoms, and in spite of all treatment, died in five days. Temperature often 102·5°; was fed; got abundant stimulants. No pathological appearances beyond congestion were found in her brain.

There are a few cases of *depressed feeling with exalted intellectual condition.* Many patients exaggerate their former happiness, wealth, and position by way of contrast to their present misery. I had a woman in excited melancholia, groaning all the time, who fancied herself a queen; another who had immense wealth. Some few of the cases are of the nature of what the French call megalomania, that is, an expansive grandiose exalted state of mind, coupled with ideas of persecution, and with depressed feeling.

The Inception of Melancholia.—It begins in most patients as simple lowness of spirits, and lack of enjoyment in occupation and amusement, and loss of interest in life. This may be premonitory of the disease by months, or even years, and

happy is the man who then takes proper warning and adopts proper treatment. The next stage is that of the simple melancholia described in A. B.'s case (p. 34), and this may be of long or short duration, and may pass into one of the other and more serious varieties. As a general rule the hypochondriacal variety is longest and slowest in inception. I have seen the delusional, the suicidal, and the excited varieties fully developed within a week of the commencement of the first symptoms, but this is rare. I have seen the loss of self-control take place quite suddenly, a man being calm externally, though dull, in the early morning, and by 10 o'clock A.M. in the acutest stage of suicidal and excited melancholia. Many patients exercise self-control strongly for a time, and then at once lose it. This, however, is not common. The duration of the disease previous to the admission of the case into an asylum is a good test of the rapidity of progress of the disease in its full stages up to the time that self-control was so lost as to require treatment and restraint in an institution. Of 365 cases in which information on this point was obtained, 40 per cent. had been melancholic for periods under a month before admission, 16 per cent. for periods from one to three months, 8 per cent. from three to six, and the remaining 36 per cent. over six months.

The delusions in many cases take their shape, if not their origin, in painful or disagreeable sensations in the organs, which are misinterpreted by the disordered mind, and attributed to wrong causes. Continuous attention to morbid feelings is very apt to aggravate them, and they often originate from purely mental suggestions. In some cases a paralysis of the consciousness of natural affection is the first symptom of melancholia, and the patients, thinking that they no longer love their children, get depressed. I have known in many cases a craving for stimulants to be the first symptom. I knew a lady in whom this was so each time she became melancholic, which she did at each pregnancy and at the climacteric period.

Age.—The ages at which melancholia comes on are more advanced ages on the whole than in the case of mania (see Plate V.). Four per cent. only come on under 20; only 20 per cent. under 30. The largest proportion of cases in any one decennial period—25 per cent.—occurred between 40 and 50, while there was 23 per cent. between 30 and 40, 18 per cent. between 50 and 60, and 14 per cent. over 60.

Bodily Symptoms and Precursors of Melancholia, and the Relationship of Mental to Bodily Pain.—I think it a reasonable inference that the condition of the brain cortex which directly causes the subjective feeling of bodily pain from a burn of the finger is the same as that which causes the pain of typical neuralgia of central origin, and that the cortical state cannot be very different in a woman who is prostrated with grief on account of the loss of a child from that of another who is equally prostrated with grief from the delusion that she has by her misconduct imperilled the salvation of her family. Meynert's theory of the cause of the pain in all these four cases is that we have a strong inhibition in the grey matter causing increased arterial pressure, and "dyspnœtic" phases of nutrition of the tissue, this being roused by sensory impressions, or by recollections of painful impressions, or by processes of thought exciting psychical pain. Whenever we have strong inhibition exercised by the cortex, it is attended by depressed emotion.

There can be no doubt whatever as to the close connection of bodily and mental pain, whether the mechanism of their production in the cortex is the same or not.[1] Clinically they are closely related, and, in my opinion, they are really parts of the same disease. All sorts of sensory disturbances are connected with melancholia. They commonly precede it; they sometimes accompany it, and they often alternate with it. One patient will suffer from ordinary neuralgia for long before the emotional pain comes on; another will have creeping

[1] See the Author's Address as President of the Section of Psychology, Brit. Med. Assoc. Meeting, Aug. 1886, *Brit. Med. Jour.*, Aug. 1886.

feelings or "indescribable" sensations in the head; others will have a sense of fulness there, or a sense of weight or of emptiness. Spinal pains and discomfort, sciatica, changed feelings as to heat and cold, sensations of sinking in the epigastrium, I have known to usher in an attack of melancholia. During the attack it is common for patients to have hallucinations of the senses. One lady told me she saw the water in her bath blood red, and that stationary objects and persons would appear to enlarge and diminish as she looked at them. Food often tastes bitter, or as if "poisoned." Some patients feel as if their bodies or their limbs were unusually large or very small, or that they could not move again if they tried. There is a close hereditary connection between neuralgia and melancholia. For prophylaxis attention to sensory disturbances in those prone to melancholia has a special value. Many attacks might thus, I believe, be averted.

The premonitory bodily symptoms that I have most commonly met with have been headaches, neuralgia, confused feelings in the head, want of appetite, indigestion, costiveness, a feeling of weariness and languor, in some cases restlessness, in others "biliousness," oxaluria, and, above all, the two symptoms of sleeplessness and loss of body weight. When the mental symptoms became fairly developed, the headache and neuralgia, if present, usually disappear, and we have instead a brilliancy of the eye, a tendency for the temperature to rise a little at night, a depression or some other change in the facial expression, a furred tongue, which, in four cases out of five, is neurotic, resulting from the deficient innervation of the stomach. The want of appetite often becomes a repugnance to food, the sleeplessness becomes complete, the constipation great; in about 15 per cent. there is a temperature over 99·5°. *The pulse rate often rises in a most unaccountable way.* It is common to have it 100 or even 120 with no corresponding rise of temperature. One can only attribute it to the cortical excitement. I think there is a

characteristic "melancholic" pulse in those cases. Taking 365 cases at random, I found constipation in 50 per cent., sleeplessness in 60 per cent., want of appetite in 60 per cent., pyrexia in 15 per cent., and hallucinations of the senses in 25 per cent.; epigastric pain and sinking in a few, headaches and sensations of binding, of weight, and emptiness in the head in a few, heart disease in a few, suppression of discharges in a few, disappearance of skin disease in a very few. Taking the general bodily health and condition, I find I had put 36 per cent. as being in fair general bodily condition on admission, 57 per cent. as weak and in bad condition, and 7 per cent. as very weak and exhausted. The heart's action is markedly affected in all the acute cases and in many of the others. In the former the condition of hyperaction in the brain seems to exercise an inhibitory influence on the cardiac motor innervation in a few cases, causing the pulse to be small, the arterial tone to be low, and the capillary circulation to be very weak indeed. Those are the cases in which the use of digitalis, strophanthus, and iron is often very useful. The skin is in some of the acute cases greasy, perspiring, and ill-smelling. In most patients, however, it is dry, harsh-feeling, and non-perspiring. Sometimes we have boils—a good sign often—and subacute inflammations. Bevan Lewis[1] has shown that the reaction time, especially as to optic stimuli, is markedly prolonged in melancholia.

Causation of Melancholia.—The causes of the disease are always popularly supposed to be some calamity, some affliction, some remorse or religious conviction, that has produced grief and sorrow. As physicians, we know how utterly far this is from the truth. If I were asked my opinion, I should say without hesitation that more melancholia results from innate brain constitution, than from all outside calamities and afflictions of mankind put together. If a man has a well-constituted brain, he will, like Job, bear calmly all the afflictions and losses that the spirit of evil can invent for him. It is

[1] *Op. cit.*, p. 135.

impossible to bring on melancholia in such a man. That needs some innate weakness, some predisposition, some potentiality of disease, some trophic or dynamical defect. The friends of melancholic patients will always assign an outside cause for their disease. To them the occurrence of such a state of matters without some manfest cause seems an impossibility. Whoever saw a newspaper account of a suicide without either a cause being stated or a remark implying that there must have been some outside "cause"? A hereditary predisposition to mental disease was admitted in about 30 per cent. of the cases of melancholia sent to the Royal Edinburgh Asylum, but that is very far from representing the truth. I have no official statistics on the point, but my general experience agrees with that of others, that states of depression of mind are hereditary more than most morbid mental symptoms. I have known several families where for four generations a considerable proportion of each was depressed in mind more or less. Certainly the tendency to suicide is very hereditary. Next to heredity come as causes disordered bodily functions, and after them, at a long distance, moral and mental causes of depression. Of the mental causes domestic affliction is by far the most frequent in the female sex, and business anxieties in the male sex.

Prognosis.—Out of the last 1000 cases admitted into Morningside Asylum, 54 per cent. have recovered. Within the past seven years, under 1 per cent. have died of the direct exhaustion from the disease while recent. The liability to relapse after recovery is best represented by the number of previous attacks, which had existed in about one-third of all the cases. It must be remembered that those statistics refer to cases so ill as to need asylum treatment. I have no doubt that if the milder cases treated at home were included the recovery rate would be much greater.

The things that enable us to form a good prognosis are youth; sudden onset; an obvious cause that is removable; want of fixed delusion; absence of prolonged hallucinations

of hearing, taste, or smell; no visceral delusions; no strongly impulsive or epileptiform symptoms; no picking of the skin, or pulling out the hair, or such trophic symptoms; no long-continued loss of body weight in spite of treatment; no long-continued inattention to the calls of nature, and no dirty habits. Almost never pronounce a patient incurable while depression continues.

But be guarded in giving a definite prognosis in almost every case. The greater my experience becomes the more guarded I am. Some of the most favourable-looking cases will deceive you, while some that look most hopeless will recover, as in the case of B. S. A., a patient of mine, *who had been seven years melancholic, suicidal, and sleepless, and who recovered at* 74, *was quite well, and did her household work for seven years, but then relapsed and died melancholic.*

The bad signs are a slow gradual onset, like a natural evolution; fixed delusions, especially visceral and organic delusions; gradual decay of bodily vigour, like a premature old age; persistent loss of nutritive energy and body weight; convulsive attacks and motor affections generally, not merely ideo-motor; persistent hallucinations, especially of hearing, smell, and feeling; a tendency to enfeeblement of mind; picking the skin or hair; a growth of hair on the face in women; persistent refusal of food; an unalterable fixity of emotional depression of face or persistence of muscular expressions of mental pain (wringing hands, groaning, &c.); persistent suicidal tendency of much intensity; arterial degeneration; senile degeneration of brain; no natural fatigue following persistent motor efforts in walking, standing, &c.

Duration of Melancholia.—Of the 540 cases that terminated in recovery, 50 per cent. recovered within three months, 75 per cent. under six, 87 per cent. under twelve months, leaving only 13 per cent. who took more than a year to recover.

In most cases recovery is gradual. In my experience an improvement in the bodily condition and looks, in the

vascular condition, and an increase in the body weight and appetite, nearly always precede the mental improvement. The motor restlessness generally passes off first. The patients sit down and do work of some sort, then they begin to eat better, then the delusions lose their intensity, then the sense of ill-being is less oppressive. There is often an irritable stage as improvement sets in. I have one patient whom I am always glad to hear swearing: I know then that he is going to recover. The return of the sense of well-being is the last to come, and along with it that surplus stock of nervous energy in all directions that constitutes Health. A man whose nerve capital is always running low can never be said to be in really good safe health. When I see a recent case taking on flesh at the rate of three or four pounds a week I know he is probably safe, and will make a good recovery. The only exceptions to this are in the long-continued cases, where the mental functions of the convolutions are permanently enfeebled and damaged, and in whom, as the depression passes off, we have a fat dementia resulting. This, however, is much more uncommon in melancholia than in mania. Some patients—a few—make sudden recoveries in a few days. I have even seen a patient go to bed very melancholic and get up quite well, saying—"I see that all these fancies were mere nonsense. I wonder I could have been so foolish as to believe them." Such cases describe their sensation as being "a cloud lifted off their mind." But on the whole I like slow recoveries better than sudden "cures."

A few of the cases pass into the chronic melancholia I have described. They were nearly all middle-aged or old people. Many of the cases pass into mania, a few become alternating insanity, and a few pass into dementia, which, in that case, is never so complete and absolute a mental enfeeblement as when it follows mania.

Summary of Treatment of the States of Mental Depression.—If the brain and body conditions that accompany, if they

do not cause, states of morbid mental depression are those of trophic deficiency, as we have seen is undoubtedly the case in most instances, then it necessarily follows that what will remedy those conditions is indicated, and all things that will aggravate them must be avoided. Even in the patients where there is no demonstrable lack of brain or body nourishment, and where the disease is more of a purely dynamical brain disturbance, and of a disordered energising of the convolutions from hereditary instability, there is lack of force and general vitality in the brain. We make the conditions of life of a melancholic, therefore, as physiological and favourable as we can. Every therapeutic agent whose effect is tonic, hunger-producing, digestive, vaso-motor, and nerve-stimulating we give. Quinine I place in the first rank; iron, the phosphates, hypophosphites, strychnine, phosphorus, &c., in the second; and the mineral acids, vegetable bitters, aloes, arsenic, digitalis, strophanthus, gentle laxatives, cholagogues, diuretics, and diaphoretics in the third. Not that I have not seen quinine and strychnine over-stimulate and have to be stopped, and iron determine blood to the brain in a way to do harm, but those ill effects are rare, and they can be stopped as soon as observed. The mineral waters of our own country, and especially those of Germany, come under the same category as those tonics. Many a commencing melancholic have I seen cured most pleasantly by a short stay in Schwalbach, Wiesbaden, Carlsbad, &c. Of course the particular kind of water must be determined by the diathesis—the chalybeate to the neurotic, the salines and the sulphur to the gouty and rheumatic, &c. The continued current, applied not too strong, and passed through the great nervous centres, is greatly trusted by some continental physicians, and I have seen it do good in patients with the elements of stupor present.

Diet and regimen are of the highest importance. If I were as sure of everything else in therapeutics as this, that fresh air and fattening diet are good for melancholic people, I

should have saved myself many medical questionings. Such patients cannot have too much fresh air, though they may have too much walking, or gymnastics, or muscular fatigue. It is the best sleep-producer, the best hunger-producer, and the best aid to digestion and alimentation. Without it all the rest is totally useless in most cases. Patients cannot fatten too soon or too fast, though their stomach and bowels may be overloaded, and their livers and kidneys may be too engorged. Fatty foods, milk, ham, cod-liver oil, maltine, eggs, farinaceous diet, easily digested animal food such as fish, fowl, game, &c., are my favourite diet for melancholics. Milk, in very many cases, is my sheet anchor. I have given as much as sixteen tumblers a day with surprising benefit. The nervous diathesis does not put on fat naturally, therefore we must combat the tendency to innutrition by scientific dieting. Adipose tissue and melancholia I look on as antagonists; therefore, when we want to conquer the latter we must develop the former. This is no new doctrine. "Make a melancholy man fat, as Rhasis saith, and thou hast finished the cure."[1] Mrs Carlyle once wrote, after she had recovered from a fearful attack of "nervousness," with much mental depression, "Oh, thank God for the precious layer of impassivity which that stone-weight of flesh has put over my nerves." I need hardly say that the capacity of digestion, the peculiarities of digestion, and the dietetic likings, and even the idiosyncrasies of our individual melancholics must be studied. A good cook is an aid to all cases, a pleasure to most, and a necessity to some.

Concerning *stimulants*, I certainly have found them useful in many cases. The fattening appetising ales and porters work wonders on some lean anorexic melancholics. Good wines do the same. Claret and Burgundy are the chief, when suitable to the circumstances of the patients, that do good. The stronger stimulants and champagne are only needed in the exhausted cases, except, indeed, when whisky

[1] Burton's *Anatomy of Melancholy*, 16th ed., 1836, p. 449.

and water at bedtime is a good soporific. Be sure, however, that it is not the hot water alone that causes the sleep. I have seen a tumbler of hot water taken at bedtime cause sleep as quickly as when mixed with a glass of whisky, and have a better effect altogether. When a patient has fairly gained weight, all alcholic stimulants may be discontinued, except as mere luxuries. Change of air; mountain or sea breezes; change of scene; quiet in most cases; active travel and bustle in a few of the less serious cases; long voyages, if we are quite sure that the disease does not threaten to become acute or suicidal,—all these things are helpful. We enjoin rest from exhausting or irritating work; above all, escape from worry. We bring a different set of faculties and a different group of muscles into action from those that have been employed before. Do not push anything that is too great a conscious effort for the patient to do. Do not send a man to fish if fishing is a disagreeable toil, or make him go into "cheerful society" when this is a real torture to him. Pleasant society with no bustle, beautiful scenery, music, and sunshine, are all healing to melancholy. In most cases some occupation that is a pleasure has to be encouraged, and does much good. Fishing, easy mountaineering, shooting, boating, golf and outdoor games, are most suitable for certain cases. We try and make the impressions received by the senses agreeable, and therefore harmonious with the well-being of the organism. We try and substitute pleasurable feelings for painful ones by every means known to us. Slow travel, with a cheery sensible companion, who is of course twice as valuable if he is a doctor, saves many a man from an asylum. In most cases we remove a man temporarily from his wife and family, for paralysed or perverted affection to a melancholic is itself a painful thing and a source of depression. But there are marked exceptions to this rule—cases where a man's wife is the best nurse, his children his best companions. In bad cases a cheerful trained attendant and a young doctor make a capital team for the melancholic

who needs attention, company, and medical supervision. We try to remove the patient from surroundings that are depressing to those that will rouse pleasant thoughts, and to take him from the place where his malady arose. Everything and every person there may suggest pain to him. But he must not always have his own way. Quite the contrary. In most instances another will must overcome his own, and be substituted for it. This is a reason why mothers, wives, and sisters so often do harm, because they let the patient have too much of his own way. It is certainly well if those about him have physiologically a surplus stock of animal spirits to infuse into him. Much tact is needed in personal intercourse with melancholics, as, indeed, with all the insane. Seldom argue with them or contradict their delusions. Do not agree with them, but change the subject. Discourage introspection, encourage observation of and talk about things without. Don't let the hypnotists only take advantage of the powerful aid of "suggestion"; never cease to assure them they will get well and are getting well. In a few cases the use of *hypnotism* by Dr G. M. Robertson here has overcome persistent sleeplessness, and "hypnotic suggestion" has introduced cheerful ideas. Every neurotic man should have an outdoor hobby. That would save many of them from melancholia.

Precautions against Suicide.—Guard against suicide, and make the friends and attendants feel that there is a real risk of its being committed. They get into the state of mind of railway porters, who are so accustomed to risks that they forget all about them. I have seen suicidal melancholics by the dozen, about whom I have given warnings as strong as I could make them, that every article by which suicide might be effected should be removed, with knives in their pockets and razors in their dressing-cases. The bad cases should never be left alone. I once had a suicidal patient under the charge of an attendant, who was said to be experienced, and I found my patient in a top-storey room alone, with a loaded revolver in his pocket and a razor-case in his room,

and yet his mother and his attendant did not in the least realise the risk.

Why an Asylum does good.—Many melancholics are intensely selfish, think of nobody but themselves, bore their friends with recitals of their own feelings, and crave sympathy with a morbid intensity. Too much expressed sympathy in most cases feeds the disease. To distract the attention from morbid thoughts and feelings by any means should be the one great aim in personal intercourse. Strangers often do better with melancholics than friends or relations. Many of them take most strong and unfounded morbid dislikes. They exercise more self-control before strangers, and the strengthening of the power of self-control is half the cure. That is why removal to an asylum is sometimes followed by immense benefit. A patient who at home has been groaning, noisy, idle, and unmanageable, finds himself among strangers, subjected to rules and discipline and ordinary living, and has objects of fresh interest presented to him, and he becomes a different man at once. I asked a man who had been very ill and unmanageable at home, and who seemed to come round in a few days in the Asylum, what had cured him. His reply was—"I found myself among a lot of people who did not care a farthing whether I was miserable or not, which made me angry, and I got well." Being by far the most conscious form of insanity, it would seem the hardest on the patients to send them to an asylum, but, in reality, removal to an asylum does more good to certain melancholics than to any other class of the insane. What is good is not always pleasant in moral as well as in medical treatment. There is no use dunning a patient to "rouse yourself," to "throw off your dulness," to "drop those fancies," for in many cases it would just be as wise to tell a hemiplegic to "move that leg."

As regards sending a patient to an asylum, and when to do it, no rules can be laid down. Among the poor it must be done in most bad cases, and soon; though nowadays a working man can get a complete change of air and scenery for a

shilling. Among the very rich few melancholics are sent to asylums till their relations are tired out with them or until they become very suicidal or unmanageable. No doubt the risks of sucide are much less in an asylum. There is discipline, order, a life under medical rule, suitable work, much amusement, and the means of carrying out what is good for the patient. When from any cause you cannot get the treatment carried out that you know is necessary for the patient, then an asylum is needful. When the symptoms persist too long without showing signs of yielding, when the risk of suicide is very great, when the patient has foolish friends who will not carry out any rational plan of treatment, or when he gets too much sympathy or none at all—in all these cases an asylum is indicated. Many patients who resist all right treatment at home will submit to it at once in an asylum.

Nursing.—Good experienced mental nursing in the weak cases, just as you would nurse a fever patient, is of the last importance. A nurse that will insist and persist till the insane opposition and the repugnance to food is overcome, is what we want. It is very easy to let a melancholic slowly starve himself, while he yet takes some food at every meal.

Baths are most useful, especially Turkish baths. I have seen many chronic incurable melancholics much improved and some cured by a course of Turkish baths. The wet pack is often useful.

Hypnotics and Sedatives.—Some of our greatest difficulties in treating a case of melancholia are whether to give narcotics and sedatives, when to give them, what to give, and when to stop them. Opium I greatly disbelieve in. I performed a series of elaborate experiments with it in melancholia,[1] and it always caused a loss of appetite and loss of weight in every case, and Dr Mickle has confirmed these results.[2] I have seen very few melancholics in whom I was sure opium did permanent good, yet in a very few it certainly gives immense relief to the misery.

[1] "Fothergillian Prize Essay for 1870," *Brit. and Foreign Med.-Chir. Review*, October 1870 and January 1871. [2] *Practitioner*, June 1881.

Chloral is very useful as a temporary expedient to get sleep. I now always give small doses—never more than 25 grains, generally keeping to 15, combined with from 20 to 50 grains of the bromides of potassium, sodium, or ammonium. But I now seldom give chloral long. I am satisfied that one effect of its prolonged use is to reduce the tone of the nervous system, and to lessen the power of enduring pain, mental or bodily. I very often use paraldehyde in doses beginning with 40 minims and going up to 4 drachms, with great confidence that its sleep is a more natural one than any other hypnotic known to me. I have lately had several cases where the patients gained in weight and improved in mind steadily, while getting some sleep, by taking a drachm of paraldehyde every night, while they at once fell off when this was discontinued. They all made good recoveries. Fifteen or 20 grains of the bromides added to the paraldehyde will sometimes prolong the sleep. Sulphonal, in doses of from 20 to 30 grains, is a most valuable drug, because it acts as a hypnotic and motor sedative combined, its effects are prolonged and its after-effects are seldom bad. In some of the excited cases it is invaluable. Hyoscine, in doses beginning with $\frac{1}{200}$ grain hypodermically and going to $\frac{1}{75}$ of a grain, is often very sedative in the excited cases. We combine tonics and sedatives very often. Lately I prescribed for a very intractable case of agitated melancholia with hallucinations, overpowering "suggestions" from her sexual organs, and deep misery—altogether a bad case of over a year's duration—a mixture of bromide of soda, arsenic, and iron with the most astonishing and immediate benefit. The bromides when long given are depressing. Tincture of henbane, in doses from 1 drachm to 4, is very useful as a temporary expedient in the very agitated cases, and so is conium; but, of all the day sedatives, I have found a mixture of Tinct. Cannabis Indicæ (from x. min.) and bromide of potassium (from xx. grs.) or sulphonal do the most good and the least harm to the appetite for food. We have not yet discovered a perfect narcotic

that gives brain quiet combined with increased appetite and body weight. Tinct. Lupuli I have found of much service in some mild cases, and it did no harm whatever; and of chloral-amide and urethane I would say the same.

Nature's counter-irritants and alteratives.—I have seen many cases cured by a crop of boils, a carbuncle, or an attack of erysipelas, and in one case by an attack of dysenteric diarrhœa. I think we shall some day be able to inoculate a septic poison, and get a safe manageable counter irritant and fever, and so get the "alterative" effect of such things, and the reaction and the stimulus to nutrition that follow febrile attacks. A new method of doing this has lately been devised by Dr Lewis C. Bruce, now one of the assistant physicians here, which is sometimes followed by astonishingly good results. He uses thyroid extract in doses of 60 grains a day, putting the patient through a course of this, lasting for from four to nine days in different cases. The patients must be put to bed during the treatment, and kept there for some days afterwards, for they become feverish, the temperature rising to 99° or 101° in different cases, the heart's action becoming lowered, and the patient rapidly losing flesh. The extract clearly acts as a direct cortical stimulant, as well as an excitant of fever and an alterative, for I have seen patients change from a melancholic to a maniacal condition during its use. After the extract is discontinued the appetite usually becomes ravenous. The weight runs up from half a stone to three stones, and a surprising mental improvement, ending in recovery in some cases, takes place. It should be used in every case that threatens to become chronic.

Prophylaxis in Melancholia.—I think our profession could diminish the amount of melancholia if they were consulted sooner and more often as to the prophylaxis in patients who have had, are threatened with, or who are predisposed to, states of mental depression. Especially is the preventive aspect most important in the dieting, regimen, education, and work of the children of this class. If we could make all these

measures counteractive of the temperament and heredity, instead of accentuating them unduly, we could do much good, and prevent an enormous amount of unhappiness in the world. It is surprising how soon such children show their brain instability. A "too sensitive" child should always be looked after. Children of this class take "crying fits" and miserable periods on slight or no provocation. We do not call these things melancholia, but depend upon it they often have a close kinship to it. Such children should be kept fat from the beginning; they should get little flesh diet, and much milk till after puberty. Their brain should not be forced in any way. They should be much in the fresh air. They should not read much imaginative literature too soon. They should be brought up teetotallers and non-smokers. They should sleep much. Public school life is often most detrimental to them. If they are bullied they suffer frightfully. (Read poor Cowper and Lamb's lives.) If they are taught masturbation it takes a frightful hold of them, and it is they who are ruined by it in body, mind, and morals. The modern system of cramming and competitive examinations is one of the most potent devices of the evil one yet found out for the destruction of their chances of happiness in life. Such children are often over-sensitive, over-imaginative, and too fearful to be physiologically truthful, and tend under fostering to be unhealthily religious, precociously intellectual, sensuously artistic, and at first hyperæsthetically conscientious. Now, a wise physician will fight against the average schoolmaster in all these things. Such children should be taught to systematise their time and their lives, to develop their fat and muscle, and to lead calm lives of regular orderly occupation.

As regards the prophylaxis in those who have already suffered from melancholia, at the risk of being thought to ride a hobby, I tell such persons, one and all, to keep fat, and keep their brains quiet. Let them take precautions in time. The falling off of a few pounds in weight may be to them the first real symptom of the disease returning, even though they

feel at the time as well and hearty as possible. It is at this stage that change and rest do most good. I always advise my recovered melancholic patients to weigh themselves regularly, and keep a record of their weight, to lead a regular life, and to practise system and order in their work. Reducing their ordinary lives to a routine is the safest thing for them if they can do it. Like leanness, want of system and method goes with a tendency to melancholia, in my experience. They should not work, or think, or feel in big spurts. And as the great epochs and crises of life—pregnancy, childbirth, the climacteric, and senility—approach, let special care be taken by them. Do not let them get to depend on soporifics for sleep. Nothing is more dangerous. An hour's natural sleep—"tired nature's sweet restorer"—may be worth eight hours' drug-sleep. A country life, with much fresh air, is no doubt the best in most cases, if it is possible. Regular changes of scene, "breaks" in occupation, and long holidays, are of course most desirable for such people. Though travel and change are very often harmful to actual melancholic patients, yet to many persons who merely have the temperament and the tendency, they are most effective in warding off attacks. I know several people who in that way seem to keep well and moderately happy. The great thing to be avoided is too fatiguing travel—seeing too much in too short a time.

LECTURE IV.

STATES OF MENTAL EXALTATION—MANIA (*PSYCHLAMPSIA*).

Physiological exaltation—Sanguine variety of neurotic temperament; "excitability" of disposition—Mental exaltation physiological in childhood; delirious exaltation easily excited by increased temperature in childhood—Exaltation and delirium occur at beginning and acme of febrile disorders; depression at end and afterwards—Sane *v.* Insane exaltation — Exaltation of function follows increased circulation, oxygenation, and heat in brain—Mania defined objectively, Melancholia subjectively. CHARACTERS. — *First Stage:* Sleeplessness; unsettledness; talkativeness; constant muscular action; changeability; irritability; diminished self-control; extravagance; loss of the sense of the proprieties, fitness, and conventional moralities; change in the natural affections and habits; "common sense" gone; increase in imaginative power and amount of mentalisation; "whole man" different; loss of body weight; denial that anything is wrong—*Second Stage:* Total loss of self-control; incoherence; violence; destructiveness; filthy habits; taste, smell, and common sensibility perverted; shouting; roaring; facial expression totally altered; rapid loss of weight, and exhaustion of strength; tongue and mouth dry; secretions altered, and menstruation stopped—The association of ideas in incoherence; presentation and representation—*Differential Diagnosis:* From alcohol; poisons; "suppressed" and "masked" fevers and inflammations; injuries to head; excited melancholia—*Prognosis:* 54 per cent. recover from mania (Royal Edinburgh Asylum). VARIETIES.—1. *Simple Mania:* First stage of ordinary mania or distinct condition —*Treatment:* Largely preventive and regulative, giving outlets for morbid brain energy—*Prognosis:* Good. 2. *Acute Mania:* Onset sudden or gradual; forms 8 per cent. of admissions to Royal Edinburgh Asylum; not so common or typical as of old—*Characters:* Within six weeks' duration—sleeplessness; appetite gone or perverted; muscular movements constant and purposeless; gesticulation; violence; unmanageability; unconsciousness; delirium; total incoherence; loss

or perversion of memory; presentation, representation, and attention; expression of eyes and face; high temperature increased at night; functions of skin, bowels, and digestion disordered—*Delirious Mania—Treatment:* Food; stimulants; open air; sedatives; skilled attendance; general management; safety; anything that impairs appetite or digestion bad; give muscular outlet to cortical storm—*Prognosis:* 60 per cent. recover, 7½ per cent. die, and 32½ per cent. become demented, or pass into chronic mania or monomania. 3. *Delusional Mania:* Delusion the essential element, usually fixed, with excitement—*Prognosis:* Not good; greatly depends on fixity and intensity of delusion. 4. *Chronic Mania:* Acute mania continued in a modified way over a year, with the usual elements of dementia—*Treatment:* A lunatic asylum—*Prognosis:* Bad—Preventive and hygienic treatment of tendency to morbid exaltation—"cutting short" an attack. 5. *Mania Transitoria* (Ephemeral Mania): A rare form; coming on suddenly, and lasting a few hours; commonly a "mental epilepsy," or a "masked epilepsy." It means great instability of mental cortex. 6. *Homicidal Mania:* Maniacal excitement, which chiefly takes the form of desire and attempts to take away life—*Prevalence of Mania:* It is more common *in Asylums* (not in general practice) than melancholia, and it occurs at earlier ages.

Physiological Exaltation.—Like conditions of mental depression, states of mental exaltation, up to a certain degree, may be normal and physiological. This is especially apt to be the case in persons combining the sanguine temperament and the nervous diathesis. Every one has met with the sort of person of high spirits who is easily elated, has little power of controlling the outward manifestations of exalted emotion, is quite carried away by joyous news or pleasurable feeling, so that he talks loud and fast, cannot sleep, cannot rest, acts in strange excited ways, and perhaps dances and sings—all without cause that appears sufficient to produce these effects. Such conduct may be perfectly natural and physiological in any man, if the cause be sufficient; but, in the Teutonic races, at all events, such causes do not occur very often in the adult lifetime of an ordinary man. If such mental exaltation does occur in any one on quite insufficient cause, or if it continues to manifest itself long after the cause has operated, we say that such a person is of a very "excitable temperament." Many

bodily diseases in persons of this constitution are apt to be accompanied, and are often much complicated, by such brain excitement.

Mental exaltation is perfectly natural in childhood. It is, in fact, the physiological state of brain at that period. Hence, whenever the temperature of the brain rises, from febrile disorders, in children, we are apt to have delirious mental exaltation. I found on investigation at the Sick Children's Hospital here, that by far the majority of the cases of delirium in the young patients there are characterised by pleased or exalted feeling, and by pleasant hallucinations, the few exceptions being usually severe burns or such very painful affections. But if a grown man exhibited the same symptoms of mental exaltation as are normal in a child it would be accounted morbid, and he would almost be reckoned insane. In children of neurotic constitution this is apt to become a most serious complication. While a high temperature is apt to cause violent delirium in such children, it is in them, too, that reflex peripheral irritations, such as teething, rickets, worms, undigested or indigestible food in the stomach, cause convulsions. The delirious and the eclampsic point of different children is a field well worthy of attention, and a knowledge of it might be most useful in their after life-history and disease-history. In adults of this constitution a febrile catarrh, a mild attack of rheumatism, or gout, or inflammation may be very serious matters, from the sleeplessness, nervous excitement, intensity of the pain, or the delirium present. All febrile affections act as a match to gunpowder in such a brain. The exaltation and delirium are usually contemporaneous with the beginning and acme of febrile attacks, while depression of mind follows the disease. I consider that the bodily temperature at which delirium begins in a child is a good index of its brain constitution and temperament. I have known a very nervous child always delirious at night if its temperature rose to 99°, while in most children this does not take place till it is 102° or over.

Apart from increased temperature, such children are subject to gusts of unreasoning elevation, during which they are quite beside themselves, rushing about wildly, shouting, fighting, and breaking things, not really knowing what they are about, this coming at intervals like the "attacks" of a disease. Most sorts of blood-poisons, many drugs, such as opium, henbane, Indian hemp, and alcohol, as well as an increase of body temperature, readily cause maniacal exaltation in the brains of which I am speaking; and I have seen such usually temporary exaltation not pass off, but become a prolonged attack of mania in several patients—one after a dose of cannabis indica, another after opium, and very many after alcohol. All those were strongly predisposed to insanity by heredity. I believe that convulsions, night terrors, and "hysterical" affections are, in children of neurotic heredity, the equivalents of maniacal attacks at adolescence and after in the same kinds of brains; while chorea, somnambulism, asthma, and epilepsy are the special cerebral neuroses of puberty and early adolescence in similar cases.[1]

Sane and Insane Exaltation.—There is much less difficulty in drawing the line in most cases between sane, or even between delirious exaltation and pathological insane exaltation, than between the conditions of sane and insane depression of mind, though many individual cases of difficulty are met with. The reasoning power—that of judging rightly and comparing—is affected sooner and more decidedly in mania, and the loss of control in action, conduct, and muscular movements is also sooner seen. That stage of loss of memory and consciousness where the personality is lost, and the former mental life and experiences have disappeared, where, in fact, the metaphysical *ego* has fled, and a false consciousness—an unreal *ego*—has taken its place, is far sooner reached in mania than in melancholia. Bevan Lewis[2] has "little doubt that the process of reduction is the same for both (*i.e.*, melancholia and mania), but in maniacal states the dissolution

[1] *The Neuroses of Development*, by the Author. [2] *Op. cit.*, p. 193.

is to a *greater depth*; the difference is one of *degree*." I do not agree with this hypothesis. It seems to me that a condition which causes pain must result from a different kind and not merely a different degree of cortical action from that which causes an exaggerated sense of well-being.

The name "mania" is apt to be used both professionally and popularly in a loose way, as synonymous with insanity, or even to indicate a mental craze or eccentricity that falls short of that. Nothing is more common than to see in medical papers "suicidal mania," when "suicidal melancholia" was meant. It is necessary, therefore, to define the term. Mania might be defined as "morbid mental exaltation or delirium, usually accompanied by insane delusions, always by a complete change in the habits and modes of life, mental and bodily, by a loss of the power of self-control, sometimes by unconsciousness, and loss of memory of past events, and almost always by outward muscular excitement, all those symptoms showing a diseased activity of the brain convolutions." We think of melancholia chiefly from the patient's subjective point of view, taking his affective change and his conscious mental pain chiefly into consideration, while we think of mania more from our own objective point of view, and picture the patient's talkativeness, his restlessness, and his manifest changes of personality and habits: just as in neuralgia we think of the patient's sensations, and in tetanus of the convulsions which we see for ourselves. The definition of mental exaltation, too, must not be taken as if it were the mere opposite of depression or of mental pain. I would, therefore, describe insane mental exaltation as being a morbidly increased and irregular production of mental acts by the brain with or without an increased sense of well-being or pleasure, but distinctly without a conscious sense of ill-being or mental pain. Dr G. M. Robertson has pointed[1] out that

[1] *Journal of Mental Science*, July 1890, "Does Mania include Two Distinct Varieties of Insanity, and should it be Subdivided," by G. M. Robertson, M.B.

in different cases of mania, the emotional conditions are of two kinds, joy and rage. The word excitement, used medico-psychologically, refers always to outward visible muscular acts, such as restlessness, muscular resistance, acts of violence, shouting, facial contortion, or movements or expressions of the eyes, or to an intense desire towards such acts only restrained by a strong exercise of self-control, to which we use the term "suppressed excitement."

Most melancholic patients can tell us how they feel. They know there is something wrong with them, even exaggerating their mental pain; while in most cases of mania the patients affirm they are quite well, probably that they are better than they ever were in their lives, and we have to judge of their mental condition from their speech and actions, which become to us the *symptoms* of the disease.

Varieties.—If we look at a number of patients who are classified as labouring under mania, we see at once that there is a very great difference indeed between different cases. Without going into pathology or causation at all, the outward manifestations show not only far greater intensity of morbid action in different instances, as is the case in all diseases, but a certain difference of kind of symptoms, mental and bodily, which I shall endeavour to assort for clinical and practical purposes into varieties of the disease; it being understood that these varieties are not necessarily distinct diseases or pathological conditions, but merely groups of similar symptoms that may be combined with other groups, or may be different stages in the same disease. The great advantages of classifying mania into those varieties are, that thereby a student is less confused in seeing patients so very different from each other, and more especially in the guide that is thus obtained in treating and managing patients. The varieties I propose to describe and illustrate by clinical cases are:—

a. Simple mania.
b. Acute mania.
c. Delusional mania.
d. Chronic mania.
e. Ephemeral mania (*mania transitoria*).
f. Homicidal mania.

Simple Mania.—When a man of common sense, who has been of the ordinary type as to conduct, demeanour, and speech, undergoes, without sufficient outward cause, such an intellectual change that he becomes loquacious, talking constantly to every one who will listen to him about anything under the sun, especially his own private affairs—when his judgment is manifestly not to be depended upon, and his views as to himself, his prospects, his capacities, mental and bodily, and his possessions manifestly exceed what the facts warrant—when he becomes fickle, restless, unconventional in his conduct, and foolish in his manner—when he acts without motive and without aim—when, in fact, his common sense has gone, and his power of self-control has become manifestly lessened, and when this lasts for days or weeks, we say he labours under simple mania. This condition would seem at first sight an easy one to describe. But it is not so; for though it seems simple, yet, when we come to analyse the mental faculties involved, and how they are affected in different cases, we find an immense variety of combinations. No one case is quite like another any more than any one man's mental development is like that of another. A condition of morbid mental exaltation may exist, and I believe does occur, among persons of a nervous heredity far more frequently than is commonly supposed, in slight forms, that are not considered insanity at all. I would go the length of placing the "lively moods" to which some people are subject in the category of a direct kinship to simple mania, just as I would place the "dull moods" of some people among the relationships of simple melancholia. The longer I live the more I am impressed with the fact that some of

the important acts in the lives of certain persons are the result of brain conditions that cannot be reckoned as being quite normal. The men whom one knows as subject to restless, energetic, boisterous fits lasting for weeks, who do childish, extravagant, or foolish things at these times, whose natural peculiarities are then much exaggerated, and whose common sense seems to ebb and flow in an unaccountable way, are of this class. If we inquire into the family history of those persons we are almost sure to find a nervous strain. We will usually find, too, that the more we take to studying the practical psychology of our fellow-men from the point of view of heredity and brain function, the more will those peculiarities impress us as being the same in nature, but less in degree, than those greater mental peculiarities that we call insanity. Not that for a moment I want to lessen the moral responsibility of such persons to society or the law, or to confuse the great assumption that underlies all social arrangements and all law, that all men are sane and responsible until proved by good evidence not to be so. Still the field I am indicating is a most interesting one in the study of human nature. I have known great fortunes lost and even made, great enterprises undertaken, great speeches made, great reputations impaired, unsullied characters stained irretrievably in the public eye, ancient families degraded, marriages contracted, adulteries committed, and unnatural crimes perpetrated by men and women whom I considered to be labouring under mild attacks of simple mania, but whom the world in general simply looked on from the ethical and legal point of view. Those persons were the victims of "the tyranny of their organisation"; yet our medico-psychological knowledge will have to be far more accurate and more widely diffused before we can save them from it or its direct consequences. In such cases we find that at a certain period in their lives a mental change took place. In some way their "characters" underwent an alteration. In my experience by far the greater number of the

cases of "moral insanity" were of this kind. Most of Prichard's cases of moral insanity I look on as examples of simple mania. As we shall see, morality, with its inhibition of lower instincts and tendencies, first disappears in simple mania. Being the last of the great human faculties to be evolved, as Savage puts it, it is the first to be lost. It is the highest brain "level" that first undergoes "dissolution." Of course I am not referring to those cases where no morals had ever come to a person by heredity, education, or example, or where the morals and self-control had been deliberately destroyed by the mode of living.

Case of Simple Mania, Change of Life, Immorality, no Legal Insanity.—I knew a gentleman, C. A., who was famed in his neighbourhood for his prudence, probity, and devotion to business, for his wisdom, morality, and religion, who, at a certain period of his life, after middle age had come on, underwent a total change. He became rash, indifferently honest, utterly careless of his business, foolish in his schemes, very doubtfully moral, and careless of religion. He changed in his mode of dressing, in the company he kept, and his way of living. His affairs got entangled, and he lost a fortune by foolish speculation, this being entirely new to him. Yet he mingled in society all the time; never said a particularly foolish thing; transacted business in a large way of the utmost importance to himself and others; and I should have been very sorry indeed for any one who had called him insane to his face, or taken steps to abridge his personal liberty or deprive him of his civil rights as a citizen. No jury in the empire but would have held him sane, and no judge but would have made his case a text for a homily on the danger of medical views in regard to insanity and the liberty of the subject. I venture to say that you will not have been in practice for many years before you will have seen men and women whose conduct will be utterly inexplicable except on the theory that it is the result of a morbid brain condition, — "motives," as

ordinarily understood, having little to do with it. Well, C. A. got through his fortune, ruined his reputation, and scandalised and estranged his friends, all without any "motive" of the ordinary kind; and all this came on suddenly and in entire opposition to the whole tenor of his life and to every principle that had ever held sway over him for twenty years. Yet legally sane he was, just because the brain change that I assume was the cause of all this did not go far enough to make him lose his self-control entirely, and to act manifestly as an lunatic. But, can any one who has studied mind from the brain point of view doubt that the man's mental acts and conduct during his changed period were morbid, and the result of morbid brain action? And this conclusion was vastly strengthened by the fact that his heredity was a nervous one, he coming of a family in which insanity and eccentricity had been prevalent, and that he had procreated epileptic children. And, by tracing his future life, we find that, still without any "motive," he again changed and settled down into a quiet-going, slightly senile man, with the fine edge of his faculties and dispositions somewhat taken off. In this, as in several others similar that I have met with, such a mild attack of mania came on shortly after widow-hood. I have seen this in both sexes. My idea is that this was not a coincidence, but that the sudden deprivation of sexual intercourse had something to do with it in this case as an exciting cause.

Such is an example of simple mania in its mildest form, not being reckoned insanity at all by the law or by society. You may perhaps save a fortune, or a reputation sometimes, and will certainly save much uncharitable recrimination and useless indignation on the part of relations by putting them in possession of your knowledge. When I am consulted in such cases now, I often recommend a long sea voyage in a slow ship, or a change of residence for a time, and try and get business matters settled on some sort of sure

footing, so that unsafe speculation or falling into the hands of scoundrels may be avoided. There is no class of case where harpies seem to fix on a man so inevitably as in this. Such men are easily led by adroit and unprincipled people, who flatter them and take advantage of their weakness. The sort of persons whom the man in his "right mind" would never have associated with get round him then. He tends to seek persons in a lower social and ethical position, and very often the loss of his self-control is shown by an excessive use of stimulants, or by frequenting bad company, both being mere symptoms of his mental disorder. The lower and baser parts of a man, kept under before, now come uppermost. Especially is undue excitation of the sexual desire and disregard of morals and appearances in gratifying it very common. I have found this to exist in nine-tenths of such cases. I once saved a business and a reputation by getting a man in the beginning of an attack of mild mania to take a partner, give up business meantime, go to spend a year with a friend on a sheep farm in Australia, live out in the open air, take much exercise, eat little animal food, and take bromide of potassium in 20-grain doses three times a day. This, in fact, sums up about all I can tell you in regard to treatment. The great difficulty is that such patients do not know that there is anything wrong with them, and will not believe it; in fact, are often very indignant, and quarrel with you if such a thing is hinted at. They sometimes look well, but they do not sleep well, and all of them are restless, and often worn-looking. They often eat twice and thrice as much as usual, and digest their food well. They often have their bowels moved twice and thrice a day, even if naturally of a costive habit. Their tastes usually change. They lose their fine feelings and delicate perceptions of things in taste and smell and sensibilities. I have known a man who needed to use highly magnifying spectacles to be able to do without them, and even to be able to read small print, when passing through an

attack of simple mania. In fact, I knew a man who, as the morbid brain excitement gradually passed away, had to use spectacles of greater and greater magnifying power. The body temperature is always, I have found, higher by about ·5° or 1° during such an attack.[1]

The following case of simple mania was one of great interest, from the natural power of the brain affected. C. B. was a man of very high intellectual and scientific attainments, with a heredity to the neuroses.—I have attended two cousins suffering from melancholia. He was of a sanguine temperament and robust bodily constitution, great mental energy and acuteness, prudent, discreet, and held the opinions of others in great respect. He had written much and done very good work. At the age of forty-five he lost his wife, whom he had sleeplessly nursed, and within a week proposed marriage to another lady, became excited, took two girls out of a brothel, got lodgings for them, tried to reform them, spent money on them, prayed with them, and slept with one of them, intending, as he said, to make her his wife. And he did some work in a sort of sporadic way, not sticking to anything. He slept little, and kept very late and irregular hours. Then he developed great brilliancy and social faculty, for which he had never been distinguished before. He especially liked ladies' society, and he was witty, clever, and had a miraculous memory, indeed a better memory than he ever had before. (I knew one man who, as he was passing into mania, would repeat a whole play of Shakespeare or a book of Milton, which when well he could not do.) He could quote long passages from every author he had ever read. Then he began to evolve wonderful schemes of all sorts — not quite insane schemes, but very nearly so. He got irritable with those who opposed him, and said they persecuted him. He went and called on all his casual acquaintances of any note, and made new acquaintances on slight cause. He had been

[1] "The Temperature of the Body in the Insane," *Jour. Ment. Sci.*, April 1868.

very fond of his children before, and now he spoke much of his affection for them, but really he neglected them. He quarrelled with his relatives because they remonstrated with him and tried to control him. He exhibited a morbid expansive benevolence. He gave away his money foolishly to the poor, or to anybody whom he thought needed it. He propounded to the philanthropists marvellous plans to terminate the world's misery. He went one night with his Bible in his hand to a brothel to convert its inmates from the error of their ways; but, after reading and prayer, the vice he hated was in one short hour

"Endured, then pitied, then embraced,"

and he had to leave his Bible in pledge, as he had not sufficient money in his pocket! All those things he spoke of openly. Soon after this his conduct became so uncontrolled that he was certified as insane and sent to the Asylum. He had succeeded in wasting nearly all his available means. When he arrived he was indignant, and made out that his friends had ruined his prospects by placing him improperly in a "madhouse." But his indignation was transient and skin-deep. He soon entered into the life of the place. He was an admirable and interesting talker, a copious and sparkling author in the *Morningside Mirror*, a hearty if not an elegant dancer, a great walker, a scientist, and a devoted admirer of all the fair sex, making love indiscriminately to lady patients, nurses, kitchenmaids, and paupers. And yet he could propound maxims as wise as Solomon's proverbs, and he was a stern and sarcastic censor of morals in others. But he had no common sense; and he could not help "making a fool of himself" if he had the chance. He could not be trusted anywhere out of the Asylum. He talked about his most private concerns to any one who would listen to him. He was very credulous, and in conduct he showed small realisation of the difference between *meum* and *tuum*, or of the sanctity of the virtues generally. His memory was

prodigious but not exact; and he was never at rest. His sexual appetites were strong, but not really so strong as his erotic imaginations and likings. He told most disgusting stories "for a moral purpose" to others, and he was better up in the sexual history of great men than any man I ever knew. After having one morning abused me most heartily, he sent towards evening a letter addressed—"Immediate. The sun has not gone down. Morningside. From my prison, where, like Joseph, and Peter, and Paul, I was put on false accusations. My dear Clouston, I beg your pardon for speaking to you and of you as I have done. I want some liberty. Try and let some patients out, and you will become the greatest man of the day. Give the excited ones sedatives like tobacco or better food. Dismiss such men—*et audi alteram partem*, that is, hear my version of things. Let me get to town to-day. I need a change. Think who I am. Since 1847 the friend of Thomas Carlyle and Alfred Tennyson; of Owen since 1838; of Darwin, of Sir John Richardson, Rae, &c., &c., &c." (He had casually met these men or called on them as he was becoming ill.)—"Yours ever.

"*P.S.*—Why have you not shown me your children? I do not bite, I only bark.

"*P.P.S.*—Read this to any who may be concerned."

Persons labouring under simple mania always think themselves in the right, and are very sensitive to criticism and indignant at it. There is much of what one can only call cunning. C. B. could control himself for short periods when he wished, or when self-control was to bring any advantage; he would pretend to be most friendly with the powers that be, in the Asylum, before their faces, and then turn and abuse them behind their backs. He would, to strangers, most cleverly make things appear extreme hardships that he did not feel as such. He ate enormously and slept badly, but did not fall off very much in flesh.

After six months he was so much better that he was sent

to a distant part of the country, where he stayed for far too short a time. He made an unsuitable marriage with a woman below himself in social station and education, had children by her, but soon got tired of her, saying she was a prostitute. He then lived an eccentric life for twelve years, getting syphilis, as he said, from "using an unclean handkerchief"! At the end of that time he had another attack of simple mania of the same general character as the one described, but all the symptoms more severe. He was more incoherent, less brilliant, less interesting, more disgustingly immoral—his brain, in fact, had the fine edges of all its qualities taken off. He died, after a few years, still maniacal, and with some of the mental enfeeblement of dementia.

Such a patient must be regarded as suffering from simple mental exaltation with mild excitement, the result of a hereditary instability of brain. My belief is that brain-work and education tend towards this condition in those predisposed. One cannot speak dogmatically, but I think if such a man's brain had never been highly educated, or if he had not taken to intellectual work, or even if his wife had lived, he might never had developed the morbid brain elevation at all. It might have remained all his life, as it had done for forty-five years, a mere potentiality. Such cases are very difficult to treat and manage. They will not be controlled outside an asylum, they create scandal and waste money, yet it is for a long time impossible to certify them as insane; and when sent to asylums it is undoubtedly hard on them, for they are sensible and irritable, and capable of enjoying life to a large extent. Such attacks are usually over six months in duration, but I have seen them very transitory and pass away within six weeks. I do not know any method as yet to influence favourably such morbid energising of the brain except quiet, exercise in the fresh air, non-stimulating food, warm baths at night, the use of sulphonal in small doses, or the bromides.

The following case of simple mania, of short duration, was undoubtedly benefited by restraint in an asylum. It was that

of C. C., a member of a learned profession, aged 59, of a sanguine temperament, and cheerful and frank disposition, in apparently good bodily health, and of good habits. He had been morbidly excited in mind on four or five previous occasions, the excitement passing off in six weeks, being treated by his being sent off to a lonely country place to "walk it off" among the hills. There was no admitted or known heredity—such facts in family histories are kept very secret and are soon forgotten, so that they are often really not known to the younger members of a family—except that his mother had been in a state of senile dotage for ten years before her death at a very advanced age. Six weeks before admission he had become changed in disposition, altered in conduct, unsettled, much elevated, always talking about the Turco-Servian war that was going on then, restless, sleepless, changed in his appetites and tastes for food, and he began to dress in an entirely different way from what was natural to him. In his case the most striking alteration was in his truthfulness. Naturally a truthful man, when his illness began he took to telling lies by wholesale about everything, and for no purpose or "motive." He was boastful to absurdity, bragging of qualities nearly the opposite to those needed in his profession. This human nature tendency to be very proud of things out of one's line—the lawyer of his medical skill, the parson of his worldly wisdom—you will find in an exaggerated degree in mania. He was a marvellous swimmer, a splendid boxer; he would dilate with circumstantial detail on the numbers of expert swordsmen he had overcome and killed, and on the pugilists he had thrashed to within an inch of their lives. He said he was going out to the war, and would soon be made the general of the Servians, and he actually purchased some appropriate weapons. Yet there was a little method in his madness, for he was somewhat careful about whom he told those wonderful tales to, and his manner of telling them was not quite that of a lunatic who fully believed them. He drank too much, and his habits were not orderly or cleanly. An

hour before he was taken to the Asylum he had, to some persons, of whom I was one, whom he thought congenial spirits, told his best stories, and had exhibited a mixture of extravagance, lies, boastfulness, and obscenity that quite convinced two of the company—doctors there to examine him—that he was very insane, and they certified him at once. From the way he had been talking, those who took him to the Asylum were prepared for a desperate resistance. But there was nothing of the kind. With a verbal protest, and a manner as meek as Moses, with no resistance and no fight at all, this wondrous pugilist went to the Asylum. He collapsed at once, and his whole effort was to explain away his conduct, and apologise for his language. It seemed to act like a charm on him, and to restore much of his power of self-control. He again, and at once, assumed the speech and manner of an elderly parson—this pugilist of an hour before. And he never again indulged in quite such violent speech, or exhibited such extraordinary conduct, though he dressed queerly for a few weeks, did not sleep well, and was elevated in his demeanour. He tried hard to attach unreal meanings to his tales, and to apologise for his extravagant conduct. In three months he was quite well, and kept well for several years, when he had another very mild attack, and this time his morbid energy found an outlet in publishing a book. The sudden pulling of himself up by a patient on being taken to an asylum is often seen, both in mania and in melancholia, but it does not always last. The brain pace breaks out again, and sometimes far harder than before, because at home, perhaps before children, as much self-control as possible is exercised, while in an asylum a man frequently thinks there is no object in exercising it and does not do so.

In other cases of simple mania a morbid vanity is exhibited, as in the following case. I have no doubt that the weak points of normal character are those that are usually exaggerated in simple mania:—C. D., a tradesman, was sent as a patient to the Royal Edinburgh Asylum, and at first he seemed to be

merely a talkative and egotistical old gentleman. But it soon appeared that authorship, and poetry in particular, was his special weakness; while, along with this, there was a peacock-like vanity in dress and demeanour that was very ludicrous. By a pompous manner, a sesquipedalian speech intended to be impressive, a combination of the juvenile and the Byronically poetic in dress, and a very big book always carried under his arm, he showed his morbid vanity. He was most touchy when interrupted in his long speeches, and he tried to be very withering in his contempt. He used to write me a letter of fifty pages of foolscap in the prosiest style if he had a simple matter to bring under my notice. Indeed, his speeches, which he tried to inflict on me every day, used to try me pretty nearly up to the point of my own power of endurance, though I am pretty well seasoned in the art of "bearing fools gladly." His poetry was trash, which he produced by the ream, thinking it was equal to Shakespeare's, and he tried to read it with due dramatic effect to the ladies in the drawing-room in the evenings. Yet, with all this, he was not incoherent. He had periods of intensified excitement, when he would scold much. He was very thin when admitted, and his nervous and nutritive power and tone low, so I fed him well, gave him a liberal allowance of good London porter, extra milk, and cod-liver oil, and insisted on his being in the open air most of the day. He got fat; and as this took place his foolish vanity and excitability diminished, and he grew into a moderately rational human being, who left the Asylum with the full intention of returning to his business. But the loss of external control seemed like taking off the governors of a steam-engine; he got thin, poetic, and morbidly vain, and had to be sent to another asylum, where surely they did not give him as much paper as we did, for he abused the place most heartily, and wanted badly to come back to Morningside, but we had no room for him, and he died in a year or two, still insane.

I have met with cases of simple mania where the lack of controlling power was seen, not so much in speech or ordinary con-

duct as in want of muscular inhibition. I had a young lady, C. E., under my care once, who came of a very nervous family, and whose brother's case I have referred to (A. D., p. 39) as exhibiting such morbid indecision and paralysis of volition that he could not make up his mind which stocking to put on for half an hour. She seemed perfectly well when one spoke to her, but when left alone she would make faces, jump about, tear her clothes, turn heels over head, scream, pick her skin, and masturbate apparently automatically without much erotic intent or much sexual feeling. In the midst of all this, if one addressed her she would sit up and talk as intelligently and quietly as possible. She had no delusions, no tendency to violence, and was gentle and lady-like. She came into the Asylum as a voluntary patient, and declared she could not restrain these movements. Like chorea, they were apt to come on in an aggravated way at the menstrual periods. They were unlike choreic movements in their real character, being, if one might use a contradiction in terms, automatically volitional. She did not sleep, and could not employ herself for any length of time. She recovered from the first of these attacks in a few months, but then had a more severe one, on which no treatment had any permanent effect, and she got thinner and more attenuated, and died of exhaustion in about two years. She was free from delusions, and, in a way, intellectually sound up to the last, during the periods when she picked herself up. Every sort of treatment was adopted, everything to fatten and improve the nerve tone that we could think of—cod-liver oil, maltine, the phosphates, hypophosphites, arsenic, strychnine, &c. All the usual sedatives and narcotics were tried — the bromides, opium, henbane, cannabis indica, lupuline, camphor. She was anæsthetised by ether and chloroform. She had blisters, warm baths, exercise almost to exhaustion, &c.

That was an extreme and pure example of a symptom which we see commonly enough in mania, viz., automatic co-ordinated movements that are ordinarily voluntary, but result

evidently from morbid exaltation of function in the highest motor centres in the convolutions. It is a *muscular mania*, the intellectual and volitional power being comparatively intact, but the highest ideo-motor inhibitory centres being paralysed. It was a curious fact that her brother should have been affected in such a different and psychologically contrasted way,—in the one, the will not being able to put the muscles into action, in the other, not being able to stop them. I have seen the same motor phenomena in melancholia.

I said that simple mania assumes the form of "moral insanity" at times, without apparent intellectual aberration. *The system of checks on inclination, doing duty for its own sake, and efforts after the good, which by the constant strivings of years has become a habit, and constitutes the man's moral character, sometimes vanishes like the early dew at the beginning of an attack of mania. I shall give an example.* C. F., a lady of good education, good morals, refined disposition, and lady-like tastes, had several attacks of mental disease, of which the following were always the symptoms:—She slept much less than usual, and got thinner. Her expression of face changed. Instead of being a pleasant-looking woman, her features acquired a coarser look. She ate twice as much, and lost the delicate ways of a lady. She lied, stole, whored, and took pleasure in annoying or hurting every person she came across. She was cruel to animals. She was such a blister and firebrand that she could live in no private house with others, and in the Asylum she could set up ten patients in as many minutes. She had the most extraordinary instinct in finding out the weak points of her fellow-creatures I ever saw, and she remorselessly used this for their annoyance, this being her chief delight. She did not court a fight, but never declined one with any person whom she had roused to fury, enjoying it too; and yet, with all this, she was plausible, always with a ready excuse for her scrapes, could make herself most agreeable at an evening party, and would often have defied any doctor to find facts indicating insanity

in an hour's conversation. It was only by continuously watching her conduct that such facts could be got, and she could be certified. She was such a nuisance that asylums passed her on from one to another as too troublesome to keep, though she seldom got into a rage or became outwardly excited. And all this came on her at intervals like any other disease, passing off, and leaving her the same refined moral and pleasant lady she had ever been.

Case of Sudden Immorality in a Girl.—I had once under my care a girl, C. G., aged 17, the daughter of a gentleman, her mother being intemperate. Had been well brought up, and, up to within a week of her admission to the Asylum, a well-conducted girl. She was of a robust and perhaps rather sensual constitution, who, without showing any previous sign of insanity, except conduct that was called wayward and disobedient, left her home, wandered to where some workmen lived, in a lonely place many miles off, and passed the night with them. She showed no other signs of mania, when taken home, than utter disregard of her parents' feelings, bad language and violence to them, want of right feeling of any sort, and threats to commit suicide. Those symptoms were recognised as constituting insanity, and she was sent to the Asylum. This state of matters passed off in a few days, and she became apparently well in all respects, except that she seemed blunted in her feelings, incapable of applying herself to any work, and at times sullen and stupid. Her catamenia had been irregular, and she had suffered from severe headaches before the attack. She remained free from excitement, though not considered well, for about six weeks, when, just before menstruation, and preceded by frightful cephalalgia and a day or two of dulness and mental torpor, she had an acutelymaniacal attack of great violence, coming on like an explosion, and lasting for a few days. She had three of those within a month; then she had in the next two months several sullen stupid attacks. In five months she recovered. Each maniacal attack was accompanied by a foul tongue, deranged

bowels, flushed face, total loss of memory and power of attention. After she recovered she had no recollection of anything that occurred during the attack. Thus the immorality and the disobedience and disregard of her parents' wishes were clearly shown to have been symptoms of an attack of simple mania which preceded the three acute attacks.

Case of Maniacal Immorality in a Boy.—I once saw a boy, C. H., of 14, whose father was a drunkard, wife-beater, and of a most ungovernable temper, though a clergyman, and his mother a down-trodden, rather soft woman, his elder brother being just like the father. His father used to make C. H. drink when a mere boy, and taught him to smoke. When a child, he had been of a very ungovernable temper, utterly undisciplined, and disobedient, assaulting his mother, swearing, shouting, breaking open locks, knocking about furniture, threatening to shoot first his sisters and then himself, buying a pistol and practising with it. He could not be got to go to school, or to do anything useful. His habits were irregular. He would stay in the house for weeks at a time, and was unsocial and unplayful. When I saw him he was quiet and apparently reasonable. He was a delicate, nervous-looking boy, with a restless elevated expression of eye and face. When I said he would be sent to sea if he did not behave better, he replied the man who came for him would get the contents of his revolver. I recommended that he should go and travel with a sensible tutor, and this was attended with benefit to him.

Not only are the morals affected, but the whole character is altered. I have seen some people improved vastly in certain respects during a slight attack of simple mania. I knew a naturally reserved, proud, unsocial, rather cantankerous, selfish, stupid, miserly man become for a time genial, bright, good-mannered, and generous during such an attack. The changes in the tastes, instincts, and even in the organic appetites are often marked and most peculiar. Most patients do not like the same food as when in health. They often

take to excessive smoking, and sometimes to drinking, independently of their habits in those respects when in health. The delicate likings are not only lost, but new repugnances develop themselves, and former friendships are commonly altered or lost. The personal habits tend to become untidy, slovenly, and dirty; unconventionalities of all sorts are indulged in—and, by the way, this applies to most of the insane.

The higher intellectual tastes also change. I knew a man who could not appreciate, and, as a matter of fact, neglected his favourite authors, taking to their exact opposites. When well, he read Gibbon and Hume; when ill, he took to Burns and Swinburne.

The sort of brain evolution into insanity at an early age, which the Germans have called "*Primäre Verrücktheit*," in which changes of character, foolish insane conceits, waywardness, unreasoning extravagances, unsocialness, gradually develop into delusional insanity or dementia, may at the beginning usually be classed as simple mania. Many cases of "Paranoia" seem to be of this character, with or without delusion. The *Folie raisonnante* of the French corresponds in a general way to the milder cases of simple mania.

Transition Stages.—Simple mania is very often the first stage of acute mania, which we are to consider next. The following letters of a young unmarried man, C. J., who naturally was of a modest, rather shy, disposition, but who had for a month laboured under simple mania with strong exaltation of the *nisus generativus*, and was passing into acute mania, illustrates the mental condition of such a person. The first two letters are elevated and delusive, but nearly coherent; the third, a month afterwards, very much more extravagant.

EDINBURGH, *7th December.*

DEAR DR CLOUSTON,—I had a good night's sleep last night after the pleasant evening I had, and feeling sure, after the kindness I have met with here, that the best way of getting a perfect cure is to make a clean breast of it, I now try to do so. I believe that I am a married man, and that a lady called Miss ———, the reputed daughter of ———, is really

my wife, further that she has had children by me, one of which is dead. I believe I have ten children by her still alive, three of whom I used to believe the children of my late uncle ———, who now live with his widow, at ———, four who were brought up by ———, and three who were brought up by my reputed parents' friends ———. I have long had this belief, but not having any proof but instinct to guide me, I refrained from stating it. I believe it is true. Should it not be so, why, it only proves my love for her and them, and I feel sure you will try and cure me of the delusion. I write as one Christian to another older and more experienced one.—With all respect and confidence,—Yours ———.

7th December.

Dear Dr Clouston,—In my last letter I put the cart before the horse. I believe Mr ——— (a fellow patient) to be Duke Constantine, my father and Miss ——— to be ———, but I am wrong there I think. —Yours faithfully ———.

Morningside, Edinburgh, *8th January.*

My Dear Old ———,—I have at last fallen in love with the prettiest girl you ever saw. I got your letter, thanks, old man, and the quotations which I enjoyed, and went to look for it in an old coat, but couldn't find it—well but this girl you know I'm a bit of a student and a selfish brute, but for all that I love the girl, you may call a thing two names, but it's the same nearly ?

Now the fact of the matter is they are so uncommon kind to a fellow here women and men, it's a fact, but then I was far far below the normal point of sanity, that even although I was doomed to remain here all my natural life, I could do it with ups and downs, but you see this girl, ———. Were I pronounced sane enough to be out, she might have me. The fact is, ———, I'm such another uncommon agreeable fellow at times, but then it's the liver, as an Irish friend of mine, that I suspect one may say it as a joke. Dr Clouston, who paints his face, keeps me here as a profit to the concern. Now this girl ———. If in a fortnight Clouston doesn't let me up to Craighouse, that's the superior house where we get tarts, but there is a very black hole of a boot-house yet, would you as an S.S.C., is it, or no, a writer, take up my case as a sane man, for the girl's sane you know. I have enough to pay you some £1600 I think and over, and I'll spend it all for the sake of the honour of the sex.

The Christians here all love one another, though we fight at times like the Kilkenny cats, but try afterwards and bury one another's remains for the sake of the health of the remainder. There are a few dear little children here, pigs and rabbits.

I'll let you hear in a fortnight, if the powers will let the epistles pass.

You never sent me marriage cards.—Your aff. friend.

P.S.—How's the little boy.

Acute Mania.—The "raving madness" of the older authors,

or acute mania, is perhaps the type of all insanity, both in the popular and professional mind. Being the least rational, least conscious, most noisy, most unmanageable, and sometimes the most dangerous variety of mental disease, it affected the conceptions and the treatment of all other varieties in a most unfavourable way. In it, many patients had no more "reasoning power than a wild beast," and all persons concluded to be insane—the conception of insanity was then a much narrower one, embracing much fewer persons—were accordingly treated by manacles and chains, stripes and darkness. Small compassion was felt for them, few laws protected them, little medical skill or study was exercised in their behalf, for they were reckoned beyond the pale of ordinary humanity. Even in Esquirol's time, at the beginning of this century, such patients are pictured in wild contortion and fury of look and action, and are represented heavily bound in his illustrations. Yet, this is a type of disease that is nowadays not at all so common as others.

Statistics.—Out of the 2377 admissions into the Royal Edinburgh Asylum during the seven years 1874–80, only 297, or about 8 per cent., were classified as acute mania, and there were not twenty of these that could have sat for Esquirol's pictures. Acute mania may be defined as intense mental exaltation with great excitement, complete loss of self-control, with sometimes absolute incoherence of speech and loss of consciousness and memory. After twelve months it is by some authors arbitrarily no longer reckoned acute but chronic mania. Some authors set up a period of forty days, during which alone the disease was to be called acute mania, but this has no foundation in any clinical fact.

Inception.—Acute mania begins in various ways. The most common is by its commencing as simple mania, and then passing into the acute form. But I have seen it begin quite suddenly, the patient being one hour a sane rational responsible being, and the next acutely maniacal. It often has a melancholic prelude. It sometimes begins by the patient's

expressing a delusion out of which, as it were, the extravagances seem to arise. Sometimes it begins by emotional, sometimes by intellectual exaltations and perversions, sometimes by both. At other times it begins by alterations of habit, appetite, and propensity. It commonly has premonitory symptoms, bodily and mental, such as headaches, a confused feeling in the head, a muscular fidgetiness, an unrest of body and mind, a feeling that something is going wrong or dreadful is to happen, a consciousness of impending insanity, a feeling of wild commotion in the head, as if it were to burst, an impulsive desire to do something, to break glass, or do violence to those within reach. There is usually disturbed sleep and constant dreaming, commonly of an unpleasant kind. I have known the temperature to rise to over 100° before even the patient could be said to be in any way maniacal. All those symptoms in a typical case are soon replaced by great restlessness and muscular agitation; a complete change of emotional state, this often becoming very joyous; a rapid and uncontrolled passing of the ideas through the mind; vivid kaleidoscopic mental pictures of the past; scraps of former life and experience suggested by chance associations; a tendency to constant talking whether any one is present or not; passing from one thing to another and soon becoming incoherent of speech. The manner is utterly changed, being usually jolly or fierce. There may be ceaseless laughing, or scolding, or swearing. Conversations are held in loud tones with imaginary people whose voices are sometimes heard or their forms seen. Sometimes, too, there are hallucinations or perversions of smell and touch. The common sensibility and all the senses may be hyperæsthetic at first, but soon become dulled. Sometimes there is a rhythmic action of mental and muscular centres evinced by rhyming all the ordinary conversation, or by regular movements of the limbs and body. Frequently there is a tendency to shut the eyes so as to exclude the real impressions of the senses, and live in the false consciousness created by the morbid energising of the

brain. Conversations with old friends now dead will be carried on. Scenes of childhood and years gone by will be vividly realised. The temperature is over 99°, often over 100°, the pulse quick and sometimes full, and the skin moist at this stage, the tongue getting furred, the appetite usually gone, the tastes and sense of decorum and decency perverted. At the end of this stage the power of self-control may be utterly lost, though by rousing him the patient may by an effort pick himself up and talk and behave rationally for a few minutes. The memory may at this stage be good, and the patient remember afterwards what happened then.

Delirious Mania.—A still further stage is when the patient gets more actively excited, shouts, sings, attacks those about him, mistakes their identity, calling them by different names, thinks they are "acting" on him, rushes about, and would sometimes injure himself or those near him. The tongue gets more and more foul and soon dry, with sordes on the teeth and lips; the appetite is not only gone, but there is a strong revulsion against food, so that forcible feeding has to be resorted to. The speech becomes absolutely incoherent, till a stage is reached where there is no consciousness, memory, power of attention, or any care for the calls of nature. This is the "delirious mania" of some authors, which they maintain to be a distinct form of mental disease, and say is a very fatal disease indeed. I think, on the contrary, that the worst cases very often recover.

Memory, Incoherence, Hallucinations, Illusions.—The degree to which there is remembrance afterwards of the events occurring during acute mania differs greatly in different cases. The friends of patients will usually be most anxious on this point, fearing the effect, when recovery has taken place, of the recollection of being taken to the asylum, of being fed, &c. I advise you to be careful in predicting on this point. In some cases the whole period of the disease is a complete blank afterwards; but more commonly things heard, seen, and experienced during the almost delirious period, are remembered

afterwards in a sort of distorted, exaggerated way. Patients often remember and complain of the restraint and the force needed to overcome their violence, the compulsory walking, dressing, and feeding, but have no recollection of their own condition at the time which made all these things necessary. I think that the memory of events during the disease is regulated by the degree in which the power of attention is unaffected. In health you know how much memory depends on attention, which, like a muscular act, implies much fatigue in its prolonged exercise. There may be a presentation of an object to the eye, or a sound to the ear, yet if there is no attention there is no brain registration, and no after power of *representation* or conscious memory. The late Professor Laycock's[1] views in regard to memory, organic or inherited, in regard to synesis or the registration of an impression, in regard to the recollection or the act of calling up the impression to consciousness afterwards, are very important in our study of the clinical symptoms of mania. The ravings of a maniacal patient are often well worthy of study, both as a medico-psychological problem, as affording an insight into the man's mental history and constitution, and as a symptom of much practical import to the physician. There is seldom such a thing as real "incoherence." The words and the ideas cohere by some bond or other. They always relate to former perceptions, thoughts, and experiences, that have been registered in the brain tissue. Those are represented to the altered consciousness in quick succession by chance, not real association. A careful study will often succeed in discovering the association of even the most apparently incoherent ideas. The ideas have had some former connection in the consciousness of the patient. They come with great vividness, so that memories—*representations*—are taken for actual presentations to the senses. I had a maniacal patient who had kept dogs, and their mental images were evidently as strong as the real

[1] *Journal of Mental Science*, August 1875, "Some Organic Laws of Personal and Ancestral Memory."

sight of the animals before his eyes had ever been. He called them by their names, pointing to where they stood, talked to them and heard them barking. His reasoning power being perverted, he could not correct those impressions, and he believed the cerebral images of his former presentations to be present realities. We may either suppose that, through morbid activity in the nutrition and energising of the centres of sensation, those molecular changes which each previous perception had left are rendered more vivid and more like the original, as when a photograph by the stereoscope is made to look real and solid, or that, through failure in the comparing and judging power of the brain, those faint images, which we in health call memories, are actually mistaken for real perceptions of real impressions on the senses, just as when in a dim light and dreamy humour the pictures on the wall stand out as real men and women. In insanity those false beliefs in sense impressions are called *Hallucinations*, to distinguish them from insane delusions, which are false beliefs of a more abstract kind. *If a man of fifty believes that he fought at Trafalgar, it is a Delusion; if he believes that he sees before him Nelson looking through his glass, that is a Hallucination. There is a false belief affecting sense impressions, to which the term Illusion has been applied by some authors*, but this term will have to be given up in this sense now that Mr Sully has written his book on Illusions used in a different meaning.[1] *In the sense I refer to, if the person really saw a man before him and said that he was Nelson, it would have been an Illusion,—there being a real sense impression, but this being misinterpreted into something quite different from what it really was.* Certain cases of acute mania are greatly characterised by the prevalence of hallucinations of different senses. All those symptoms most of us now believe to be in some measure explained by the theory of the morbid excitation of Ferrier's and Hitzig's localised centres in the cortex of the brain, those centres where the impressions from the senses are received,

[1] *Illusions*, by James Sully.

and where co-ordinated motions arise. As further progress in brain physiology is made, no doubt we shall be able to localise in the brain the causes of perverted mentalisation of different kinds.

As illustrating extreme incoherence, I give a small bit of a "letter" of twenty pages, containing a string of 14,000 words, almost all adjectives and nouns, with no more connection or aim than those in this specimen:—"Mediterranean, horses, anathematised, Athanasius, propagated, emphatic, monasteries, diocese, Egypt, hermit, biographer, abuse, furor, fury, medium, policies, police, hobby, sacred, phrase, administration, ministerial, monasticism, ... counsel, conviction, revelation, moderate, junior, transact, absurd, disinherit, repudiate, maternal, instinct, claimant, reiterate, clever, rumour, demurred, finesse, illusion, abstruse." Now you see that there is a sort of association of ideas between a great number of those words, and you can imagine how one arising before the mental vision would suggest the one next it. Here is another letter, from C. K., of a more usual kind of half incoherence:—"Dear Durham's Allah, You will please see that Eliza and Bella are out. Mr Swan (his attendant) is to give you this in a few minutes. Compts. to Victoria and my mother Queen Elizabeth. I am putting 'John' before John Addison, as I think him entitled to it. No kilts my bonnie Durham. My 'charm of life.' More than India's goods to me. Blessing on my bonnie wife. I will love you till the day I die. Compts. to Louise and darling Beatrice, Jane Shore, and Elizabeth. Come into the garden, Maud,

"The tear fell gently from her eye,
When last we parted on the shore,
My bosom heaves with many a sigh,
To think I ne'er should see her more.

'Weep not, my love,' I trembling said,
'Doubt not a constant heart like mine;
I ne'er can find a prettier maid,
Whose charms can fill this heart of mine.'

'Go then,' she said, 'and let thy constant mind
Oft think of her you leave in tears behind;'
'Dear maid, my heart's embrace my wish shall be.
The anchor's weighed! The anchor's weighed!
Remember me.'"

There is no difficulty in seeing the association of ideas, or the verbal or alliterative suggestions running through this "incoherence." A rhyming speech, a poetical way of putting things, a misquotation of poetry, can all be seen in the above letter.

The effective condition in this, as in every variety of mania, is one of perversion or paralysis. We would describe the condition in most instances by saying that those dearest to a man are most disliked, those most trusted are the objects of suspicion, those most intimately associated with the patient are most shunned. It is this which, more than anything else, makes its occurrence such a terrible calamity. Conjugal affection is most and first apt to give way; and it is a very common fact that where we have prolonged and incurable insanity the conjugal affection of the sane husband or wife, in most instances, ceases long before the maternal or sisterly affection of the sane blood relations. A shrewd old Morningside head attendant, of an observant if somewhat cynical turn of mind, was the first to point this out to me in regard to those who came to visit the chronic patients in the Asylum. He said he noticed that wives and husbands were the first to diminish the frequency of their visits, and soon came very seldom, then brothers and sisters, then fathers, and, last of all, mothers and old aunts, who never ceased to come, however uninteresting the patient might be, however long he was insane! No rebuffs from the patient would discourage them; no want of reciprocity would cool their love and interest, which never failed. I commend this observation to students of the affections.

The actions of patients labouring under acute mania differ as much as their speech. They can all be referred to the

morbid excitation of the motor and the ideo-motor centres in the brain. One man is simply restless, another shouts, another sings, another rushes about wildly, another attacks those near him, this being usually the result of delusions that they are going to injure him. Some violence on slight or merely imaginary provocation towards those nearest and dearest to them is common. In Plate III. (the facsimile of a patient's letter) there is seen incoherence, rapid change of ideas, and hallucinations of sight. Sometimes the patient would injure himself in his wild fury by dashing himself against walls, through windows, &c. But it is surprising how much more rarely than is usually supposed maniacal patients are really or to any extent very dangerous, either to themselves or others. In this matter old opinion and prejudices, the fact that a few patients are dangerous, or that a dangerous stage occurs in some few cases, have given a wrong general impression, and done very much harm in the treatment of acute mania. But we are slowly getting over this, for now we endeavour to assume that any patient labouring under this disease is not dangerous till he is proved to be so, instead of the opposite old maxim that he was to be regarded as dangerous till he proved himself to be safe; which had this unfortunate result, that the restraints and restrictions and supposed safeguards imposed on him so irritated him that, if he was not dangerous at first, he was probably made so by them. No safe outlet was provided for his morbid motor energy, so that, like all pent-up force finding no outlet, it became dangerous and often killed the patient.

The motions and gesticulations of an acutely maniacal patient are often in an exact degree the muscular equivalents of the ideas and emotions passing through his brain, just as they are in the case of a savage or a born orator when he makes a speech about a subject which excites him. The most awkward of men often becomes easy in his motions when maniacal. The expression of the face is always changed, and also the appearance and expression of the eyes. Usually the

man is so changed that he looks "a different" man. He is always worn-looking, and this is more particularly the case in the female sex. There is no natural beauty of face that will persist during acute mania. Commonly the face is flushed, the skin muddy and less delicate in tint and texture, the features unpleasant to look on. As might be expected, the infinitely delicate co-ordinations and fixations of the small muscular strands that in the face mirror forth and express the mental and emotional states are, in this disease, inharmonious, and express instead inco-ordinated mental acts. In this disease, and in insanity generally, the expression of the face closely follows the mental disturbances. We may have exaggerated expression, diminished expression, asymmetrical conditions, partial or complete paralysis of the muscles of expression, and every degree and kind of dissolution of facial expression. Dr John Turner has given us a very careful study of this subject, which admits of still further elucidation.[1] The eyes are more especially characteristic. They usually glisten somewhat as in fever; the eyelids are more widely dilated, so that the white is seen round the cornea; and their expression is that of excitement and turmoil.

Bodily Symptoms.—The whole digestive tract is affected more or less. The secretions of the mouth and the saliva are altered in character, and when inoculated produce a septic or irritating influence. The sores resulting from a bite of such a patient are apt to be angry, the inflammation running up the lymphatics. The most recent investigations show the septic character of the saliva. The tongue is usually furred, and the breath foul. When the condition becomes delirious there is always a tendency to have a dry mouth and tongue, with sordes on the teeth. The appetite for food is usually paralysed, though not always that for drink. The digestion is often vigorous enough, though not

[1] "Asymmetrical Conditions met with in the Faces of the Insane," &c. By John Turner, M.B., *Jour. Ment. Sci.*, Jan. and April 1892.

in the exhausted stage. I have found the stomach full of undigested food in patients who had died of exhaustion from acute mania. The bowels tend to be costive, though this is not always so. The temperature is usually from one to two degrees above the normal, especially the evening temperature. As we shall see, it runs far above this sometimes; but if it rise much above 100° we look out for a febrile or inflammatory cause, or for general paralysis, or other organic disease. The skin is usually clammy and ill-smelling, though sometimes harsh and dry. In women the menstrual function is almost always interfered with, being usually stopped after the excitement has continued for a few weeks. The odour from a woman both menstruating and maniacal is most offensive. I find that out of the last fifty women admitted to the Asylum labouring under acute mania, three-fourths had irregular menstruation, and in most it ceased till they became convalescent or demented. The common sensibility is much diminished in such cases, patients not feeling pain acutely, some not feeling it at all. Injuries, cuts, boils, whitlows, and such painful affections are borne without much complaint of pain. With their feet inflamed they will walk, with their hands bruised and sore they will use them freely.

The continuance of this condition is, of course, attended with rapid and great loss of body weight. I have known a patient lose a stone of flesh in a week, notwithstanding that he was getting plenty of food. But after losing any redundancy of fat it commonly happens that the intensity of the disease diminishes and the loss of weight is less rapid. It usually takes a considerable time, always provided a sufficient quantity of proper food is given, and proper treatment adopted, before extreme emaciation and weakness result. The more intense the attack the shorter is usually its duration; in fact, a great prolongation of very acute delirious mania, with a temperature of over 100°, no sleep, and constant violent motor excitement, is dangerous to life. Few cases die in the first week of the attack; some do in the

first fortnight, and some in the first month. In a subacute form it is wonderful how long it may last, without producing fatal results, or even reducing the patient very much, if he eats enough—and enough may mean four times his usual amount of food—and is sufficiently in the fresh air, and is not restrained in his movements.

Restraint v. *Non-Restraint.*—In by far the majority of instances such mechanical restraint as used to be employed in this country, and is still employed in many places elsewhere, —by strait-jackets, camisoles, gloves, straps, &c.,—cause such a feeling of degradation, irritation, and resistiveness, that the good effects of any actual conservation of force by such restraint is in my opinion far more than counterbalanced. The disease, if it does not kill, is more apt under such treatment to run on into chronic mania and dementia. To restrain the mere outward muscular movements, while the motor energy is all the while being generated in the brain convolutions, is eminently unphysiological. Almost as well restrain the movements of the choreic or the convulsions of the tetanic patient by binding them tightly and expect a good result. Our great efforts in the treatment of such cases now is to find suitable outlets for the morbid motor energy, to turn the restless, purposeless movements into natural channels, to get the patients to dig and wheel barrows, and to walk long distances, instead of shouting and gesticulating. We find that this saps and exhausts the morbid energy and excitement, producing healthy exhaustion and sound sleep, vigorous digestion, and due excitation of the skin, the glands, and the excretory apparatus generally. This is the chief physiology and philosophy of the modern British "non-restraint" treatment of mental diseases. No doubt there are exceptions to all rules. I have seen cases where restraint had to be applied to prevent the patient exhausting or hurting himself, and I have had two or three patients die suddenly from exhaustion, one of them "dropping down" after long walking, but they are amazingly few in a well-equipped

asylum, with large grounds, a farm, good attendants, and plenty of them, and a padded room. Under those circumstances not one case in a thousand is found to need restraint. But it is quite different when we have to treat a patient in a private house, or with insufficient attendance. Then mechanical restraint may be unavoidable. It often happens that, at the commencement of a case, where the symptoms have developed rapidly into an acute form, you may think it advisable to give the patient a chance of its soon passing off, or arrangements cannot be at once made for removal to an asylum through the absence of those who can authorise it, or the relations of the patient may absolutely insist on his being treated out of an asylum. In these circumstances you have to do the best you can with the means at your disposal, carrying out to as great an extent as you can the principle of providing an outlet in the open air for the morbid motor energy that is being generated in the brain convolutions, but using, it may be, restraint to some extent.

Stages.—Acute mania is in some cases divided into three stages: the first that which I have described as simple mania, the second that of ordinary acute mania, and the third that of delirious mania, with a tendency to dry tongue, &c. But a case may be one of acute delirious mania from the beginning. The aggravated and fatal cases of this form were described by Dr Luther Bell as typho-mania. We seldom see such cases here.

Pathological Risks.—As you can readily understand, from the delicate constitution of the grey brain substance—that highest evolution in nature of function and structure—and the infinite complexity of its balanced and interdependent functions, the continuance of such an abnormal brain-storm as that which exists in acute mania may be followed by permanent and irretrievable damage. Such a storm, besides all the bodily symptoms and disturbances which I have described, is accompanied by intense congestion and over-action in the grey neurine and brain generally, the

congestion being usually seen in limited areas (see Plate IV.), those probably tending soon to pass into structural changes. The cells tend to get granular, chromatolysis takes place in them (see Plates XVI. and XVII.), and varicose hypertrophy and atrophy of the dendrites of the neuron with disappearance of the gemmulæ (see Plates XVIII. and XIX.). There is a proliferation and enlargement of the nuclei of the neuroglia, the lymphatic spaces and perivascular canals get over-dilated and blocked up with debris, and an enormous number of microscopic capillary extravasations may take place in and around the convolutions in bad cases. Some writers speak as if the cortical hyperæmia constituted the disease, and that treatment should be chiefly directed towards diminishing the blood in the capillary vessels, Krafft-Ebing recommending leeches to the head. What we want is to alter the mode of energising of the cells, so that, instead of being explosive and morbid, it may become normal. The capillary congestion is a secondary matter, and will soon come right in most cases when the cells cease to make extraordinary calls for an undue amount of blood. The vessels may get thickened in their coats and tortuous, the fibrous matter of the pia mater becomes hypertrophied, the arachnoid milky, the dura mater thickened or adherent to the bone, and the bony case dense and thickened. All those things may happen through prolongation of the acute symptoms. Therefore it is of the last importance to shorten, if we can, the acute stage. Every week of this adds to the chances of the acutely excited state being followed by more or less permanent mental defect. Even the present risk to life is not so grave a risk as that; for which of us, if we had the choice, would not prefer death to a degradation from our mental eminence in creation to a state of permanent mindlessness, in which we would be dead to the love and hatred and to the joys of life, oblivious of the past and unconcerned for the future, stirred by no ambition, capable of no effort, and unmoved by any motive? For such is the dementia, of which I am to speak after-

wards, that sometimes follows and results from mania. My experience has been that 60 per cent. of the cases of acute mania recover, 7½ per cent. die, and 32½ per cent. become demented or pass into chronic mania. There is, perhaps, more opportunity for right treatment and management in acute mania than in any other kind of mental disease.

General Indications for the Treatment of Acute Mania.—In the beginning of the attack, and sometimes, when the patient is wealthy, all through it, we have to treat the case at home. Now, no doubt, the first thing to be done is to get proper trained attendants—one, two, three, or even four, may be necessary for night and day work. Patient, sensible, experienced, cool, and kindly men and women are what we want. Then proper arrangements must be made, —a good suite of two large rooms on the ground floor of a house, with a garden, and not too near a public road, being required. Small breakable articles must be removed, but do not make the rooms quite desolate or unattractive-looking. Fasten windows not to open more than five or six inches, and see that no knives or lethal weapons are too handy. But do not do all this demonstratively to attract the patient's attention. Next, you must look to the feeding with suitable nutriment very often; sometimes you can give it only little and often, sometimes in ordinary meals, with beef-tea and milk in between. Milk, eggs, beef-tea, ground beef, custards, strong soups with plenty of vegetables, and porridge, are the best, as often as the patient can be got to take them, and in as large quantity. As Dr Blandford says, "We can hardly give too much." Do not for a moment be afraid of a dirty tongue, and think it contra-indicates food. Nothing could be a greater mistake, in acute mania at all events. The furred tongue is not from an overloaded alimentary canal, but results from perverted innervation of the digestive tract. Malt liquors, such as porter and ale, can be given freely with advantage. Good

wines, too, if they can be got. Even whisky or brandy will act as a direct sedative to the excitement in some cases. Anstie taught us some good therapeutics, in his *Stimulants and Narcotics*, on this point. But alcohol, you will find, will sometimes flush and cause excitement. In that case use it sparingly. I have seen a pint of beef-tea, representing all that was soluble in a pound of beef-steak, and a glass of whisky, reduce the temperature 2·3°. To show the quantity of food that such patients can take and digest, I mention that at the Asylum I am never satisfied except the bad cases get at least six eggs a day beaten up in liquid custards, in addition to their ordinary food and beef-tea, up to convalescence. I have known many patients take a dozen eggs a day for three months running. The constant motion and fresh air enable them to digest and assimilate most of this. So long as a patient is losing weight, the physician should never be satisfied. When he becomes stationary, then one may begin to think that the disease is being overcome by nature and treatment. When he begins to gain in weight, and the temperature becomes normal, then convalescence or dementia has begun. The patient should be weighed every week during the acute stage.

Next to good food and nursing, fresh air is most essential to treating a case. No patient must, on any account, or in any weather, except he is excessively run down or exhausted indeed, be kept in bed or in the house for many days. Herein is the essential difference between the treatment of this disease and that of acute bodily complaints. I often keep patients out all day in the summer time. When they are recovering they all say that they feel better out than in. There is no soporific, no calmative, and no digestive like the fresh air. And the attendants must not restrain or interfere more than is necessary. There should be no nagging and small interferences, and little arguing, but a kindly, firm mode of dealing with a patient—coaxing, when coaxing will do, and firm insistence, and force sufficient to overcome

resistance when necessary. There is a certain kind of tact which some people have, and which may be partly acquired, but which is mostly a natural gift, and, when present, is of the greatest avail in overcoming resistance, persuading patients to take food, &c. Women have it more frequently than men, and women will often persuade male patients when their own sex fails. It does not do to let patients have too much of their own way. A happy mean between that and too much interference should be pursued. It is better to be honest, and not deceive patients into doing things. That often makes them lose confidence, and does harm afterwards. Medicine when given should, as a general rule, be given as medicine, and not put in food surreptitiously. The safety of the patient and those about him must of course be provided for.

For the bowels it is sometimes necessary at first to use laxatives and enemata, and even strong purgatives, such as croton oil, but I try first such mild medicines as castor oil, Tamar Indien lozenge, liquorice powder, warm water enemata, &c. Do not insist on a stool every day; one every second or third day is quite enough. Depleting remedies of all sorts are in my opinion bad.

Baths.—There is one remedy that I have seen do good in many cases, and in a few act like a charm, and that is prolonged warm baths with cold to the head. The effect of this is to fill the capillaries all through the body, and to withdraw blood from the brain, to depress the heart's action—and hence its danger—to soothe the nervous irritation, and to produce sleep. I have the highest opinion of its efficacy, but unfortunately it is attended with danger in some cases. A man, whom I could not detect to have heart disease, once died in my hands, as it were, when I was sitting beside him, after being less than an hour in water at 103°. I know of two other cases where syncope and death resulted in the same way. I used to keep the water up to 110°, but I never do so now. In fact, I now prefer 99° as the proper temperature. But the effect with this is not so quick nor so marked.

Baillarger used to keep his patients steeping for days in water at 96° or 98°. I do not think, however, the treatment is so much in vogue now in Paris as it was twenty years ago. Dr Rees Philipps has taken to the use of the very prolonged tepid bath at the Sanatorium, Virginia Water, and speaks enthusiastically as to the good results. Shower baths of a mild kind are sometimes useful when the mania threatens to become chronic, or when the earlier symptoms of dementia show themselves, and the patient is strong and can react after the bath. The great trouble is that patients are apt to look on the shower bath in any form as a punishment, and so its use may have a bad moral effect on them.

Sedatives and Hypnotics in Mania.—One difficulty in treatment is to use narcotics and hypnotics rightly. The greatest differences of opinion have existed, and do prevail at present, about them. What we want and have not yet got is a medicine that will cause really natural, restful, refreshing sleep, and one that will stay or slacken the morbid energising of the brain cells in the convolutions without affecting the appetite or the nutrition. That, however, is not known to us in a perfect form. All medicines that markedly lessen the appetite or impair the digestion or nutrition I condemn in this disease. In ninety-nine cases out of a hundred opium does this, more or less, and should not be employed except as a mere temporary placebo or for a special purpose. My experiments with it, and practical experience of it is, that it has those objectionable effects in most cases where given. Chloral we all believed in and used very extensively in mania after its discovery. It seemed a perfect sleep-producer. Numbers of cases have I kept under its influence day and night for weeks, and many of them certainly got well. But I do not believe so much in it now. Its sleep is sound and seems natural, but somehow is not refreshing like nature's sleep. I am inclined to think that an hour or two's sleep naturally after a day's exercise in the open air is more than equal to eight hours' drug sleep. My experience is that it

has a subtle influence for harm on the brain when long given, by which the organ loses that quality which we call tone. The patients cannot bear pain so well. They have not the resistive power, and they are apt to look pale and unrefreshed in the morning. Besides this, I had two patients who died suddenly, each of them during a sudden gust of excitement, when under the influence of moderate doses of 30 grains; in both of them I found the blood dark and fluid, and the right side of the heart and the lungs engorged, as if there had been a sudden paralysis of the breathing centre in the pons. I could not certainly say that the chloral caused their deaths. One had decided brain disease, and sudden deaths do occur in acute mania when no medicine has been given, through, as I believe, epileptiform conditions causing paralysis of the breathing centre. I have never given chloral as a sedative during the day since. Now I give it at night, or after or during convulsions, and always in small doses of from 10 to 25 grains, with from half a drachm to a drachm of bromide of potassium. I much prefer paraldehyde as a pure hypnotic, in doses of from 40 minims up to four drachms or even more. It may be combined with the bromides. It is an almost certain producer of sleep, it does not weaken the heart's action, it leaves few after-effects, and it is in my experience quite safe. Sulphonal I look on as being on the whole the most valuable medicine of the kind lately discovered. It soothes, it causes sleep, its effects will often last for forty-eight hours, and in some few cases it makes directly for restoration and sanity. I give it in doses of from 10 to 40 grains. I have now had so many cases where the direct arrestment of the maniacal symptoms by this drug was followed by immediate recovery, without any tendency to recurrence, that I am satisfied of its directly curative influence. If its use is prolonged, the dangerous condition of hæmatoporphyrinuria must be looked for in rare cases. Urethane is in my experience a weak and uncertain hypnotic, except in very mild cases indeed. A combination

that I have found most useful has been the bromide of potassium and tincture of cannabis indica, with which I have made careful and prolonged experiments. It soothes during the day and sometimes permanently allays the brain excitation, and it causes sleep at night, without diminishing the appetite much or impairing the digestion, though it depresses the vascular action. I have used the bromide alone in acute mania extensively and experimentally. In small doses it seems to have no effect. In very large and continuous doses, say a drachm every three hours continued for many days, it will cause bromism, and quiet the patient, but when its influence is over he becomes as bad as ever. Hyoscine, in doses of from $\frac{1}{200}$ to $\frac{1}{75}$ grains, is an admirable quieter of motor restlessness, and often does good. Its great merit is that it can be given hypodermically. I have seen nitrite of amyl —a drop inhaled—produce calm in a suddenly epileptiform case of mania. Morphia may be subcutaneously injected if refused by the mouth, but I advise you to beware, and not use too large doses in this way. It may be justifiable in treating cases at home to tide over severe paroxysms with those drugs, and sometimes in that way to keep the patient out of an asylum as long as possible. When a maniacal patient is sent to the Asylum, I now frequently use for a few nights small doses of the bromides, sulphonal or paraldehyde, and give warm baths; but after a fortnight, when I see that the attack is not going to be cut short or run a very short course, I am more apt to trust to the nursing, diet, and conditioning of life I have mentioned, with continuous tonics. Conium is a good sedative in some cases, and tincture of lupuline, in the milder cases, I have known to produce sleep. Camphor in some women does much good.

Tonics.—I now give nearly all my cases quinine from the beginning, adding iron in some cases that are manifestly anæmic, with sometimes the phosphates of lime and soda. The bitter tonic and digestive medicines with nitro-muriatic acid I use largely in cases that run on for long, and during

convalescence. Strychnine is most useful at the later stages of the disease where there is a tendency to stupor and brain torpor, but is too stimulating at first.

After-Symptoms.— When the acute symptoms pass off, especially if they have lasted long, there is apt to be a stage of reaction, attended, in some cases, with complete prostration, in others with depression, in others with an apparent mental enfeeblement which very closely resembles dementia; in fact, it is a stupor of a transitory kind. You must on no account confuse it with the real dementia, for while the one is quite amenable to treatment, and requires treatment urgently, the other is an incurable brain condition. I once showed a girl, who had just passed through a prolonged attack of acute mania, and who was stupid, dirty in habits, and seemed demented, as a typical example of newly-begun dementia, in a clinical lecture, and pronounced her a hopelessly incurable case; but she gradually picked up in flesh, got enormously fat, her brain roused itself into almost its former activity, she was discharged recovered, and remained well for nine years. The treatment for this stage of acute mania is tonic and nerve stimulant, stimulating medically and fattening dietetically—use beef and animal food at this stage as much as possible. Rousing and occupation, and "cheering up" by amusements, &c., are most useful, too, as brain stimulants and restorers. Sometimes patients have to leave the asylum to get cured of this result of mania. Their brains need to be subjected to the natural stimuli and interests of outside natural life. There is a process of re-education of their damaged but recuperable brains that must be gone through. They are in the state of a joint damaged by an acute rheumatic inflammation, that may take a long time and much exercise and friction to get it working as it once did. Unfortunately certain mental peculiarities remain permanently in many cases.

The following was a *typical case of acute mania, running through its three stages both in its onset and as it passed away.*

The intensity of the brain storm was so great at its acme as almost to kill the patient :—

C. L., æt. 36. Married. Temperament sanguine. Diathesis nervous. Disposition cheerful, frank, and exceedingly enthusiastic when he took anything up. Habits very steady, and almost over-industrious, for after his work was done he would spend all his evenings in doing church work. Education fair. Father died at 70 of paralysis; brother had an attack of acute mania at 27 from over brain-work, from which he recovered, and then again had another attack and died in it. Mother had an attack of puerperal mania after the birth of one of her children, and her maternal grandfather and aunt were insane. This is the first attack, and has assumed an acute form for three days. He became depressed, reserved, and altered three or four weeks ago, and this was accompanied by thinness and sleeplessness. Then he began to be excited, elevated, talkative, and restless, and quickly passed into wild delirious excitement, which had existed for two days before admission. He was very dangerous to his wife and children. He had taken little food for two days, and never slept during that time, though he seems to have had enormous doses of morphia. On admission he was very exalted, singing hymns, quoting passages of Scripture and swearing in the same breath; shouting and raving. His excitement was intense.

He threw himself about the padded room into which we had to put him. It took four or five strong men to manage him safely, though he was a small man. He had hallucinations of sight and hearing. He was thin and sallow. He was covered with bruises, and one rib was broken, all got in his struggles at home. His tongue was clean and dry, bowels costive, appetite gone. Pulse difficult to count, on account of his excitement. Temperature 99° on admission, and 100·6° at night. He felt no pain. He would put his feet up on the walls, with his head down, and run so round the room. He would leap up and then fall down. He would seize those near to him, and try to throttle them, thinking

they were devils. He tore his blankets and bedding. At times he would be quiet, and in a way rational, then he would get maniacal in a moment without warning and without outward cause. He was fed regularly with custards and sherry by force, as he had a great aversion to food, saying it was poison. Patients who are maniacal often have this delusion, the idea being suggested to them by their own perversion of the sense of taste. To such I have no doubt that all food tastes ill. This brain condition exhausted him very much, so that I feared he was going to die. He got twelve eggs a day and much milk. We could only get him into the fresh air for a short time each day, his struggles and the risk of injuring himself being so great. He almost never slept. After three weeks he began to improve, and he had lucid intervals, during which he was quiet. He had several boils on his arms and legs at the time, and I looked on this as a critical event. His temperature never rose so high after this, his appetite returned, and we were able to give him solid food in a mixed form for the first time. He was able to walk round the grounds in four weeks, being then talkative, lively, chaffing everybody he met, full of fleeting delusions, especially as to the identity of those near him. He took most violent antipathies to his attendants, and would accuse them of quite impossible cruelties to him, such as putting him into a mill and breaking every bone in his body, so that we had to be constantly changing them to soothe him. He was weak, pale, thin, and haggard, but said he felt strong when he began to go out to walk. After that he was never in the house except at night. He walked, and when tired he sat or lay down on seats in the grounds. He continued excited, noisy, singing, and very exalted in feeling during the second month of his stay, still taking his twelve eggs a day, in addition to his ordinary diet and other extras, and he gained a stone the second month of his residence. He had several short relapses for a few days. In two and a half months he began to have a glimmering consciousness of his

position, and a faint return of natural feeling. His first letter to his wife at that time was a model of conciseness:—"Dear Wife, Where are you? C.L." In three months he was in the condition I have described as typical in simple mania — gay, humorous, careless, talkative, but with no delusions, sleeping well, and rapidly gaining in weight and strength. He was during this time getting all sorts of tonics—quinine, iron, phosphates, cod-liver oil, &c. This state lasted other three months, all this time his brain getting more normal in its working, and at the end of six months from his admission he was discharged well in mind and stouter than he had ever been in his life, having gained two stone in weight since admission, and he has kept well and done his work ever since. I seldom believe in the perfection of a recovery from acute mania unless the patient is fat; and when he is so I always think his chances of not having a relapse for some time are good. I like a gradual steady recovery, too, not perhaps so long as this, rather better on the whole than a sudden recovery.

The following is another characteristic case of acute mania running through a typical course:—

C. L. A., æt. 47, of a sanguine temperament, cheerful and frank disposition, and industrious and temperate habits, but of a very fiery and ungovernable temper. This was her first attack. Her mother was insane. This heredity and the nearness of the climacteric period may be considered as the predisposing causes, while the exciting cause was exhaustion from want of sleep and mental anxiety in nursing her mother on her death-bed. The first mental symptoms occurred about fourteen days before admission, in the shape of restlessness, unsettledness, and getting up in the middle of the night to wash. For four days she had been worse, seeing visions, constantly talking, imagining that people were under her bed, and never sleeping. On admission there was great exaltation, incessant and almost incoherent talking, much excitement, walking about, gesticulation, singing, saying she saw the

"heads of people" about her. She addressed the people about her, whom she had never seen before, as her friends, mistaking their identity, making sarcastical remarks about them—"Oh! Kitty, is that you? That's a fine gown you have on. Who gave you it? Is it paid for?" &c., &c. At times she was quite incoherent. In person she was fat, weighing 11 stone 6 lbs. Her organs were healthy, except that her tongue was much furred, and her bowels were costive. Pulse, 112; temperature, 99·6°. Soon after admission she suddenly, in obedience to a delusion, took up a chair and threw it at one attendant, while she seized another by the hair and hurt her considerably, screaming out and saying they were going to murder her, and that there were devils in the room. She refused to take food at first, saying it was poisoned. She had to be secluded in a bedroom, where she would sometimes shout and gesticulate and make speeches, and carry on conversations with imaginary persons; then she would lie flat on her back on the floor, keeping her eyes tightly shut, smiling, and never speaking at all or answering questions, evidently living in her morbid imaginations, and trying to exclude external sensations — a very common example of exalted "subject-consciousness" and depressed "object-consciousness" in acute mania. She did not sleep, and was noisy all night till the third night, when she slept two hours. On the first day she was so violent, and so strong, and so resistive, that it was thought desirable not to dress her or send her out. She was got into a warm bath with great difficulty. Her temperature rose to 100°. It was the fourth day before she began to take more food than a little milk, or before we could get her dressed and out in the open air much. Her bowels had been costive till then, as she could not be got to take any medicine. She then had croton oil given her and an enema, and had a free evacuation of most offensive fæces. Her breath had been very foul. On the sixth day, though she was drinking a good deal of milk and custards, her tongue and mouth got dry and cracked, her

pulse weak, and she showed signs of exhaustion. She was put on four glasses of wine, and still kept out in the fresh air, while a little milk was given her every half hour. She was very excited, noisy, destructive, and absolutely delirious and incoherent. She had passed into the "delirious mania," which some authors set up as a special variety. On the tenth day the excitement began to abate, her tongue and mouth became moist; she became more manageable, and got a good night's sleep for the first time. In a month from the time of her admission she had lost twenty-four pounds in weight, but then the acuteness of the brain exaltation passed off. She had "a good day and a bad one," could sit down to meals, and eat her food. She could walk about, looking moderately sane to anyone at a little distance. She could answer simple questions correctly. She began to have doubts as to a delusion about my being her husband, saying, in answer to my question as to who I was—"You're John ———, at least you look like him; but I'm thinkin' you're no him." She made a perfect recovery in four months.

The following is a case of acute mania coming on in an hour with great intensity, and gradual but not complete recovery in three months. Relapse after three and a half years, attack of ten months' duration, complete recovery.

C. M., æt. 17. Diathesis nervous. Disposition excitable and sensitive. Comes of a nervous stock and a maternal cousin is insane. He had been in low spirits, and rather more sensitive and shrinking than usual. There was no proof of masturbation, though I supposed that his thoughts had been erotic from various small indications. Being very strictly brought up, all the outward influences had been in favour of severe repression of the *nisus generativus*. The exciting cause was said to have been a fright, but I scarcely think there was sufficient proof of this. One day he suddenly began to roar and shout, and say he was first Christ and then the devil, and to be very violent to those about him. He got so ill and so unmanageable that he had to be removed to the Asylum the

same night his attack began, which in most cases would be considered a premature measure, considering the possibility of *mania transitoria*, the public feeling existing about hospitals for the insane, and the harm a residence in one may do to a man's prospects, however much it may be true that the best treatment for the patient can be got there. His delusions were transient, most of them being of a religious nature. His condition was that of typically acute delirious mania when let alone, but when his attention was roused by questioning he could answer some simple questions coherently though not correctly, his memory being much impaired. He was slightly built, not so fat as he should have been; his pulse very weak, 116, and his temperature 99·6°, and 100° in the evening. He had a warm bath at 98°, with cold cloths to his head for fifteen minutes, and a draught of 10 grains of chloral and 45 grains of bromide of potassium, with 2 drachms of tincture of valerian. He scarcely slept at all, and next day his condition was still very excited and violent, but he was kept walking about by two attendants for five hours, though very intractable, throwing himself about, &c. Next night he got a bath for twenty minutes, and the same draught, and slept six hours. Next day his temperature was normal. He was less excited, and walked better. The same treatment was continued, in three days he was still better, and in eight days he was playing cricket. He had a relapse on the tenth day, though he did not get nearly so excited as at first. He had two or three milder relapses within the next two months, but at the end of that time he was practically well, and in three months he was discharged recovered. His treatment consisted of an indefinite allowance of milk and eggs, almost no animal food, fresh air, exercise to fatigue all day, baths, warm at first, and mild shower baths as he recovered, and cod-liver oil emulsion, with the hypophosphite of lime. He gained almost a stone in weight, but did not grow any more manly in his form, nor did his beard grow.

He kept well enough not to be sent to the Asylum for three

and a half years, but during that time he constantly had threatenings of his complaint, and was at times unable to follow any continuous occupation. After that time he had another attack of a much more mild kind of acute mania. He was delirious, not violent, early ceasing to take any interest in anything, seeming to live in a morbid subjective mental atmosphere of disordered imagination; talking to himself incessantly, not sleeping well, was constantly grimacing, gesticulating and fighting imaginary persons in the room round the wall. When he was spoken to he would pick himself up and answer pretty rationally. This is a condition that puzzles many persons. It looks like dementia, while in reality it is a subacute form of mania, which makes all the difference in the prognosis and sometimes in the treatment. He was tried at home, in charge of an attendant to control him, to get him to walk out, &c., but he rather rebelled. Patients are, of course, never so easily controlled at home as away from it; especially it is hard for the master or mistress of a household to be controlled in their own house, where before every one was under them. In an institution, on the contrary, among strangers, under certain definite rules of living, and where there is obviously the means of enforcing medical orders, a patient must be very insane not to conform to the orders given as to his treatment, and to the general way of living of the place. This is very often seen when patients come to asylums. At home they had been difficult to manage, or very obstinate, while from the moment they came into the institution they gave little trouble.

He had again to be sent to the Asylum, and he was found to have lost in weight, and to be ill-nourished and wanting in nervous tone and nutritive energy. His muscles were flabby and his skin pale, and his appetite for food not keen. He was put on quinine and iron, cod-liver oil, milk, and eggs in large quantities; his skin was well rubbed night and morning with a dry towel; he got mild shower baths, and took much and increasingly vigorous exercise. He gradually gained in

weight, in nervous tone, in self-control, in power of applying himself to work, in his interest and power of attention; he got more manly in form, and filled out into a strong vigorous-looking young man. It took him ten months to recover. This was a case in which I was very much afraid of dementia. I think this would have resulted had not right treatment been vigorously adopted. In such a case the brain is in much the same state as in certain forms of dementia, *plus* a little maniacal excitement — but that makes all the difference. Almost never pronounce a case incurable while there is exaltation remaining.

A very Acute Case with High Temperature. — I had once under my care C. N., a young lady of twenty-three, of a nervous diathesis, and with a strong heredity to insanity, who, bathing while menstruating, became slightly depressed, then had an attack of slight exaltation every month, followed by a day or two of modified stupor, at the time she should have menstruated but did not. After a few months menstruation returned, but came on every fortnight, this reducing her strength, and causing anæmia. At the usual time of menstruation on one occasion a most violent attack of acute mania came on, with incoherent delirium and such excessive violence that she nearly killed a relation. Two trained female attendants could not control her at home. Her temperature was 103°, one of the highest I ever saw from uncomplicated brain exaltation not puerperal, and she had to be taken to the Asylum within twenty-four hours after the commencement of the attack. For the first fortnight she remained in the most acute state of excitement I think I ever saw. It took five attendants to restrain her, dress, undress, and have her walked out, which we did every day. When she would not walk she was allowed to roll on the ground. She soon became less excited, but at the next menstrual time she had a relapse, and was as ill as on admission. Though apparently absolutely delirious and without power of attention when excited, yet, when the attack passed off, she could describe what had

occurred very accurately for the most part, though distorted in some respects. She had no realisation that she had been so ill, and therefore thought she was unnecessarily detained in the Asylum, and that the attendants' restraint of her violence had been simple cruelty on their part. This is a psychological fact with which we are very familiar in asylums, which was most marked in her case, though it occurs more or less in most cases of mania and melancholia. As the patients first become coherent and sensible they are much more unreasonable about "going home at once," and about getting all they fancy, and about being controlled, and about all sorts of things, than when they get quite well. They usually attribute any nervous symptoms they have to their being "kept in the asylum," and aver with daily iteration that, if kept much longer "in a mad-house" or "among maniacs," they will certainly become insane. The stage of convalescence is the stage of irritability and unreason in many cases. Their friends do not understand that this is the ordinary half-way house to complete recovery, and sometimes remove them home, often with very bad results. When they have quite recovered, such patients are commonly reasonable about going home, and often recognise how necessary restraint has been. Some patients never do this, however. C. N. had relapses of a less severe character about the menstrual periods, getting more and more reasonable during the intervals. In six months she was so well that she was taken home, not exactly against my advice, but not quite with my concurrence, as she had not menstruated, and was excitable.

Tests of Recovery.—The question of when recovery has taken place is often a difficult one to decide in mental diseases. You have to take the temperament, disposition, and normal state of mind and conduct into account. The same standard cannot be applied to persons of different education, temperament, or nationality. I lately had a young lady patient who was so excitable and lively, so reckless in speech and conduct, after all the acute symptoms had passed off, that I had to send for her relations to tell me whether she had returned to

her normal state or not, and I found she had done so and was well. She soon got married and had children, and settled down into a staid and sensible matron and mother, her surplus stock of nervous energy finding its natural outlet, and her organic cravings their physiological satisfaction—but alas! for the world's stock of future sanity in such cases.

Menstruation.—The relation of menstruation to mental disease is a very important one, of which I shall treat more fully under uterine insanity; but I may say now generally that in most cases of acute mania cessation is the consequence and one symptom of the morbid brain excitation, and not its cause, and the restoration of the function is the result of improved brain and bodily health and condition. I seldom adopt special means for its restoration until the patients are strong and have become fat, but at the same time I regard mental recovery in a woman as being likely to be much more stable and less liable to relapse after the menstrual function has become normal. I always like to see it normal before I recommend the patient's removal from the Asylum.

The treatment in C. N.'s case was exactly the same as that of C. M. Unfortunately, she was threatened with a relapse after going home, but it was summer, and I sent her to vegetate and live in the fresh air at the sea-side, where her recovery was completed. She then went to work, and worked too hard, and has since had several attacks of the same kind, but of shorter duration and slighter character, in the ten years that have elapsed since her first recovery.

Both of these last two cases (C. M. and C. N.), though cases of acute mania in the classification founded on mental symptoms, are cases of the insanity of adolescence when looked at from the clinical point of view.

Though recovery from acute mania is usually a gradual process, yet at times it is sudden. Why this should be in certain patients I am quite unable to tell, nor have we any means of predicting beforehand in any case that it will terminate in recovery in that sudden way. *This is an*

example of acute mania which was cured suddenly by a local inflammation.

C. O., æt. 44, a married woman, with several children. No hereditary predisposition, the sole cause being over-work in her household and over-anxiety about her family. She was of an "anxious disposition" and a nervous diathesis. She became irritable, quarrelsome, restless, sleepless, excited, and totally changed from her natural ways about a week before her admission, and this condition has quickly passed into one of acute maniacal exaltation, noisiness, singing, fleeting delusions, violence, and excitement, with no memory, no self-control, and no affection for her children, of whom she had been passionately fond. Sometimes she would be taciturn and obstinate for an hour or two, would not open her eyes, answer questions, eat, or walk about. She had not slept for several nights before admission, and had refused food. When brought to the Asylum she was acutely excited, noisy, shouting, singing, gesticulating, struggling, resisting, violent, making faces and facial contortions, putting her tongue out, but would not answer questions or attend to anything said to her. The common sensibility seemed quite blunted, so that she felt no pain. Her skin was dry, tongue furred and dry, appetite gone. Pulse 126, small and weak. Temperature, 101·2°. For the first four days she remained in this state, taking scarcely enough food, and that with extreme difficulty, and spending her time partly out of doors, under the care of two attendants, and partly in the padded room when in the house. On the fifth day, having refused food altogether, she was fed with the stomach-pump. This was done with extreme difficulty on account of her holding her teeth together most closely. The steel mouth-opener, though padded with tape, she crushed through a tooth by the force with which she bit it. This caused a good deal of inflammation in the gums and jaw, spreading back to the parotid gland, which became enormously swollen and suppurated. But as the inflammation spread the maniacal condition subsided, so that on the tenth

day, when the temperature was 106° and the patient very weak and exhausted indeed, the restlessness and excitement had quite ceased, and she took both food and stimulants. She was confused in mind, but not otherwise maniacal; and, though she nearly died from the combined general exhaustion and local inflammation, she never became maniacal again, steadily progressed towards recovery, mental and bodily, and was well in a month.

Parotitis.—The inflammation of the parotid gland which occurred in the case I have met with in various forms of mental disease—acute mania, melancholia, puerperal insanity, &c. In two cases it caused death from suppuration and septicæmia. The cause of it varies in different cases. It cannot be often caused, as is alleged by one author, through attendants holding the head during feeding.

Septic Fever cutting short Attacks.—That is one example of very many cases I have met with, where a local inflammation, a fever, an internal disease, a carbuncle, a crop of boils, or septic blood-poisoning, have cured insanity. We try to do the same thing sometimes in cases that are strong in body by severe blistering, but seldom succeed in producing the same marked and immediate effect. I have always believed that some day we should hit on a mode of producing a local inflammation or manageable septic blood-poisoning, by which we should cut short and cure attacks of acute mania. Dr Lewis C. Bruce has, by means of his heroic doses of thyroid extract (see p. 134), largely succeeded in this mode of terminating many attacks of mania. I have been much impressed by some of his cases. But such intercurrent diseases do not always cure mental attacks. I have often seen them occur in cases of acute mania and do no good. I suppose, in fact, the failures may be more numerous than the successes, but the latter naturally make more impression on one's mind and loom larger in one's conscious field of experience. *The following was a very striking case of cure, sudden and unexpected, after hope had been nearly given up, through septic fever:—*

C. P., æt. 26, a married woman, who had for nine months suffered from acute mania connected with lactation. The symptoms had come to have some of the mental enfeeblement of dementia about them, but still there was the maniacal excitement, the presence of which prevented, in my mind, an absolutely unfavourable prognosis. She had been discharged from another asylum as virtually incurable. She had several cuts on her hand on admission, caused by her having broken a window. Fortunately for her one of them got some dirt into it, and the hand inflamed badly, with a nasty septic-looking inflammation that ran up the lymphatics, and was attended by intense pain and great general disturbance and prostration. It suppurated, and discharged a dirty sanious pus. But the effect on the brain condition was magical. This nine months' maniacal, destructive, dirty, violent woman, caring nothing for her husband or children or the common decencies of life, became quite gentle and manageable as the septic fever and the local inflammation progressed. At first confused in mind, then awakening to all the former associations of her life, she inquired for her children, and became in a fortnight a sane, pleasant, lady-like woman, with all the charms and graces of womanhood. Such cases puzzle one exceedingly. That period of nine months, during which the neurine of the brain convolutions had been energising morbidly, so that every mind function — intellectual, affective, instinctive, and mnemonic — was utterly disordered, clearly left no trace of structural change. Unfortunately I have to give the sequel, which is not so pleasant. She kept quite well for three years, had a child, and, while nursing it (neither of which she ever ought to have done), another child died, causing her great grief. She again became maniacal. I blistered her head repeatedly and severely, and rubbed in irritants with marked benefit, but not with such absolute and striking effect as on the first occasion, because probably I could not set up a really septic fever. I put her on bromide of potassium and cannabis indica with very marked benefit. She got better in four months,

and went home quite well in all respects. In a year she became maniacal again, and this time no treatment has been of any avail. She remains ill and is now incurable.

Hot Baths.—The good effect of treatment of acute mania by hot baths was well seen in the following case of C. P. A., a young man who, as the result of over-work and too little fresh air and relaxation, became morbidly exalted in mind, restless, sleepless, talkative, and changed in general mental demeanour. While in this state he was more active mentally than he had ever been in his life. He wrote an article for the most brilliant weekly journal of the time, which was accepted and inserted—the only such article he ever wrote in his life. His condition soon passed into violent excitement, constant extravagant talking, and fleeting delusions of ambition and extravagance. His conduct became violent, destructive, and unmanageable, and he was in that condition when I saw him. I got a first-rate, strong, trained attendant, and we gave him two baths of about 104°, with cold to his head. The immediate effect of this was lowering, and he nearly fainted before he was taken out of the second, but his excitement and talkativeness and his delusions were calmed and diminished. He got drachm doses of the bromide of potassium repeated three times during the night, and for the first time for about ten days he had a good sleep. By the way, I should have mentioned that between the baths he was taken out into the open air and walked about for several hours till he was pretty nearly exhausted. Next morning all the most violent and unmanageable of the symptoms were found to have passed off, and under the treatment of baths and bromide, with plenty of exercise and unlimited milk and liquid nourishment, he made a speedy and perfect recovery in about a week or ten days, without relapse and without complication. In a fortnight he was able to go away for a change, and for ten years was as vigorous, mentally and bodily, with two short and slight exceptions, as he ever was, conducting a large business.

Death from Exhaustion.—Acute mania sometimes exhausts the strength of the patient, and kills in spite of treatment, as in the following case of C. Q., æt. 34, suffering from the third attack of mental disease, the two former having been attacks of melancholia. She had a sister insane, and a brother an imbecile. She had been ill for about a month, being much excited, and refusing food. On admission she was acutely maniacal and delirious, with no memory, and no power of attention. Her pulse was 98, her temperature 99·6°, and her general condition weak. She refused food, and, though fed regularly with the stomach-pump, the excitement continued, and she got more and more exhausted, though after the first feeding with custard, wine, and quinine she was less excited, and slept for the first time for a week, but this good result did not continue, and she died on the fifteenth day. The most common *post-mortem* appearances in the brain in those cases that die of acute mania are intense hyperæmic conditions, as represented in Plate IV. The constant occurrence of such hyperæmia in limited areas shows that the vaso-motor disturbance is not uniform all over the brain. In the case from which Plate IV. was drawn the congestion occurred along the whole inner layer of the grey substance of the convolutions as well as in areas. I have always looked on this irregularity of blood supply to the brain, resulting from such vaso-motor spasms at some parts and paralysis at others, as being most important in throwing light on the general pathology of acute insanity, but I scarcely regard any vascular disturbance as a primary cause of the disease, believing that the blood-vessels are the servants and not the masters of the brain-cells. I had a case of acute mania lately who died within a fortnight of her attack, in whose cortex the cells were in a state of marked degeneration similar to those shown in Plate XIII. figs. 3, 4, and 6. By the use of the Nissl and Golgi methods of preparation we are now able to demonstrate cell and dendrite changes that we could not discover some years ago (see Plates XVI., XVII., XVIII., and XIX.). The

question occurs—To what extent can such neurons recover their normal appearance?

An Undescribed Deposit in Cortex in Acute Mania.—The following case of acute mania was accompanied by a pathological deposit, of a kind yet undescribed, all through the convolutions. C. Q. A., æt. 50, had been insane for only a few days, and was acutely excited and maniacal on admission. Her temperature was 98°, and her pulse 88. She was deliriously maniacal, unconscious, restless, sleepless, and noisy. In a fortnight she became more rational and quiet, and could do some work. Then in another week the acute deliriously maniacal condition returned. She got more stupid and irrational, and died four weeks after admission and five weeks after the commencement of her insanity. With the late Dr Joseph J. Brown, then the assistant physician in charge of the department, I made the *post-mortem* examination; and the naked-eye appearances were, like the microscopic appearances afterwards discovered by Dr Brown, quite unique and hitherto undescribed. The pia mater was milky and thickened, and stripped readily off the convolutions. The convolutions were somewhat atrophied. In the convolutions, scattered around the island of Reil, there were seen a number of small pellet-like bodies the size of pin-heads, and of a glistening appearance. When closely examined it was seen that those sago-like bodies were more or less distributed over the grey substance of nearly the whole of the convolutions of the cerebrum. The outer layer of the grey matter of the convolutions was quite distinct from and stripped like a sheet of wet paper off the under layer. Dr Brown prepared many beautiful carmine-stained sections of the convolutions so affected, and, but for his lamented and premature death, was to have fully described the lesion, which was new and very interesting. A deposit of a new material had taken place, as represented in fig. 2, Plate II., all through the grey substance of the convolutions, but chiefly in its inner layers, and extending in some parts into the white

substance. It was in some places in single spots, with a nucleus in the centre of each, but no other trace of organisation visible; in other places in immense lobulated masses, or in great oval bodies with a nucleus in the centre of each, quite visible to the naked eye. In was deposited in masses round the arteries in many places. It seemed as if at the least two-thirds of all the grey substance of the convolutions affected were replaced by this deposit. It took on the carmine stain strongly, and looked more like a waxy material than anything else, but its exact composition I do not know. It was evident that it was a chemico-vital product deposited round nuclei.

Many questions suggest themselves in considering such a case. What a comfort it would be were the pathology of every case of acute mania as definite as this seemed to be! The discouraging thing is, that no such deposit is needed at all to produce mental symptoms like those of C. Q. A. How long was this deposit in forming? Surely longer than the five weeks she was insane. And she became wonderfully rational and coherent after the first three weeks, with her brain convolutions diseased in this way, just as a general paralytic often gets almost rational for a time with his convolutions diseased. It is clearly not only a deposit of this kind, or a pathological change in the cells, but the morbid energising that such lesions give rise to, that really produce the symptoms of acute mania.

Dr Blandford[1] describes "acute mania" as being "a very different disorder" from "acute delirious mania." Bucknill and Tuke[2] incline towards this distinction, but do not clearly describe them as distinct from each other, while Savage[3] and Bevan Lewis[4] describe "acute delirious mania" as distinct from "acute mania." Lewis gives three cases, one of whom

[1] *Insanity and its Treatment*, by G. Fielding Blandford.
[2] *Psychological Medicine*, by J. C. Bucknill and D. Hack Tuke.
[3] *Insanity and Allied Neuroses*, by G. H. Savage.
[4] *Op. cit.*

was admittedly in the first stage of general paralysis. Ball[1] and the French authors are definite in their descriptions of the *délire aigu*, as distinct from ordinary acute mania; and Krafft-Ebing is equally decided. Dr Luther Bell's *Typhomania* is commonly quoted as if it were an extreme example of this disease. I cannot agree that there is any such real distinction between these forms of mania as even to enable us to make them distinct clinical varieties, for the following reasons:—1. In almost all cases of "acute delirious mania" there is at the beginning or end a stage of ordinary acute mania. 2. Savage's psychological and clinical differences, so far as they exist, are in degree, not in kind. 3. The differences in prognosis are not according to fact. 4. There is no real pathological difference so far as we know. Krafft-Ebing's theory that the delirious form is due to cerebral hyperæmia puts a result as a cause.

Delusional Mania.—This is a condition analogous to what I have described as delusional melancholia, the general symptoms being maniacal instead of melancholic, and centring round a fixed delusion or set of delusions. I have now under my care a woman—C. Q. B.—who shouts, scolds, and is violent almost all day, alleging as the reason of her conduct that her children are below the boards of the floor, and that she hears them being tortured by villains who are to kill them. I have a man who shouts and preaches, and warns the sinners of the world in a most riotous and noisy way of the doom that awaits them, saying that the Lord had commissioned him to do so. Delusional mania is in fact delusional insanity *plus* maniacal conduct. Such cases sometimes recover, but when the fixed delusional condition has lasted long the prognosis is bad.

Chronic Mania.—This is simply acute mania running into a chronic course. The division line that marks off acute from chronic mania must always be an imaginary, arbitrary, and unscientific one. The term of twelve months that I have

[1] *Leçons sur Les Maladies Mentales*, by B. Ball.

adopted has this disadvantage, that after that time many cases are curable, while we usually think of chronic mania as being virtually an incurable disease, ending in death or dementia. The long continuance of a maniacal condition of the brain always causes an alteration of the symptoms, as compared with those of recent acute mania. We seldom or never have any tendency to delirious mania, with dry tongue, high temperature, and risk to life, from the intensity of the disease. To be able to live long, suffering from chronic mania, implies a strong constitution, with good digestive and assimilative power. Though the absolute sleeplessness of acute mania is not present, yet many cases of chronic mania sleep exceedingly little. It may seem incredible, but we had once at Morningside a woman suffering from chronic mania, who for eighteen months was never found asleep by the night attendant, who visited her every two hours every night. She must have slept, of course, but her sleep was so light and so short that she was always awake every two hours. Not only did she not sleep, but she was restless, noisy, singing, tearing her bedding, and when she had nothing else to do, gnawed with her teeth and scratched with her nails the wood-work of her room, into great holes. But some cases of chronic mania sleep quite well, and almost the natural time, and yet during the day they continue excited, restless, and destructive.

There is usually a spice of the enfeeblement of mind of dementia in chronic mania. Notably the memory is impaired, a rational interest in anything cannot be roused, and the habits, instincts, and fine feelings are degraded or dulled. The affective power is usually almost paralysed. There is no proper care for children or tender affection for anybody. Yet some of the cases remain most acute and observing for many years. One such case I have, of many years' duration, who will always notice and remark on any little change in my dress before any one else does so.

Some of the pathological appearances found in chronic mania are depicted in Plate XIII. figs. 2 and 6. They consist

of degenerations and partial atrophy of the cortex cells, with vascular and lymphatic changes.

Treatment of Chronic Mania.—As regards treatment, an asylum is the only proper place for such patients. I have seen them kept at home, or boarded in private houses, but I have seldom seen a patient very happy there, or the arrangement very satisfactory. I shall never forget a visit I once paid to a case suffering from chronic mania—C. R. —with short aggravations each day of wild delirious fury. To provide against these, two large rooms in a handsome villa had been divested of furniture, the windows boarded up, and the walls left to the unrestrained destructiveness of the patient. I stayed with her in this apartment during a paroxysm of her disease, and, in thirty-seven years of life as an asylum physician, I have never seen anything so completely parallel to the famous maniac scene in Charlotte Bronte's *Jane Eyre*. The patient tore her clothes to ribbons, shouted and howled, and made a barking noise like a dog, bit her skin, dashed herself against the walls, and dug into the plaster and wood-work with her nails till they bled, while she smeared the blood over her face and body. After many years of this life her relatives at last got over their prejudices against an asylum, and sent the patient to Morningside, where, after a few months of hard walking in the open air, occupation, dancing, and a regulated life, she is an ornamental and amusing member of our community, very happy, and always averse to the idea of leaving the Asylum. She takes her paroxysms still, but they are shorter and less severe. One of the great improvements that has taken place in modern asylum management has been that rational physiological outlets are provided for the morbid muscular energy of the cases of chronic mania. They are neither confined in their rooms nor within "airing courts" enclosed by high walls. They are made to walk about. They are made to wheel barrows and dig on farms. They are encouraged to dance, and they are well fed. Most of

them eat enormously, and if they have not enough to eat they fall off, get worse in their mental state and in their habits. Many of them can be got to expend their energies in hard regulated work, and are the very best workers on the farms and in the laundries of asylums. They are not all, of course, furiously maniacal. Some of them simply have a slight morbid excess and exaltation of function of the brain convolutions, shown by talking or scolding, restlessness, want of affection, and want of self-control, but are not incoherent. If they are kept at work, the most objectionable and repulsive parts of the older asylum life is avoided in great measure, and "refractory wards," with their noise and danger, are not much needed. The scenes with such patients—attendants holding them down and removing them into the seclusion of their own rooms—are few. No doubt there are risks run in the present system to patients and their guardians, but I believe the risks are much less in reality than under the old system, for the patients are not so irritable, not so revengeful, and not so dangerous generally.

The following was a case of mania, acute at first, with temporary recovery, then a relapse, and chronic mania for three years, then death,—all the mental symptoms being those of the ambitious delirium of general paralysis:—

C. Y., æt. 67. A man of a sanguine temperament, very frank and enthusiastic disposition, and industrious habits. For many years he had devoted himself with zeal, enthusiasm, and industry, as to a real business in life, to the study of a particular department of knowledge, until he was one of the acknowledged authorities on the matter. He was a man of much individuality of character, amounting almost to eccentricity, and he evidently had a high opinion of himself and of what he had done. His habits were so industrious in following his special work that he gave himself too little sleep, and this, I think, was the exciting cause of the attack I am about to describe; the predisposing

cause being a heredity to the neuroses, which some of his relations were so anxious to deny that I concluded it must exist—in fact I had evidence, by seeing some of them, of its existence. His disease consisted of a gradual evolution and exaggeration of certain points in his character into excessive and morbid prominence. His good opinion of himself and the value of his work, which before had merely been apparent in small things, now became evident beyond what sensible men ordinarily display. He became restless; his sleep power seems to have gone, so that he sat up all night, and he became irritable without reason. He went about among his friends, and talked all the time, his natural enthusiasm about his special work taking ridiculous forms. He developed openly an idea that he seems to have vaguely held, but did not speak about it, that he was the heir of a great Scotch historical house. In a certain nascent degree, the idea that they are the heirs, or at all events the members, of great historical or well-known families is a most common psychological peculiarity of vast numbers of perfectly sane Scotsmen; and when they have attacks of morbid mental exaltation this vague fancy, and perhaps longing, which before had no more practical effect on their lives than heightening their self-respect, becomes a foolishly expressed delusion. If I have had one Lindsay as a patient who was the rightful heir to the earldom of Balcarres, I have had certainly a dozen, and every insane Stewart is of the royal clan. In about a fortnight C. Y. was absolutely incoherent, swearing, and fancying he was in heaven, this condition being attended with great violence to those about him, and destruction of objects that he had valued most highly. In another day or two he became quite delirious, would take no food, and had to be sent to the Asylum. On admission he was maniacal and furious, attacking those near him very violently, and at times dashing himself on the floor in a way that might have hurt him. He was almost incoherent, but his ideas were all very exalted. He

had millions of money, could make us all dukes, &c. He would make a man a duke one moment and strike him suddenly the next. His case was certainly very exceptional in its tendency to impulsive violence. He was in this respect more like the dangerous maniac of the popular imagination than most of our ordinary patients. With this intense excitement, and with much muscular strength, his pulse was feeble, his tongue dry, his face haggard, and his whole bodily condition one of great weakness and danger to his life. By dint of feeding, stimulants, and taking him into the open air under the charge of trained attendants, he gradually improved. His mental state was all the time exactly that intense exaltation, that morbid mental "expansion," that "ambitious delirium," or "mania of grandeur," which we find so commonly in general paralysis, and which some physicians suppose to be characteristic of that disease. Everything about the place was of the finest, his treatment was very skilful, the physicians were most eminent, and the attendants were most kind. In the beginning of his disease I often was on the look-out for the motor symptoms of general paralysis, without which it is, of course, utterly unjustifiable to diagnose that disease. In three months he had become quiet in manner, self-controlled, and rational, but had just a suggestion of his former state of mind in being too pleased with things, and too grateful for little kindnesses. His friends thought him quite well, and he was removed home with my approval. But he had not been home a day when he set to work to his old employment and studies with a sort of unreasonable enthusiasm. Sitting up nearly all night, he soon got unsettled, his exaltation of mind came back; he became dirty in his habits, impulsive, and utterly impatient of contradiction. If his orders were not at once carried out he would get into a sort of maniacal rage. In seventeen days he had to be removed back to the Asylum, and, though not so delirious or so weak as on his first admission, he was very excited. He would come up

and be very pleased to see you, and in a moment, sometimes with some little provocation, such as your not agreeing at once with him that he was an earl, or sometimes without, he would strike you suddenly, very often going down on his knees immediately after, and in a theatrical manner begging your pardon, and hoping he had not offended you. In meeting you he would come up with a profound bow, and place his hand on his breast, and hope "Sir —— is well." His insane grandeur of manner was often very grotesque. He would talk for a minute in this high-flown way, and ask perhaps for a book or a newspaper. When he got it he would turn round, and in a surreptitious way would tear it up. He was given to impish tricks and mischief of all kinds. His habits were dirty in the extreme; he tore his clothes and his bedding, and he never could be left for a moment without getting into some mischief. He reminded me of the clown in a pantomime, only combining with his mischief a far more magnificent manner than any clown could assume. This went on in spite of all treatment, medical, moral, or dietetic, for three years, at the end of which time he died of internal cancer. The chronic mania, no doubt, weakened his brain functions, and he presented some few of the symptoms of brain enfeeblement towards the end. His memory was worse, he was not so coherent, he was more silly and childish in his ways, and the maniacal symptoms were not quite so intense.

On *post-mortem* examination we found some thickening of the membranes, some convolutional atrophy, some disease of the coats of the vessels, some local congestions, and some few spots of ramollissement, but nothing pathognomonic, nothing so characteristic that by seeing it one could say that the man laboured under chronic maniacal exaltation. This, of course, merely shows the insufficiency of our then means of brain examination, for assuredly there must have been organic changes after so long a disturbance during life, and by our present methods we could have demonstrated them. That any pathological changes will ever show the special mental

peculiarities of such a person—his ambitious mania, his lofty opinion of himself, his destructive tendencies—is more than we can expect, for such things were the evolutions of his temperament and the skeleton of his normal mental framework, which the self-control that we call sanity and the customs of civilised life induce men to hide and keep under, just as they do their day dreams and their pet ambitions. The onset of the cancer, with its cachectic and exhaustive tendency, may have been the exciting cause of the maniacal attack, and also the reason why recovery did not take place.

Elements of Prognosis.—The chances of recovery from mania after twelve months' duration diminishes very much as time goes on, more so than in the case of melancholia; but we do not pronounce a case incurable for a long time, so long, in fact, as the morbid brain exaltation lasts, and dementia does not supervene. In the prognosis of mania, where there is exaltation there is some hope. I had a patient—C. Y. A.—discharged recovered five years ago, who had been for eight years suffering from chronic mania of an extremely bad type, with, as I thought, many of the signs of dementia. I had shown her to my clinical class on several occasions as a typical case of chronic mania. The chances of recovery are in inverse ratio to the length of the disease after the first two years. After five years recovery is the rare exception, but I have known it take place after even twenty years.

Ephemeral Mania (*Mania Transitoria*).—This term is used to describe a somewhat rare form of maniacal exaltation, which comes on suddenly, is usually sharp in its character, and accompanied by incoherence, partial or incomplete unconsciousness of familiar surroundings, and sleeplessness. An attack may last from an hour up to a few days. I was once called in to see a young man in Carlisle, C. Z., a patient of the late Mr Robert Brown, who suddenly, without premonitory symptoms and without any apparent cause, had in the afternoon, in the midst of his work, become incoherent in his speech, talking continuously, restless, pushing about the

furniture, did not know his relations, and expressed many fleeting unconnected delusions. He was not very violent or difficult to manage. He would take no food or medicine, and there was no means of making him do so, and no warm bath to be got, so he was left alone under the charge of an attendant. He did not sleep that night, but towards morning he became less talkative and restless, he began to know those about him, then there was an hour or two of stupidity, confusion, and lethargy, and next day by mid-day he was himself again, went to his work, and had no relapse. That was the first case of the kind I had ever seen, and it was very instructive to me, for I always since ask myself, when called in to any suddenly occurring case of mania—Is it a case of *mania transitoria*? Since then I have met with many somewhat similar cases, both among patients who were convalescent in the Asylum, especially among epileptics, and also in patients who were not in the Asylum. I think cases of *mania transitoria* result from the following causes. Most of them are epileptiform, are, in fact, of the nature of the mental epilepsy of Hughlings Jackson, in cases where distinct motor epilepsy does not exist. I believe the case of C. Z. was of this character. Others are examples of the *epilepsie larvée* of Morel,— masked epilepsy, where a mental explosion takes place instead of an ordinary epileptic fit. A few of the cases result in young persons from slight moral or physical causes upsetting brains of intense instability that have a strong neurotic heredity. There are some such brains so easily upset that a gust of passion, a sudden stoppage of menstruation, a slight excess of alcohol, of sexual intercourse, or of masturbation will make them delirious, and this may only last for a short time. All the symptoms of *mania transitoria* may be seen in the incubation of and during febrile and inflammatory complaints, such as scarlet fever, typhus, and typhoid, local inflammations, influenza, &c., in unstable brains that are upset by very little, through a process of what the olden authors called metastasis. I have seen ephemeral mania after ery-

sipelas. After the dynamite explosion in January 1885 in London, the policeman Cox was first unconscious and then maniacal and deaf for a few hours.

The great question in regard to ephemeral mania is this—Can we tell it by any special symptoms? There are no definite symptoms that I know by which we can tell that any maniacal attack is going to be ephemeral. There is always a presumption that when an attack begins very suddenly it may end suddenly, and if such an attack occurs in a young subject with strong heredity to insanity, whose diathesis has been very neurotic, and whose brain has manifested unstable tendencies, it is right to keep this form of mania in mind, and not be in too great a hurry in sending such a case to an asylum. The treatment is the same as that I have recommended for acute mania, only the bromides, sulphonal, hyoscine, and cold applications to the head are especially indicated. I imagine that family doctors who attend many nervous families could tell of attacks of what are really ephemeral mania, but are naturally called by all sorts of euphemisms,—"nervous attacks," "hysterical attacks," &c. I once saw an attack of ephemeral mania come on and last a few hours in a girl who had usually exhibited her neurosis by attacks of hysteria.

Homicidal Mania.—In popular, and sometimes in medical phraseology, "homicidal mania" means any kind of mental disease where there is an attempt or desire on the part of a patient to kill. But, as you have seen, the homicidal desire may occur in melancholia, and is often associated with the suicidal feeling. As we shall see, it may occur as an uncomplicated impulse, not accompanied by depression or exaltation of mind, and it then stands as one of the varieties of impulsive insanity. But at present we are to view it as one of the chief symptoms of certain forms of maniacal exaltation. In this it occurs in four forms:—First, and most commonly, from delusion, *e.g.*, that persons attacked are persecuting the patient, or are going to kill him. Second, from sheer excess of motor energy, which vents itself, as it were, in killing, as it does

more ordinarily in smashing, fighting, or tearing. Third, from a distinct morbid desire, impulse, and craving to kill. Fourth, homicidal attacks are made in the unconscious delirium of acute mania without "motive," without "intent." Of the *first* kind was the case of C. N. (p. 188), when she attacked the attendant, on admission, under the delusion that she was her enemy and going to injure her, and also the following cases.

A Remarkable Case of Homicidal Mania.—We had in Morningside Asylum, when I was an assistant physician there in 1860, a remarkable case of homicidal mania, a most graphic account of which was published by my friend and then colleague, Dr Yellowlees.[1] The man's name was Willie Smith, who, beginning with an attack of what was evidently simple mania in 1829, and taking to publishing his own effusions, wrote thus:—

> "There's Willie Smith, the carpenter,
> Become at last a publisher;
> You'll find his works in rhyme and prose
> Throughout this land o' cakes and brose;"

and because his contemporaries laughed at him, and the boys called him "Whisker Willie," broke his glass, and blew "smoke out of a horn full of lighted tow into my shop," he applied to the law. And, by the way, what a psychological study is the boy's instinct in finding out weak points of inhibition, his altogether uncontrollable impulse to probe them when found, and his delight at the result! The magistrates would give Willie no redress. Because of these things he imagined he was persecuted, and planned to execute revenge all the rest of the thirty-two years of his life. He was a perfect example of French megalomania,—elevated ideas about himself and his powers, combined with ideas of persecution,—and, in addition, with strong and persistent homicidal tendencies. With loaded guns, daggers, spears, axes, swords, extemporised weapons of all sorts, he meditated

[1] *Edin. Med. Jour.*, August 1862.

and tried revenge and homicide. In the gaol, the poorhouse, the Asylum, he made repeated, persistent, and numerous attempts to murder attendants and physicians, and was the terror of all who knew him. "It is scarcely possible to find language strong enough to describe the bloodthirsty passion which possessed the man, the devilish intensity, deliberation, and determination with which all his attacks were made, or the fiendish delight with which he gloried in relating them." Yet all the time he had "exaltation of the feeling of pride, and high ideas, and delusions regarding his own powers and capabilities, particularly as an engineer, architect, and musician." A visit to him was the sight of the Asylum, and a thing to be remembered for many years. I do not know how it is, but such picturesque cases of insane would-be murderers do not seem to occur now. The fewer precautions that are taken, the less need there seems to be for them.—When he died his head was found to have undergone great changes in shape, as compared with a cast taken twenty years before, and his brain was much atrophied.

Homicidal Act the First Symptom of Mania.—I had a patient once, C. Z. A., æt. about 28, with a strong heredity towards mental disease, who had been working too hard at brain work that was uncongenial to him, had also had a disappointment, and who had previously shown only a little mental confusion for a week, when suddenly, without warning, he made a homicidal attack on his brother when taking a walk, under the delusion that his brother wanted to do him harm. This was really the first distinct symptom of an attack of subacute mania. There were strong reasons why he should not be sent to any asylum, and I got a first-rate attendant for him, who kept him out in the open air, walking, fishing, &c., for ten hours a day. I put him on milk diet, with warm baths, Parrish's syrup, occasional draughts of bromide of potassium and chloral at night, and used occasional blisters to his head. He used often to attack his attendant from delusions about him, who, however, never lost his nerve and

was not afraid of him. He always apologised afterwards. Gradually the excitement passed off, and in about eight months he recovered. A certain mental irresolution and tendency to change was the last symptom to disappear, as is the case commonly in mental disease. A full power of volition, spontaneity, power to originate, are, in fact, the highest mental faculties, and are the last to return and the most apt to be left impaired. I could scarcely have believed at one time that such a patient as C. Z. A. could possibly or safely be treated out of an asylum.

The *second* kind of maniacal homicidal attack, viz., that from sheer excess of motor energy, is often seen both in acute and chronic cases. We had a young man, C. Z. B., in the Asylum, who, when he first became insane, attacked a man on the street, and got his own eye knocked out, and for many years did little by night and day but groan and shout in *crescendo* movement, box the walls so that his hands and knuckles were hard as horns, swollen, and often cut. He would often attack patients and attendants and officials violently. He was wonderfully rational amidst all this, saying he could not help it, that the steam would out, and that he had no desire to hurt any one or any feeling of revenge against any one. I have now a lady who is subject to paroxysms of acute mania, during which she screams in an unearthly howl, tears her clothes, bites her own hands, and will, if you will allow her, take your hand into her mouth and bite it a little all round without really hurting you.

The *third* form, that, namely, resulting from a distinct morbid impulse to kill, without conscious motive, I shall treat of more fully under impulsive insanity, the homicidal variety of which it is, with maniacal exaltation superadded.

The *fourth*, or merely delirious form, is not really very dangerous, because it is purposeless and aimless, and the violence is not co-ordinated. It seldom is seen except when delirious patients are unduly controlled. A physician or a good attendant in an asylum generally walks up to a maniacal

patient quite unconcernedly as to danger, thinking only of the symptoms present, just as one would going in to see a case of pneumonia.

Prevalence of Mania.—The relative prevalence of conditions of mental exaltation is brought out by the fact that out of 2377 cases admitted into the Royal Edinburgh Asylum in the seven years 1874–80, 1310, or 55 per cent., were classified as mania, while only 729, or 36 per cent., were cases of melancholia. The relative prevalence of the two conditions I have shown in Plate V., which also shows the ages at which they occur. Mental exaltation is there seen to prevail more at earlier ages than depression, and to occur most at two periods, viz., at the end of adolescence, and then about ten years afterwards.

Insane Delusions in Mania.—The most important thing to ascertain about delusions in mania is whether they are "fixed" or fleeting. A fixed delusion is usually the concentrated expression of a delusional condition of mind. I mean that it is seldom a patient, *e.g.*, has merely the one delusion that a person works an electric battery to annoy him. Such a delusion is generally the expression of an organic or nervous sensation of discomfort or pain, which makes him have his natural suspicions heightened, he being morbid also on other points. He will not trust any one. He is apt to think the air of his room or his food is poisoned. If the person whom he believes to be working this battery goes away, he will soon fix in his morbid imagination the same thing on another. A patient usually not only believes himself to be a king, but his whole state of mind is that of delusive grandeur. Such fixed delusional states, that last for more than a few months, in mania, are unfavourable as to prognosis; but do not put down either a single delusive fancy that is repeated consistently a few hundred times, or a delusive condition that merely lasts a few weeks, as a fixed delusion. The fixity of a delusion depends on two things, the hold it has—whether it dominates the mental life—and the time it has existed.

Fleeting delusions are most typically seen in that delirium where nothing that is said has any relation to facts, and where no fancy nor untrue statement is repeated often. In very many cases of mania a delusion persists for a few months or longer, and yet passes away, and should not be counted a fixed delusion. There is no doubt, however, that the less fixed and the more fleeting a delusion is, the better is the prognosis.

Delusions take innumerable forms in mania. One of the most common forms is mistaking the identity of persons, calling them by wrong names, and recognising old friends in persons never seen before. Certain kinds of insanity, such as the puerperal form, are specially characterised by this sort of delusion.

Emotional Conditions in Mania.—Dr G. M. Robertson[1] has pointed out that the cases of mania divide themselves into two varieties when looked at from the emotional point of view. In the one class the prevailing emotions are those of pleasure and joy,—hilarious mania; while in the other the prevailing emotions are rage and anger,—furious mania. The facial expressions, gesticulations, and delusions are very different in the two. But the same case may change from joy to rage, and *vice versâ*.

Indications of Prognosis in Mania.—The following are in my experience *favourable indications* in prognosis:—A sudden onset of the disease; very acute symptoms coming on soon; a short duration; youth of the patient; no fixed delusions nor delusional conditions; appetite for food not quite lost; no positive revulsion against nor perversions of the food and drink appetites; no indication of enfeeblement of mind; no paralysis nor paresis, nor marked affection of the pupils; no epileptic tendency; no complete obliteration nor alteration of the natural expression of the face or eyes; the instincts of delicacy and cleanliness not quite lost; no unconsciousness to the calls of nature; the articulation not affected; the disease

[1] *Journal of Mental Science*, July 1890.

rising to an acme and then showing slow and steady signs of receding; no former attacks, or only one or two that have been recovered from.

The effect of a strong and direct hereditary predisposition is not, as is commonly believed, sufficient to lessen the chances of recovery, especially in the first attack. On the contrary, hereditary cases are often very curable, but relapses are more probable. A brain so predisposed is more readily upset by slight causes.

The following are *unfavourable indications* in prognosis:—A gradual and slow onset, as if it were an evolution of an innate bad brain tendency,—*e.g.*, if a naturally suspicious man has gradually become insanely and delusionally suspicious, or a naturally vain man has become affected with insane delusions of grandeur; great length of duration of the attack, such as twelve months' persistence of fixed delusions or delusional states and especially of hallucinations; extreme and increasing exhaustion of the patient in spite of proper treatment; paralysis of the trophic power, so that his body nutrition cannot be restored; *persistent* refusal of food, requiring forcible feeding; extreme failure of the cardiac action and circulation, so that the extremities are always blue and cold; persistent affections of the pupils, especially extreme contraction; persistently dirty habits; a tendency towards dementia; a tendency towards chronic mania; an utter and persistent deterioration in the facial expression, especially if it be towards vacuity; persistent and complete paralysis or perversion or degradation of the natural affections, tastes, habits, and appetites; many former attacks; convulsive, paretic, paralytic, or inco-ordinative symptoms; such perverted sensations and localised trophic disturbances as cause patients to pick the skin, pull out the hair, bite off the nails into the quick; marked changes in the skin, hair, and secretions long continued; a restoration of sleep and bodily nutrition, without in due time an improvement mentally; very persistent insane masturbation; a tendency for the exaltation to

pass off, and fixed delusion to take its place; excitation of the limbs and subsultus tendinum; a "typhoid" condition.

Termination of Mania.—There may be said to be five usual terminations. 1. Complete recovery; this takes place in about half of all the cases of mania. 2. Partial recovery, the patient becoming rational and fit for work, but with a change of character or affection, or an eccentricity, or slight mental weakness, or want of mental inhibition, or lack of fixity of purpose, or a partial paralysis of the social instincts, or some inability to get on with people, or a lack of or lessening of some mental quality which the patient possessed before. This is unfortunately a by no means uncommon result of an attack of any kind of insanity, but more especially of an attack of mania. Such persons count often among the recoveries, and are reckoned legally sane. It is quite impossible to find out how many such cases there are, but I fear that at least one-third of all those who "recover" exhibit some such mental change as compared with their former sane selves. I think it is of the utmost importance to have the cure completed, therefore, if possible, by prolonged medical care, by getting the whole bodily state, in regard to nutrition and nourishment, up to the highest possible mark before a patient returns to work or subjects himself to the causes of a relapse. It is the existence so often of this condition of mental change or mental twist, and the liability to relapse, that makes the public suspicious of a man who has been insane; through which suspicion great hardship and injustice are often done to those who have already suffered from one of the most terrible of human diseases. 3. The substitution of fixed delusions or delusional states—monomania—for the exaltation as the latter passes off. It is difficult to find out statistically how often this occurs. The patients may live long when this takes place, except the delusional condition be that of morbid suspicion, in which case there is a risk of dying of phthisis within a few years. 4. Dementia supervenes. This happens in about 30 per cent. of the cases of mania generally. It is the event we

most dread. It is equivalent to a mental death, while the body may live for many years, especially if the dementia has come on in youth. We have had many patients live so for fifty years in Morningside. The bulk of the chronic patients in asylums are of this class. 5. Death occurs in about five per cent. of the cases from exhaustion, or from causes directly traceable to the disease.

It must be understood that those are the terminations in cases of mania so severe as to require asylum treatment. If we could include the slighter cases treated at home, the recoveries would be more and the terminations in dementia and death fewer.

Prophylaxis of Mania.—A very important question often needs solution by medical men in practice. There are young people growing up in the families they attend with neurotic heredity, with manifestly unstable brain constitution, with "excitable" dispositions and nervous diathesis; and the all-important question is asked—How can such persons best avoid the tendency to attacks of mania? They have patients who have already had attacks of maniacal exaltation, some decided and some only nascent—How can those be avoided in the future? If our present knowledge enabled us to answer these questions, no doubt there would be less insanity in the world than there is. We cannot do so surely, but we can do something in the direction of lessening the tendency of a brain to mania, I have no doubt. Beyond question, persons with this brain constitution should not enter on exciting and hazardous occupations. To take extreme examples, they should not be stockbrokers, election agents, or speculators. Quiet routine modes of life suit them best; positions with fixed work and fixed salaries are most desirable for them. Much outdoor life, living according to rule, dividing up their day into regular portions for work and idleness and amusement. As regards diet, the same advice I gave about children predisposed to melancholia applies here. It should consist largely of milk and farinaceous diet for the young. I lately

saw a very excitable boy of six, very thin, restless, not sleeping much, and, of course, very bright and quick for his age. I found he was getting animal food three times a day, and his guardians deplored the fact that he could not take milk; my advice was to starve him into taking it, to make him walk much and keep him out, and give him when he came in only bread and milk. Of course it was disagreeable at first, but the boy soon acquired an appetite for such food, his bodily conformation largely changed, and he got fatter, less active, less nervous, and slept far more. Children with this disposition are nearly always flesh-eaters, and I have sometimes found them fed on beef-steaks and port wine, with strong beef-tea between meals! I look on strong beef-tea drunk alone, without bread or potatoes, as simple poison for such children. I do not of course mean this to apply when they are ill, and need a stimulant. Such persons should take as much sleep as possible; they should cultivate quiet hobbies; they should select country occupations, and avoid stimulants, tobacco, and sexual intercourse till after adolescence. While ordinary well-constituted brains may stand moderate excesses of all kinds, in work and in pleasure, and may even in a way be said to be sometimes the better for them if not too often repeated, this is unquestionably not the case with those I am now describing. The excess of power beyond the daily needs, the capacity of quick recuperation, the tendency to stop working and to sleep when tired, the power of being satisfied with only a slight or an occasional excess over what the strict laws of nature would dictate, which characterise healthy well-constituted brains, are all wanting in those predisposed to maniacal attacks. I cannot help thinking that for such persons to take to study or to occupations that imply much brain-work is a risk, though they have often bright intellects. It seems to me as if, instead of that, they should go back to nature and mother earth, and become farmers and colonists. I once knew two brothers, twins, alike in mind and body, who had a strong heredity to mania. They both became medical students, and

one had an attack of acute mania at twenty, which ended in dementia. At the beginning of his brother's attack the other had distinct premonitions of the same disease—was sleepless, restless, unsettled, had queer sensations in his head, and felt as if he would lose his self-control. But he at once fled, as for his life, from books and brain-work, and went to be a land-surveyor in the Far West. His neurotic symptoms passed off, and he grew into a strong and happy man. I think it is the instinct of mental self-preservation that makes young men sometimes fly from the influences of civilisation and take to the backwoods, the "Planomania" of some authors. But what about young women? Alas! the prospect for them with such heredity, and particularly when they are well off and live in cities, is often lamentable. So far as my experience and observation go, the regulated life of a convent or sisterhood, or systematic religious and philanthropic work, fulfil the conditions of prophylaxis, when the tendency is very strong, better than anything else. I am often profoundly impressed with the physiological and medico-psychological character of many of the observances and regulations of the Roman Catholic Church as to modes of life and outlets for the emotions. The framers of these observances had often anticipated modern physiological inductions.

But suppose there is not merely a predisposition, but that the actual prodromata of the disease are showing themselves, let us say sleeplessness, want of full power of self-control, and general unsettledness, should medicinal hypnotics be taken—opium or bromides, paraldehyde, sulphonal or chloral, or henbane? I think I have seen these do more good as sleep-producing prophylactics than as curatives after the disease had actually begun. There is no doubt that in the matter of its rest-in-sleep power, like many of its other faculties, the brain forms habits, and gets into bad and morbid as well as into good habits. A man falls off his sleep at his regular time or awakes at too early an hour, and he cannot get rid of this habit his brain has got or is getting into, and if allowed to go

on uncorrected he will become exhausted and insane. Now, while I should in such a case invariably try first nature's simple sedatives—sea or mountain air breathed all day, muscular fatigue, hot drinks at bed time, warm baths, cold or hot to the head or feet experimentally before going to bed, change of scene and work, &c., yet I have to aid these often by a few doses of paraldehyde, sulphonal or chloral, and the bromides, or even by a grain or two of opium at night. Camphor and tincture of lupuline are often sufficient sedatives, or a few drops of tincture of belladonna,—in fact, any sleep-producer. But do not, if possible, let the brain get into the evil habit of depending on such drugs for sleep.

LECTURE V.

STATES OF ALTERNATION, PERIODICITY, REMISSION AND RELAPSE IN MENTAL DISEASES (*FOLIE CIRCULAIRE, PSYCHORHYTHM, FOLIE A DOUBLE FORME, CIRCULAR INSANITY, PERIODIC MANIA, RECURRENT MANIA, KATATONIA*).

Physiological alternations and periodicity; the law of "action and reaction"—Reproductive and sexual periodicity, with their mental changes of periodic elevations, perversions, irritabilities; the periodicity of neuralgia, epilepsy, sleeplessness, &c.—*Folie Circulaire* a distinct disease; first described by Falret and Baillarger; three conditions in the circuit; depression, exaltation, and comparative sanity—Duration of these varies in different cases; *a very incurable disease*—Psychological interest of this disease; the same brain in different states; other symptoms periodic too, *e.g.*, cephalalgia, vomiting, &c.—A few relapses in mania or melancholia do not constitute this disease—*Treatment:* complete the cure in all insanity in youth and adolescent insanity—prevent a "brain habit" being formed, or a "vicious circle" being got into; the bromides; non-stimulating diet; marriage, exercise, regimen—Heredity the strongest predisposing cause; good brains; old families—Relapse or Periodicity occur in most forms of mental disease; from 40 to 50 per cent. of all the cases; most common in youth and in the female sex, and in hereditary cases; prepare minds of relatives for relapses; counsel prolonged rest or control in relapsing cases before work resumed; get health, fatness, and dynamical equilibrium of brain thoroughly established.

Physiological Periodicity.—One of the most fundamental of the laws that govern the higher functions of the nervous centres in all vertebrates is that of alteration and periodicity of activity and inactivity. In all the higher species of the

class the periods of inactivity—sleep—are marked by unconsciousness, and are often combined with the mental phenomena of dreaming and muscular expressions or equivalents of ideation; which things are quite as strange and inexplicable in their essential nature as the phenomena of mental disease. Both may be in a general way understood by reference to mentalisation as a brain function. Neither are in any way comprehensible on any mere mind theory apart from brain. The sleep and waking periodicity of the higher brain functions is the foundation and type of all the other periodicities which exist in nervous action, and they are not a few. The yearly hibernation of many animals, the daily periodic rises and falls of body temperature, the daily increase and decrease of the pulsations of the heart and of the cardiac pressure, the periodic returns of the appetites for food and drink, and of the activities of the glands and involuntary muscles through which food is digested and assimilated, are all examples of secondary nervous periodicities which occur in the course of the daily life of the organism. When we look at the function of reproduction of the organism, we find that its every activity and process is subject to laws of periodicity of the most marked character; and there can be no doubt that these all have their origin in the nervous centres, chiefly in the brain. The period of reproductive activity is always, in both sexes, the period of greatest physiological mental exaltation. The periodic rutting season in male animals, with its courage, pride, activity, display, pugnacity, and restlessness; the young-bearing and suckling period in females, with its increased courage, skill, cunning, protective and providing instincts, show how the mental functions of the brain are affected by the reproductive periodicity. So much are they affected that the mental characteristics of some animals are then completely changed from their natural condition, and reversed, the timid becoming bold and the shy obtrusive; hereditary and natural antipathies and fears disappear for the time, the habits change, night-feeders become day-feeders, &c.

We should not approach the study of the periodicity of symptoms in nervous and mental diseases without keeping in mind these laws and facts of the physiological periodicity of normal nerve function, wherever we have a higher nervous system.

Looking at the mental activities of human beings, we find them strongly influenced by the physiological periodicities. What man is there who is not emotionally more elevated or depressed, more active or inactive in mind at certain times, and at his periods of almost regularly recurring reproductive desire and capacity? What woman is exactly the same in mind before, during, and after menstruation, and during pregnancy or lactation? And the instant we pass from absolutely healthy brains, all those periodicities count for more in the mental life, their effect in dulling, elevating, and depressing being far greater. There are thousands of sane men and women who are regularly duller in the morning and more lively in the evening, or the reverse; or who are duller in the winter and more elevated in the summer; or who are more irritable—that is, have diminished inhibitory power—at periodic intervals, or who are subject to "moods," "cravings," and "tempers" periodically. There are many persons whose mental life is one long alternation of "action" and "reaction," activity and torpor, by a natural law of their organisation. When we look at diseases of the nervous system other than the mental, we find many of them often markedly periodic in their symptoms and times of recurrence. I need only instance neuralgia, asthma, megrim, and, above all, epilepsy, that motor analogue of many mental diseases.

Folie Circulaire.—Two French writers, Falret and Baillarger, were the first to describe as a special form of insanity certain cases in which there are regularly alternating and recurring periods of mental exaltation, depression, and sanity, and to call it *folie circulaire.* Each of these periods may vary in absolute duration from a day to several years, and in relative duration to the other conditions in the circuit in

different cases; but they always recur and follow each other with more or less regularity. In some the period of exaltation is long and the depression and sanity short; in others this is reversed. But in the really typical case the periods are each about the same length in each psychological circle, and the recurring circles all about the same size. Usually there is something special in each case about the exaltation and depression. The exaltation is commonly very pure brain exaltation, with often hyperæsthesia and exaltation of many of the nervous functions, with much reasoning power left but little self-control or common sense, the lower in morality being elevated the higher depressed, the condition described by the French as *folie raisonnante*, or Prichard's moral insanity, being well marked in the early stage. There is then in nearly all the cases great increase of the reproductive nisus. The phases of the exaltation, down even to small things, recur regularly in different attacks at the same time. The depression is apt to be characterised by apathy and torpor rather than by intense mental pain: there are seldom any strong suicidal feelings or impulses, though to this there are marked exceptions. And the period of sanity is apt to be a sort of stupid, inactive sanity, wanting in volitional power, full affectiveness, and spontaneity. The mental balance goes on oscillating between melancholia and mania, standing still at the happy mean of apparent sanity just long enough to raise hopes that recovery has taken place, till the nature of the disease is apparent to the physician, and as often as they occur to ever-hoping relatives. It is mostly an incurable disease, and the bad cases are usually sent to asylums rather than treated at home.

The interest of this form of mental disease is small when it is merely looked at as a rare psychosis of typical form; but it is very great indeed to the student of psychiatry when, in the first place, we make it a means of studying the clinical differences in the whole brain and body state of the same patient in exaltation, depression, and sanity respectively; and

when, in the second place, we look on it as a pathological illustration of the great physiological periodicities to which I have referred, and of the frequent tendency there is in nearly all cases of insanity, or at least in most of those that are hereditary, towards relapse, alternation, periodicity, or sympathy with exalted or depressed physiological function.

The following are some illustrative cases of folie circulaire :—

D. A., æt. 49 on admission to Asylum. He had never been placed in a hospital for the insane before, though he had had from his boyhood dull times and active times, and many slighter attacks of the kind I am about to describe for five or six years previous to his admission. In one of the periods of exaltation, while holding an important position in India, he had got two tiger cubs and tried to drive them in harness through the streets of the Residency. His education was good, his temperament sanguine. He had been reckoned proud and retiring, and he was of an old and distinguished family. In bodily conformation, carriage, and bearing he was the type of an aristocrat. A paternal uncle, at least, had been insane, and had shown periodicity. His family had been a very artistic one, but he had never, when sane, shown any talent in that way. He had married and had children.

Just before admission he had been spending money recklessly, proposing marriage to many suitable and unsuitable persons, getting into passions and using threats about trifles, reckless, eccentric, changeful as the winds in intention and execution. The attack was coming on, but had not come to a height till a week after a domestic loss.

When admitted he was much excited and very indignant, calling on all to witness that he was illegally imprisoned, threatening the dire vengeance of the law on all who had to do with it, but in about ten minutes he was quite jolly and amusing himself with a game of billiards. At first he was merely exalted mentally, but had much self-control. His excitement consisted in a constant restlessness, a perpetual twisting movement and play of his facial muscles. He could

not sit still, or read, or engage in a game for long. He talked much, but could not stick to one subject; he was boastful in a way that was to him unnatural; he spoke of his private affairs, and would indulge in very pointed questions and remarks, without much regard to your feelings. To a good billiard-player, "I'll give you fifty points, and bet a pair of gloves I'll beat you. I don't want to hurt your feelings, but I suppose you know your style of play is not very fine." To a man who had been in trade, "What do you think of my stockings, Mr ——? That was in your line." He was often extremely amusing, fluent, and witty, which he had never been when well. He would rattle off Scotch to the pauper patients in the grounds, French to the ladies, and Hindustani to himself in a way he could never do when sane. In dress he was untidy, and in habits dirty. To the ladies, of whose society he was extremely fond, he was exaggeratedly polite, with the grand air of the olden time; but if they gave him any encouragement he would soon become too familiar. He was always giving them flowers, which he had stolen, and writing them notes, or trying to kiss the maid-servants. If he had any request to make from a lady in the drawing-room, it was no uncommon thing for him to go down on one knee, with his hand to his heart, and all this done most gracefully and amusingly, as if half in fun and much in earnest.

He smoked as much as he could get, and was always grumbling he did not get cigars and tobacco enough, and begging, borrowing, or stealing more. He ate enormously, but not nicely, of everything that came in his way. He picked up and appropriated everything belonging to others that he had a fancy for, and did this also most gracefully, as if it was the most natural thing in the world. He was irritable when controlled, contradicted, or refused requests, and he was always making innumerable and impossible requests. He slept badly, and would, if allowed, sit up all night, or get up and move about by three or four o'clock in the morning. He was not susceptible to cold, sitting with all his windows open in winter.

He passed gradually out of one stage into another. The next stage was a more maniacal one. He dressed more grotesquely, and always wanted to put on three or four coats, vests, or trousers on the top of each other. He would come in to a dance with four vests, would go behind a door or another man, and slip one and then another off as he got warm. His habits and ways got more dirty and disorderly. His irritability took violent forms, assaulting his attendants, smashing furniture, &c. His conduct became so uncontrolled that he could not go to the drawing-room or to church. His whole tastes as to food were the opposite to what they were in health. He liked porridge, which he could not abide when well, and if he did not feel inclined to take it he would turn it out on to his newspaper, put it in his pocket, and eat it when he felt hungry. He would mix up soup, milk, and claret, and take them together. Scarcely anything was incongruous or disgusting to him. He wore his hair very short, and would singe it or cut it himself if he could get no one else to do it. He would, in playing cricket, strip himself almost naked, or put on the most ridiculous things, a woman's hat or shawl, or a cap turned outside in. He turned up at morning prayers one day in buckskin tights, a red vest, a blue cap, and black swallow-tail. His bowels were moved twice or three times a day. During all this time he was losing or tending to lose weight in spite of all he ate. He had his better and worse days all through, usually in alternation. He used to paint and draw pictures and portraits at this stage, producing the vilest daubs, spitting on the paper to moisten his colours, and using his hand and fingers to spread his paints. These he would carry in his pockets by the dozen, showing them to anyone he met—and he could pass no one without speaking. He said he had never known he could paint before. So with singing: he would sing in discord, and think he was doing splendidly. Yet with all this there never left him a certain jauntiness and grace of manner. No one, at his worst, could have taken him for anybody but a high-bred gentleman.

As this brain exaltation came on and increased in every successive attack, each little phase, each little morbid way, such as smoking, eating certain kinds of food, cutting or singeing his hair and beard, painting, putting on one coat on the top of another, would recur with the regularity of the bud, leaf, and fruit of a tree each successive year.

The next stage was the gradual subsidence of all these symptoms of maniacal exaltation, and a resumption of his former habits and ways and appearance.

The first stage, corresponding to simple mania, lasted for about a month; the second, with the symptoms of mild acute mania, about two months, and his recovering stage about three months, so that the whole period of exaltation lasted six months; but he did not stop at the same stage. He at once passed into a condition of great mental depression. To see him in that, one would scarcely have known him to be the same man. His hair well grown, his whiskers trim, his features and eyes dull and inexpressive, his dress most scrupulous and neat, his manner distant and nervous; in speech reticent, and never venturing a remark; in feeling depressed, fearful, and unreliant. He thought he was so wicked that he should not see anyone. He now disliked most of the people he had cultivated during his exaltation, especially relying on the chief attendant, who had controlled him most, and whom he had most heartily abused. His habits were sedentary—he could scarcely be got to go for a walk; his appetite was now moderate, and his tastes very particular, not being able to bear the smell of tobacco, nor to look at porridge nor messes of any kind, and most sensitive to dirt and bad smells. He became very penurious about money. He was always thinking he was doing wrong or giving offence, and did not like company, while he was moral and very religious in his feelings and habits. His whole intellectual and affective life was far more unlike his exalted self than one average man is unlike another. He was stationary in weight at first, but soon began to gain. He was very sensitive to cold and draughts and

loud noises, in all of which he had delighted before. He was full of a morbid sorrow and regret for his previous conduct; but he was morbidly suspicious at this stage, and used to think that the things he had given away or destroyed during his excitement had been stolen. This condition lasted for about three months, gradually passing into one of complete sanity, without depression or elevation, but with some inertness at first, and without much capacity for business. This lasted about six months and then the signs of elevation again began. Altogether this circle of elevation, depression, and sanity lasted about fifteen months. There was no marked line anywhere, though the most distinct and sudden transition was between the elevation and the depression.

The development of the exaltation next time was a slow process, taking about two months before it got so bad that he had to come back to the Asylum. The sort of things he did were going out to ride at 10 o'clock P.M., never going to bed, smoking all the time, foolishly wasting his money, proposing to marry ladies and women suitable and unsuitable, sometimes two in a day, telling one, as an inducement to accept him, that if she would marry him she could put him into an asylum and enjoy his pension! He went into a shop to buy a pair of gloves, and the shop-girl taking his fancy, he went down on his knees to her, telling her he had fallen in love with her. His *nisus generativus* was always exalted during the excitement, but seldom assumed very gross forms. He often said that if he could be castrated he would be cured. The great difficulty at this stage was to get "facts" indicating insanity to put in the medical certificates for his admission to an asylum, for he was very acute, and knew what a doctor's visit meant quite well!

In the second circle of his disease, after coming to the Asylum, all the symptoms were similar to the first, and developed themselves in the same order. The excitement was more acutely maniacal than it ever was before or has been since. The whole period of elevation lasted a year this time,

the depression six months, and the sanity six months, the circle taking two years to get through.

The third circle had a period of excitement of ten months, of depression of six months, and of eight months of sanity—in all, two years. The fourth circle had a period of excitement of thirteen months, of depression of about six months, and of sanity of fourteen months—in all, two years and nine months. He was out of the Asylum living at home, for a year and eight months during part of the depression, the whole period of sanity, and the first month of the commencement of the excitement. He did not enjoy the society of his relations during the depression, and they said he would have been better to have been in the Asylum; and at the beginning of the excitement, when they had to remonstrate with or control him, his affection for them ceased, and he got on worse with them than in the Asylum with strangers. He said cruel and unkind things to them.

In the fifth circle the excitement lasted two years, the depression twelve months, and the sanity fifteen months—the whole thus taking four years and three months. In the sixth circle the period of exaltation lasted for three years, with the usual symptoms, but none of them were so severe as they were on previous occasions. It seemed as if at sixty-two, his brain was not capable of taking on so acute an attack of excitement, the *nisus generativus* not being so keen. During the last period of excitement he was capable of being sooner tired, and took rest, which he never did before, and diurnal changes were very marked. He had one good and then a bad day. But the eroticism, the alertness and grace of movement, the kleptomaniacal tendencies, and all the small phases of his exaltation were still present, there being no trace of the mental enfeeblement of dementia, of bodily exhaustion, nor of chronic mania. The period of depression lasted about two years, and he then kept well for a year, when at the time the period of exaltation should have come on he took a fearful attack of neuralgia in the branches of the fifth nerve, which seemed as if it would

kill him. In a few weeks it passed off, and he has remained sane for two years. He has very slight and irregular periods of elevation, not of sufficient intensity to require asylum treatment, and it seems as if with advancing age and diminished *nisus generativus* he has got over the disease, and will remain at home leading a fairly normal and happy life. The damage done to the organ by the previous attacks of exalted morbid energising has evidently been repaired in the intervals of sanity, during which he lays on flesh greatly. The bromide of potassium alone, and combined with cannabis indica, did not influence any of the attacks of excitement.

The following is the record of a case of most prolonged, and, on the whole, one of the most regularly alternating cases of folie circulaire in short circles I have ever seen :—

D. B., æt. 30, was admitted to the Royal Edinburgh Asylum in 1847 without any history whatever, and she died in 1886. She was a person of education and intelligence, though sent as a pauper patient. She laboured under all the symptoms of acute mania at first, and in a few days it was recorded that she was "imbecile," then in a few days more that she was quite well. From that time till her death, forty years after, she had regularly recurring short attacks of acute mania, during which she was restless, incoherent, excited, destructive to her clothing, violent, and with no memory or consciousness of familiar things or persons, this lasting from a week to four weeks usually. This was succeeded by a few days of a condition with all the symptoms of dementia with a little depression, and she then became practically sane for a period of from a fortnight to eight weeks. Her circle took from four to twelve weeks to complete, enfeeblement of mind taking the place of the more usual depression. We have a wonderfully complete record of her symptoms all these years; and though once or twice there are such entries as "She is now almost continuously excited," as in 1852 for a month or so; or "Periods of excitement more frequent, of quiet shorter," as in 1853 and in 1861; "Intervals of quiet longer," as in 1862,

yet the irregularities are no greater than are common in regard to menstruation in the average woman. There can be no doubt that this was an example of mental alternations governed in their times of occurrence and duration by the menstrual periodicity. For long she had amenorrhœa, but the return of the catamenia made no difference, and, more strange, the ceasing of menstruation at the climacteric made no difference. For four years before her death the regular alternations of acute exaltation, mild stupor, and sanity were not so regular as before, and the symptoms of the exaltation were scarcely so acutely maniacal as at first. In 1883 she had an attack of severe general convulsions, succeeded by a comatose period, which seemed to come on instead of one of the usual attacks of excitement. She recovered from the excitement, and the usual alternations then went on as before. This is what constantly happens in epilepsy, the excitement being thus once in forty years "larvated." The whole case is otherwise instructive, for, though it shows the known tendency in a brain for acute excitement to exhaust and destroy the normal power of energising of the convolutions and leave that diseased mentalisation which we call dementia, it also shows this, that even severe attacks, when short, produce only a short enfeeblement, which is recovered from soon. Most instructively of all, it shows that over 220 of such attacks, continued for such an enormously long period as forty years, need not necessarily destroy the mental power of the brain and produce complete and permanent dementia. The brain in this proves the recuperative and resistive power that it shows in many other ways, if the periods of the exalted energising, or the strain, or the poisoning, or the morbidness is only short in time, and the organ gets rest between one attack and the next. We all know that periodic sprees may be continued with impunity in many people for a lifetime, and that many men may safely work their brains at full pressure for many years if they give them a Sunday rest and an annual holiday.

I had another case, a lady, D. C., who was for ten years in

the Asylum, who had all that time attacks of excitement, lasting about a fortnight, alternating with periods of depression for a week; but in her case, as in that of D. B., the depression immediately preceded the excitement, and the periods of sanity were about three weeks' duration. But, like all the rest of the cases, the length of the periods of the different conditions was not absolutely uniform. In her case, also, the regular alternations went on up to the age of seventy-eight, when she died, occurring only in a mild form during the last six months of her life, when she had a broken leg, an ulcerated and sloughing ankle, and was very exhausted. But her mind was rather enfeebled during the quiet "sane" periods for the last ten years of her life, and she had sexual delusions about men wanting to seduce and marry her. The exhausting effects of the excitement on her brain, as in many of the alternating cases, were aggravated by her addiction to masturbation during the exalted periods.

I have now under my care a gentleman, D. D., aged 49, who for the past twenty-six years has been subject to the most regularly recurring brain exaltation every four weeks almost to a day. It sometimes passes off without becoming acutely maniacal, or even showing itself in outward acts; at other times it becomes so, and lasts for periods of from one to four weeks. It is always preceded by an uncomfortable feeling in the head and pain in the back, a mental hebetude and slight depression. The *nisus generativus* is greatly increased, and he says that if in that condition he has full and free seminal emission during sleep the excitement passes off; if not, it goes on. Full doses of the bromide and iodide of potassium have the effect sometimes, but not always, of stopping the excitement, and a very long walk will at times do the same. When the exaltation gets to a height it is followed always by about a week of stupid depression. It seems as if the depression in those cases always meant a reaction after morbid over-action—a muddy mental calm after a storm, an anæsthesia after a hyperæsthesia.

In the following case the alternations began in old age :— D. E., æt. 74 on admission, unmarried, had had several attacks of excitement in the three years previously. A sister is insane, and brother hemiplegic, with periodic attacks of mild mental exaltation, which also came on in advanced life. The patient had been a staid industrious man, who had been in business all his life, and done his work well till he was over seventy, leading a sober life. He has been excited for three months. It began at first by great mental exaltation and hilarity of manner. He was very fond of the ladies, but never erotic. Especially he used to laugh most immoderately at nothing in particular, putting down his stick into the ground, and bending forward and roaring with laughter from five to ten minutes running. This had exactly the effect of a man laughing well and continuously on the stage, at a cause of which you are ignorant,—it was catching, and you could not help laughing too. This gradually passed into a stage of violence, delusions of being insulted, shouting, sleeplessness, and suspicion. During the exalted period his temperature was always over 99°, he ate enormously, craved stimulants, his bowels were moved twice a day, and he slept little. His conduct was extremely ridiculous for an old man. His delusions were mere fleeting fancies and suspicions. In four months from the beginning of his attack he became depressed, and then he never spoke, looked dull and heavy, slept well and got fat, but his bowels became very costive. All his brightness and curiosity and much of his intelligence left him. He took no interest in anything. There was much of stupor in his state. He felt little mental pain. After about two months he got over his dulness, and became practically sane, cheerful, chatty, and contented. After three months of this condition, or about nine months from the beginning of the attack, he gradually got exalted, passing through exactly the same phases as before. The excitement lasted about six months, from March to December, being very mild for the last three months; he then passed into a two months' attack

of stupid depression as before, and was fourteen months well, his whole circle thus taking twenty-two months to complete. He next got exalted in December, and was acutely excited for about three weeks only, and then had an attack of extreme stupor, depression, weakness, and prostration for three months. He then became sane, but almost at once passed into another attack of excitement. The whole duration of this circle was only four months. The excitement that followed was more acute than it had ever been before; it lasted five months, and was followed at once by great depression lasting for six months. He was then sane for three months, this circle taking fourteen months to complete. This time he became exalted in May. This circle took twenty-one months to complete. In December he became exalted again, his irritability being very great this time, and his hilarious happiness less marked. He remained so for nine months, and then became depressed rather suddenly, passing into a condition of nearly complete stupor, and leading an almost vegetative life. He remained so for almost five weeks, and then, without the usual intermediate period of sanity, he suddenly one night became delirious, with hallucinations of sight, but this only lasted for one day. He was after that four days depressed, and again got exalted, with more decided delusions than he had ever had before. This lasted less than two months, and he then passed into an attack of stupor again. By this time he was eighty-two years of age, and he had an epithelioma of one of his great toes, with irritation and suppuration, which acted as a drain and irritant. The toe was amputated by Mr Bell, and he made a good recovery, and he gained in flesh and strength, but remained in the condition of depressed partial stupor for three years, lying in bed mostly. He would answer questions when spoken to, but never ventured a remark or took any notice of anything. He remained in this state of complete senility and mental torpor till his death at eighty-five. When carefully observed his torpor was seen to be more intense at times than others, and he signed his name differently at

different times, showing a certain kind of passive periodicity till his death.

In this case, as in most of the others that I have seen with prolonged alternations, they were irregular; but in him the periods of excitement always began in cold weather, from October to May. The most striking circumstance about the case is its commencement at seventy-four, after the intensity of the sexual period of life was past. It is only the third case of that kind I have known. The excitement coming on in spurts for a few days at the last attack, as if the senile brain had no longer vigour enough to keep up a prolonged exaltation, would seem to be one of the endings of alternating insanity.

In the following case of D. F., the attacks of excitement and those of depression ceased at the age of sixty-five, after alternations of the two had lasted for twenty years. He was an artist, but could only paint at the beginning of the period of exaltation and at the end of it. He never could finish a picture, and if he attempted to do so he got worse mentally. So long as painting was spontaneous or pleasurable he did it, and it did him no harm. If he could not catch a likeness, or tried to elaborate or paint in details, or had nothing but drudgery to do he got worse. In his case there was very marked exaltation of the memory, and his fancies always took the pleasant form of a loss of his own personal identity and the assumption of that of the author whose works he was reading or repeating. As he got better he would tell me that he was very happy indeed as he lay awake at nights, for he would fancy he was Shakespeare, Burns, or King David, as he repeated aloud their works. He could vividly recall the events of his boyhood, and repeat long conversations he had held with his friends then. His eyesight and hearing became very acute, so that he could read small print, and paint without spectacles, and hear whispers; while, as the exaltation wore off, he had to use stronger and stronger spectacles, and was very deaf. When depressed, all his bodily

functions, appetites, and propensities were torpid and sluggish. There was a difference of 2·2° between his average temperature during exaltation and depression. There is in the case-books of the Carlisle Asylum a careful record of his condition from 1862, till his death in 1876. Æt. 54, 1862, January, exalted; July, pretty well: 1863, July, quite well; October, depressed: 1864, February, exalted; July, depressed; October, quite well: 1865, April, depressed; August, exalted: 1866, January, quite well, and remained so till 1867, when in July he got depressed, and in December his alternations were diurnal, he being one day depressed and the next very excited, this lasting for a month or two: 1868, July, became depressed; October, quite well: 1869, April, depressed, and was so till October, when, instead of the usual and expected exaltation, he got quite well, and kept so for over three years, till January 1873, when he had a short attack of mild exaltation, lasting for three months. He then kept well till January 1874, when he had a few occasional days of slight excitement, at irregular intervals, and then got quite calm and rational, though not energetic,—in fact, he got into a typical and normal senile condition of mind and body, his brain remaining in this quiet haven of rest after its twenty years of violent alternations of storm and sluggishness, till he died of bronchitis in the end of 1876, at sixty-eight. In this case it will be observed that there was a distinct tendency for the periods of exaltation to occur in the early part of the year, in January and February, and the periods of depression to come on towards the end of the year, from October to December. The periods of depression did not follow, but precede, the exaltation in this case, contrary to the usual experience. One should perhaps say that the excitement followed and seemed to be a reaction from the depression.

The following dates of the admission and discharge of D. I. show the length of the attacks in his case, for he is sent to the Asylum whenever he gets exalted, and is sent home when the excitement passes off. He is then not very painfully depressed,

quiet, penurious, and unsocial, sluggish for two or three months, and then gets quite sane and does his business very well. His exaltation is of the typical kind — talkative, energetic, passionate, quarrelsome, abusive, restless, sleepless, but never incoherent, and very fond of spending his money lavishly. He once got off to London about the beginning of an attack with £1000 in his pocket, with the deliberate intention to spend it in a month and enjoy himself, as he said he had "led too quiet a life at home," and he pretty nearly got through it. I have reason to believe that he once made a large sum of money during one of his exalted brilliant periods, just as he was passing into the elevated part of a morbid mental circle. Hopefulness, superabundant energy, mental subtilty, argumentativeness, wildness, a strong leaning towards the other sex but not an offensive eroticism, characterise this period. The dates show the irregularity of the seasons at which the attacks came on, and of their duration. He was forty-five when first admitted, and he had had a few attacks previously. Admitted October 1866, discharged January 1867; admitted April 1870, discharged May 1870; admitted August 1871, discharged September 1871; admitted December 1872, discharged February 1873; admitted February 1875, discharged May 1875; admitted August 1877, discharged September 1877; admitted November 1880, discharged January 1881; admitted December 1881, discharged March 1882.

Duration of Periods.—An examination of the exact periods during which the exaltation, depression, and sanity persist, their relation to each other during different recurrences, and the sizes and regularity of the successive circles in each case, shows this far more than I had supposed previously to more exact investigation, viz., that the periods are not often always the same in the same patient at different times, and that, in fact, very few of them are perfectly regular and typical in their symptoms. I only find about one or two out of forty cases of *folie circulaire* that were absolutely regular. In others

the periods of excitement were often twice as long in one circle as in another, and the periods of depression and sanity varied also. The age, state of the general health, conditions of life, critical periods, diet, medicines such as a combination of the bromides and Indian hemp and sulphonal, have all the power of modifying the length and the intensity of the periods of exaltation. We shall see how important those facts are, taken in conjunction with the views as to the essential nature of the alternations which I am to speak of.

While a typical case of alternating insanity is not hopeful, yet, in prognosis, we must not conclude that a case is incurable merely because there are recurrences and alternations for a few months or for a year, or even for two or three years.

Differences, Mental and Bodily, between Periods of Exaltation and Depression.—It is very interesting and most important to study minutely the exact psychological differences in the same brain when morbidly elevated, and depressed, and sane; and it is almost equally important to compare the differences in the bodily symptoms of the two former conditions. The cases I have recorded show many of these differences and symptoms. In the elevated stage, either at the beginning or all through it, there is an actual exaltation of many of the mental faculties, notably of memory, of general acuteness and ability to reason in a way. The mentalisation is almost unceasing in some form, but the common sense is gone; the power of self-control and of carrying out definite mental work is gone; the power of attention, while it may be very acute in some ways, is not under the control of volition; there is often great subtilty of reasoning and a marvellous capacity to explain away eccentricities of conduct; there is intolerance of contradiction; there is a childishness of mental condition in some respects, with a foolish credulity; affectively the patient is morbid, though he feels happy, yet his emotions are always shallow, and directed in fits and starts chiefly towards objects and persons that are present, being always weakened towards or withdrawn from their natural objects—wife, children, &c.

There is a most remarkable change in the appetites, which are usually quite perverted from what was natural to the patient. Different kinds of food, drink, and stimulants are sought for and enjoyed. The general feeling of *bien-être* is exaggerated. The courage is exaggerated, and there is little caution left. There is an intense desire to attract attention. The reasonable conventionalities are not observed. There is always extravagant and morbid generosity. The social instincts are enlarged, lowered in tone, and they become somewhat promiscuous, a man nearly always seeking the company of his inferiors in station.

In the stage of depression the natural affections towards children usually return or flow into their natural channels with much force, but the subjective feeling of the patient is one of misery and ill-being; he has no courage, no power to resolve, no general activity of mind. In all the typical cases there is a sort of torpor and inactivity of mind, there is niggardliness in money spending, in wearing clothes, &c. There is often a feeling of profound disgust and regret at the extravagant and foolish acts of the excited period.

The changes in the bodily symptoms are very marked. The patient, when exalted, loses weight; when depressed he gains weight; the difference in weight between the two periods being often two stones. When excited he takes much exercise, is restless, and never tires. When depressed he is sluggish, and dislikes exercise, and is soon tired. In the former stage his temperature is above the normal, especially in the evening; in the latter below it, the average difference being 1·1°, and in some individual cases 3·6°. In the former he can bear cold well, and likes it; in the latter he cannot bear cold, and dislikes it much. In the former his bowels are very regular, and often moved more than once a day; in the latter they are costive. In the former his face is mobile and expressive, and his eyes glistening; in the latter they are heavy. In the former he is always hungry, and his capacity for eating and digesting everything almost unlimited; in the latter he may

eat well, but is very particular as to food. In the former he craves stimulants and tobacco; in the latter he often loathes them. In the former he is not sensitive to disagreeable odours, sounds, and sights; in the latter he is usually hyper-sensitive. In the former the skin is moist and perspiring; in the latter it is usually dry and often hard, and skin diseases, such as psoriasis, not unfrequently appear. While exalted the patient's pulse is usually full and hard; while depressed, small and compressible. In the former the sexual appetites and capacity are always increased; in the latter they are often paralysed —one gentleman told me that for two years he had no sexual feeling or power. The sight and hearing are often much more acute in the former than in the latter. In the former state the patient sleeps little and lightly; in the latter long and soundly.

Many ordinary nervous symptoms follow the periodicity and alternation of the mental. I had one woman whose circle took about six weeks to complete, and whose period of elevation was always preceded and ushered in by severe cephalalgia and then by vomiting. I have had several women in whom the depressed period was preceded by neuralgia. Several of my patients can tell beforehand when they are going to get excited, by their bodily feelings.

Katatonia.—One form of alternation has been called katatonia by Kahlbaum. It is an alternating insanity in which there are either epileptiform symptoms or those resembling catalepsy, hallucinations of sight and hearing, unconsciousness, with trophic symptoms, such as œdema and weak pulse, these preceding or accompanying the melancholic stage. It is simply a variety of the disease in which the functions of the motor and trophic centres are specially involved.

Relationship to Physiological Periodicities.—I have for a long time been impressed with the relationship of the mental and bodily alternations and periodicity in insanity to the great physiological alternations and periodicities, and I have gradually been led to the conclusion that they are the same in all

essential respects, and only differ in degrees of intensity or duration. By far the majority of the cases in women follow the law of the menstrual and sexual periodicity; the majority of the cases in men follow the law of the more irregular periodicity of the *nisus generativus* in that sex. Many of the cases in both sexes follow the seasonal periodicity, which perhaps in man is merely a reversion to the seasonal generative activities of the majority of the lower animals.

Relapses in Ordinary Insanity.—A careful clinical study of mental diseases reveals the fact that there exists in the majority *of all the acute cases*, at some time or other, in some form or degree, in the course of the disease, a tendency to alternation, periodicity of symptoms, remissions, or recurring relapses. I have taken the 338 cases of mental disease admitted to Morningside Asylum in 1881,—181 of them being cases of mania, and 129 of melancholia, the rest being general paralysis, dementia, &c.,—and I find that in 81 of the female cases, or 46 per cent. in that sex, and in 67 of the men, or 40 per cent. of that sex, there was relapse, alternation or periodicity of symptoms in the course of their attacks. Many of the 338 admissions were chronic on admission, so that of the recent cases the decided majority showed those symptoms. 50 of the 129 cases of melancholia, or 39 per cent., and 98 of the 181 cases of mania, or 54 per cent., were alternating or relapsing, or showed diurnal, or monthly, or seasonal, or sexual periodicity. It may therefore be concluded that insanity in the female sex has more of this character than in men, and that the cases of mania have it to a greater degree than those of melancholia. In some patients it was a morning aggravation and evening improvement, those being usually cases of melancholia; in a few it was an evening aggravation, those being, contradictorily, also cases of melancholia. Very many cases of mania were more exalted one day and less so the next; many sleeping and waking on alternate nights, these being usually cases of mania. The attendants are very strong on this point of the "good" and "bad" days

of these patients, and calculate much on them. Many of the patients had remissions and relapses of a few days regularly for a time. Some had monthly or menstrual aggravations. In some cases these periodic remissions occurred at the beginning of the attack, but in the majority towards the end of it and during the convalescence of the patient. I had a lady lately under my care, convalescing from acute mania—D. K., a strong, healthy woman of 38, who had recently recovered from a bad attack of rheumatic arthritis. First attack, duration ten days, with a heredity to insanity. She remained in a state of acute excitement for about a week after admission, getting, however, at intervals sufficient sleep and sufficient nourishment. An abatement of the disease then set in, and from that period there was a slow but steady improvement until seven weeks after admission, when she was discharged, having made an excellent recovery. The most striking feature in the case, during the latter weeks of its course, was the distinct daily morning exacerbation and evening remission. Each morning showed a distinct improvement on the previous morning, but a distinct relapse as compared with the previous evening, while each evening she appeared to be further on the road to recovery than she was the evening before. In the morning she would be full of doubts, suspicions, and querulousness, while the evening would find her sensible, cheerful, and grateful. The change would come on in a few minutes without external cause. Even when convalescence was well advanced, the morning was for her a period of distress and distrust, but with the evening came quiet, rest, and a thankful heart. I have now under my care a gentleman—J. M.—who for over two years has suffered from melancholia with regular diurnal changes. One day he is fairly cheerful, plays games, reads the papers and expresses no delusions. Next day he is very depressed, says he is going to die, that I shall certainly not see him again, he is suicidal, cannot fix his attention on anything, makes grimaces, and is restless. The change from the bad to

the good or from the good to the bad state takes place in the evening.

Such a case is merely a type of what is very common in all forms of mental disease, especially during convalescence. A medical man in attendance should always prepare the minds of relatives for this tendency to relapse and alternate. Nothing is more discouraging to both the doctor and the relations when it persists for a long time; but it is our duty to keep up their hopes and ours, and to think of and refer to examples where the tendency has been quite got over, even after a long time. I once had a young man of twenty who took regular relapses for five years, and after that made an admirable recovery. He has to my own knowledge done his work well and has kept well for ten years. Taking the chronic incurable cases now in the Asylum, I find that about 40 per cent. of them are subject to aggravations of their mental condition at times.

Causation.—I find that the younger the patient the greater is the tendency to periodic alternation, remission, and relapse. The phenomenon finds its acme in the cases of pubescent and adolescent insanity.

I also find that the stronger the heredity the greater the tendency to periodic relapses and alternations. I have never met with a single case that could be called typical *folie circulaire* where there was not hereditary predisposition to insanity. It seems as if there were certain brains so constituted as to be incapable of energising except irregularly, swinging between elevation and depression. The above facts and statistics refer to ordinary remissions; but, on the other hand, the infrequency of cases with such regular and continuous alternations as to be properly called *folie circulaire* may be seen from the fact that, out of 800 patients in the Asylum at Morningside now, there are only 16 of this kind, or 2 per cent., and of the last 3000 new admissions, comprising about 2000 fresh cases of insanity, less than 10 have as yet turned out of this character. But of course I do not include

the cases with merely long remissions, or the cases with relapses for the first year or two, or the demented cases with occasional spurts of excitement, or the women with a few irritable days at menstruation, though many of these are of the same essential nature as the most typical cases of *folie circulaire*, following the same laws of physiological periodicity in an irregular way.

Statistics.—I have had under my care altogether over forty cases of typical *folie circulaire*. Of these about one-half followed a more or less regular monthly periodicity. About one-third obeyed the law of seasonal periodicity, all in an irregular way; and the remaining sixth I could bring under no known law, on account of their irregularity. I had lately such a case, a lady, who was for a year deeply depressed, then for several years quite well, then for seven years more deeply depressed, then for three months passed for sane, but was mildly exalted, then was depressed for a year, and was exalted, with all the typical symptoms of typical *folie circulaire*, for two years, and then, soon after passing into the depressed condition, dying of cancer of the mamma.

Commencement of the Alternating Tendency.—There are a few cases that begin with attacks of melancholia, but in my experience at least 90 per cent. began their actual insanity with attacks of maniacal exaltation. The ages of the patients on the first breaking out of the disease, were all the way from fifteen to seventy-four; but every one, except the one D. C. (p. 230), began within the actively sexual and procreative period of life. I find no record of a woman's case beginning long after the climacteric period.

Termination of Typical Folie Circulaire.—As this cannot be determined till after the patients have died, it is impossible for me to give accurate figures; but, of forty cases, five ceased to be subject to alternation in old age after sixty; one of these was above eighty, two being women. The men were left in a condition of mind and brain that might be legally

reckoned sanity, though in all cases there was some mental enfeeblement or a tendency to be easily upset, with lethargy, want of spontaneity and of volitional power. One case terminated in complete dementia. Two ran on into chronic mania. Two died of exhaustion during a maniacal period. Five things may be said about the prognosis—1st, its utter uncertainty; 2nd, recovery cannot be looked for at the climacteric period in many cases; 3rd, about 20 per cent. may be expected to settle down into a sort of quiet, comfortable, slightly enfeebled condition in the senile period of life; 4th, in my experience very few indeed become completely demented; 5th, the tendency to death is very slight.

General Conclusions.—Looking at all those facts and considerations, therefore, I come to these conclusions—That periodicity, or a tendency to alternations of elevation and depression, is a very common characteristic of mental diseases; that it is much more marked where they are very hereditary than in any other cases; that it is more common in youth, puberty, and adolescence than at other periods; that it is in its essential nature merely the exaggerated or perverted physiological diurnal, menstrual, sexual, or seasonal periodicities of the healthy brain; that the cases that have been called *folie circulaire*, katatonia, &c., are merely typical or exaggerated or more continuous examples of pathological periodicity. Another remarkable fact about the typical form of alternating insanity is, that by far the greater number of patients who suffered from it were persons of education, and far more than a due proportion of them were members of old families. I never met with a fine case in a person whose own brain and whose ancestors' brains had been uneducated. It seems to me that the tendency to alternation of mental condition, to energise at one time with morbid hurry and then with morbid slackness, is one of the forms of brain instability which specially results from too much "pureness of blood," or from the heredity of many generations of gentlefolks, all of whose brains had been more or less edu-

cated. Possibly it is one of the modes by which nature brings that kind of stock that has become degenerate by overbrain cultivation for many generations to an end.

Real work can sometimes be done during the sane periods. D. D. has done some literary work, in the intervals of his attacks, for the twenty-six years he has been ill.

"*Lunacy.*"—I have no doubt that it was the sexual and menstrual periodicity of mental diseases, seen in so many cases, that formerly originated the absurd idea that insanity was influenced and caused by the moon's changes, and which gave it the name of "lunacy."

Treatment.—The great point in treatment is to prevent the brain getting into the vicious circle of continuous alternation by endeavouring really to complete the cure in all cases of mania—especially in all cases of adolescent mania—and to enforce prolonged quiet and brain-rest after attacks in persons who have shown a tendency towards recurrence and relapse. In them particularly the whole organism should be kept up to physiological perfection. I believe that a non-stimulating farinaceous vegetable diet and no alcohol is the best for them, with an outdoor life and plenty of muscular exercise. A regular mode of life, too, without excitement, is best. One thing which I have heard recommended, and which is very liable to be resorted to in the beginning of the exalted stage, when the patient is very erotic, is marriage, but I have never seen any good come of it either by cure or prophylaxis. I once, with Dr Heron Watson, had to stop the banns in the case of a lady who had been seduced in the beginning of the exalted erotic stage of this disease, and was going to be married for her money by a scoundrel who had taken advantage of her mental condition. I mentioned in the case of D. A. that he usually proposed to many ladies at the beginning of his exalted attacks. There are only two medicines that I know which have any power of stopping or cutting short attacks, and of sometimes averting them for a long time and of even curing them, and these are the bromides, especially combined at the

more acute stages with Indian hemp, and sulphonal. The following cases illustrate this action :—

D. F., æt. 23. This young woman has had six attacks of exaltation in four years. She had been insane for four weeks previous to admission. All the attacks had begun during menstruation, and while maniacal she was always very erotic, especially at the beginning of the excitement. She was violent, incoherent, noisy, dirty in her habits, and sleepless before admission and for about three months afterwards. She then got well, but in six months had another similar attack of mania, lasting for two months. She lost 28 lbs. in weight during this attack, and her temperature was always 1·5° above its normal rate during the excitement. She remained free from excitement for nine months, and then had another similar attack. After four months of sanity she one night suddenly got up, smashed the windows of her dormitory, saying that the devil was looking in, and became violently excited, her temperature that day being 100·8°, pulse 108 and strong. She was ordered drachm doses of the bromide of potassium every three hours, with a drachm of ammoniated tincture of valerian with each dose. She was put into a dark room at her own suggestion. On the following day her temperature was 99·6°, and her pulse 108. She was still much excited, but not so much so as on the day before. On the second day her temperature was 99·3°, and her pulse 130 and weak, the excitement being much allayed. The medicine was after this given only three times a day. She was left in bed for a fortnight in a dark room, as she said that if she got up she would get worse. At the end of that time she was still rambling, partially incoherent, and full of delusions, but nearly free from active excitement, and the medicine was discontinued. She remained slightly affected in mind for another fortnight. At the end of a month from the day the excitement began she was well, and was discharged from the Asylum six months thereafter. I heard that she was still keeping well a year from the time of her attack of mania,

which was thus cut short—as it seems to me—by bromide of potassium. I added the valerian because she was beginning to menstruate at the time the mania began. It will be observed that the excitement in this attack only lasted about three days, and she had never been less than two months excited at a time in her nine previous attacks. The excitement disappeared as the patient showed signs of coming under the influence of the bromide, and its constitutional symptoms were developed. I must say, however, such a favourable result is rare.

I have now tried sulphonal in doses of from 20 to 40 grains in three cases of old established *folie circulaire* and in many cases where a periodic recurrence of excitement and insomnia seemed to be establishing itself, and the general results are sufficiently striking to have left a very strong impression on my mind in its favour. The first case of *folie circulaire* was that of D. G. A., a woman of 37 on her admission into the Asylum in 1869. Before that she had had several attacks of maniacal excitement, and had been treated in two asylums. For twenty years she had regularly recurring attacks of intense maniacal excitement lasting from a week to six weeks, each succeeded by a week or ten days of melancholic stupor, and then by a few weeks of comparative sanity, and industrious habits. The excitement was very intense, accompanied by continuous noise, violence, tearing clothing, and unmanageability. She usually needed to be secluded in her room for a few days at the height of each attack. As time went on the attacks became on the whole longer and more violent, while the sane intervals were shorter. The bromide and cannabis mixture produced a slight diminution of the excitement, while the effects of hyoscine were only transient. The menopause produced no marked change in her condition. In the end of 1889 we began the use of sulphonal in 30 grain doses, repeated twice or even thrice a day till she got fairly under the influence of the drug, at the beginning of each attack of excitement. The result was that the attack was modified at first, and after a few months quite arrested.

Gradually one or two single doses were sufficient to stop an attack, and in twelve months the attacks ceased to recur, and she required no more sulphonal. During the year (1890) she gained continuously in weight, until she was three stones more in January 1891 than she had been in January 1890. During 1891 she kept quite free from excitement or depression, and needed no sulphonal. She was a quiet, industrious member of our community after her twenty years of recurrent excitement, but she was not sane. The disease seems to have undergone a transformation. Instead of typical *folie circulaire* it became marked monomania of unseen agency, her delusions being that when she was asleep at night men came in and thrashed her, and almost broke her bones, leaving her sore all next day. I cannot, of course, say whether, if given in the early stage of the *folie circulaire*, during the menstrual life, it would have arrested or changed the disease. She was so quiet and manageable that in 1894 we recommended her to be "boarded out" in the country. On leaving the Asylum she at once became violently excited, and the alternation has been set up again and we now find sulphonal unavailing to stop the periods of excitement though they are modified through its influence.

The next case of D. G. B. was not so striking, but the effect of the drug was essentially the same, in its tendency to arrest regular recurrences of maniacal excitement. She was admitted to the Asylum in 1847, at the age of 16, and from then till April 1890—that is, for a period of forty-three years —she was subject to regularly recurring attacks of maniacal excitement, lasting from four to seven months, alternated with periods of stupor for two or three months, and comparative sanity for other two or three months. When excited she could not be managed out of seclusion all day for several weeks. In April 1890, when beginning an attack, she was put on sulphonal in 30 grain doses twice a day, and after getting nine powders the excitement ceased and she became quiet, sensible and manageable. She showed occasional ten-

dencies to get excited during 1890, but one 20 grain powder always had the effect of stopping the attack. She got one such powder about once a month. The change in her was marvellous. In January 1891 she developed Tubercular Peritonitis, and died in February.

Pathology.—Of all forms of mental disease this is the one which illustrates best the distinction — often forgotten — between the pathology of insanity and its pathological anatomy. If we can show that from any hereditary, developmental or reflex cause, or that through any undue or insufficient mental stimulus, a certain morbid mental condition is caused, if we can co-relate certain clinical groups of mental and bodily symptoms with such causes, and if we can show reason why such symptoms are associated with, and due to, morbid working of the brain cortex, even though after death no abnormality can be discovered in any brain cell, capillary or lymphatic, we are entitled to say that we know something of the pathology of the disease. It implies a narrow and a most unscientific conception of mental diseases and of brain working to imagine that gross *post-mortem* changes are needed, to explain all cases of insanity. It is a travesty of the word "scientific" to exclude from its all-embracing range any possible aspects of the study of mental diseases, or to claim that a microscopic and morbid anatomy view is the only or the chief "scientific" mode of studying the subject. Especially is this the case when we consider our present methods and instruments for accurately investigating mind and brain and their co-relations. Can any reasonable man expect a full explanation of subtile mental, affective, and moral changes, from health to exaltation, from exaltation to depression, then to health again, this alternation going on for years with no permanent damage to mental functions, in gross cellular or vascular changes? As regards the pathological appearances found after death in cases of *prolonged* alternating insanity, I found in all of them more or less brain atrophy, especially affecting the convolutions, in all of them thickening of the

membranes, in many of them thickening of the skull cap. One case who had been for twenty-five years ill, showed an amount of deposit of bone on the inner table of the skull I have never seen exceeded (see Plate VI.). In most of them there was vascular disease, and in one or two cases local disintegrations from embolisms and other causes of blood-starvation. In short, I found the common pathological appearances in cases of chronic insanity, but with no special pathology whatever. No doubt such a deposit as that figured in Plate VI. is secondary and partly compensatory for the brain atrophy, but, like many of the changes of structure in the bones and membranes, the vessels and lymphatics, the neuroglia, and the epithelium of the brain in chronic insanity, it is very instructive in the light it sheds on the pathology of the disease. If the intensity of the morbid action was so great even in the bones, as to cause such secondary changes, how great must it have been in the convolutions, its primary seat! That skull cap is a vivid object lesson, which rightly interpreted, enables us better to realise the dynamic, trophic, and vascular conditions within the skull during life, at the times when the brain cells are in a state of maniacal exaltation.

LECTURE VI.

STATES OF FIXED AND LIMITED DELUSION (*MONOMANIA, MONO-PSYCHOSIS, PARANOIA*).

"Delusion," popular and medical use of—Delusion from want of judgment in idiots and imbeciles—Religious Delusions, visions, voices, hyperæsthesia of special sense centres—Delusions from ignorance and superstition—False sense impressions transmitted to brain—Sleep and Dreaming and Nightmare—Definition of "Insane Delusion"—Fixity or not of Delusion important—No pure Monomania—Delusional states commonly associated with some enfeeblement (Dementia)—*Types most Common:* Of Pride; of Unseen Agency; of Suspicion; two last sometimes associated with first; "megalomania"—Infinite variety of Delusions and subjects of Delusion—*Monomania* usually incurable—How it arises: 1. Out of temperament and disposition; 2. After acute mania and melancholia; 3. From brain poisoning by alcohol, or after traumatic injury; 4. From perverted or misinterpreted sensations—Legal importance of Delusion; importance for Diagnosis and signing Certificates of Insanity; "harmless" and "dangerous" delusions. *Treatment:* Change; distract mind by new ideas, new pleasures, new work; correction of any bodily disorder, or any cause of irritation; an asylum. *Prevention:* Counteract temperament and morbid disposition by reason and good principles and habits; suitable choice of occupation; temperance in all things; cheerful family life; work body rather than brain. *Paranoia:* German origin of name—Want of clear definition—Variety of forms—Hereditary—Slow evolution—Abnormal reactions—Dangers—Social effects.

Sane "Delusion."—The study of this form of mental aberration should, like that of every other form, be begun from a physiological point of view. There are all sorts of false sense impressions and false intellectual beliefs which are consistent with sanity and due to physiological laws. When a light is

rapidly intermittent and appears to the eye to be continuous, when the sensation of the toes and their movements are felt in an amputated stump, and when one is deceived by the quick movements of a juggler, we have sense delusions produced. When through brain fatigue, brain poisoning, or disturbance of the circulation, objects are seen double; or when the old impressions on the perceptive centres of the brain are projected and appear to be seen as real objects, the true nature of which can be ascertained by the judging faculty, we have then real hallucinations, but not insane hallucinations. The whole mental life of a child in its very early years, before its senses are trained or its judging power developed, is one series of delusions. The superstitions of the ignorant are delusions, but they result from lack of training and want of development of the judging power, not from a diseased perversion of it. When, on the 28th February 1896, I saw a great part of the population of a Nile village turning out one night, and with frantic gesticulations, great shouting, and firing of guns, trying to frighten away a beast which they believed to be devouring the moon during an eclipse, it was an instance of a delusion of ignorance. I have heard a perfectly sane but ignorant woman in Cumberland say that every time she had sat by the bedside of a dying person, she had heard the "Death Clock" in the wall, and whenever she heard that, she knew the patient was going to die, and that as to this she had never been deceived. You meet with people who believe that certain things are going to happen on utterly absurd grounds, and so labour under delusions in a popular sense. Dreaming and nightmare give you the best idea of an insane delusion, and are the nearest physiological counterparts of it. A sufficient amount of fatigue and exhaustion from want of sleep will produce a condition in almost any brain that is closely allied to that of the monomaniac.

Such "delusions" have little relationship practically to "insane delusions," however much they may resemble them in certain respects, or however much they may be psychologically allied to them. The delusions that are really half-

way house between those I have referred to and the true insane delusions, are the false beliefs of imbeciles, and the temporary delusions of persons whose emotions have been strongly roused by religious services or contemplation, so that they see visions or hear voices. The imbecile has deficient judging power from want of brain development, and often has, in addition, morbid energising of his convolutions. His delusions have often to be treated as insane delusions, as when he imagines he is married to a woman and wants to act on his belief, or when he thinks his neighbour's property is his own, and proceeds to use it. To us, as practitioners of medicine, the "insane delusion" is the one that affects the conduct or life, provided it results from a morbid condition of brain, either through mental deficiency or disease. The education, age, class, and even race, in some degree determine whether any given false belief is an insane delusion or not. The whole subject of false sense perceptions, sane hallucinations, unreasoning "instincts" about things, is most interesting both from the physiological and medico-psychological side.

Definition.—An "insane delusion" may therefore be defined to be "a belief in something that would be incredible to people of the same class, education, or race as the person who expresses it, the belief persisting in spite of proof to the contrary, this resulting from diseased working of the brain convolutions."

Illustrative Cases.—There was once an old gentleman, D. L., a patient in Morningside Asylum, who in his manners and conduct was all that was gentlemanly, in his emotional nature was benevolent to a high degree, and in his dress and deportment exhibited no peculiarity whatever, but who calmly asserted that he was many thousand years old; that he had known Noah rather intimately, and found him a most sociable man, but "a little too fond of his toddy"; that he once went out snipe-shooting with King David, who was a crack shot; and one day gave St Paul a lift in his gig on the Peebles road. I once had a patient, D. M., at the Carlisle Asylum, who was acute intellectually and morally irreproachable, but

who, ever after a hemiplegic attack, believed that twice two was not four, but four and a quarter, and who spent his whole time not devoted to keeping the Asylum accounts — which he did accurately on the "old system" in deference to the steward's "prejudices"—to making elaborate calculations by his own mode of arithmetic as to the distances of the stars, a new system of logarithms, constructing new quadrants, &c. His manuscripts, which filled two large chests at his death, he solemnly left by will to the University of Oxford. In both these cases there was no trace of the morbid mental depression or exaltation that I have described. The delusions, which were perfectly fixed and unchanging from year to year during the lifetime of the patients, really constituted the insanity. They were examples, therefore, of delusional insanity or monomania. There are very few, if any, examples of a pure monomania—that is, of a person who has one single delusion and that alone. The ordinary form of this type of mental disturbance is for the delusions of the patient to refer to one particular subject or set of subjects, or for him to be morbid in a particular direction of intellect or feeling, while he is sound in most directions. The chief directions such delusions take are of unreal greatness, unseen and impossible agencies, unfounded suspicions and fears, constituting the three varieties of monomania:—

a. Monomania of grandeur or pride.
b. Monomania of unseen agency.
c. Monomania of suspicion.

Monomania of Grandeur or Pride. The Rightful King of England.—Here is a pauper patient, D. N., who believes himself to be the rightful king of England. He looks sane, and is perfectly quiet and self-possessed in manner. He is a well-developed man, far above the average of his class in general looks and in facial expression. He told us his story with perfect calmness and coherence, rather apologetically, and saying he knew we would probably not believe him if he said he was heir to the throne. Then when he came to tell

about his betrothal at thirteen to Queen Victoria—I have had a score of patients who were to have been married to Her Majesty—and Prince Albert's adroitly slipping in, he got on to ground purely imaginary and delusional. The whole story was a queer mixture of wholly imaginary premisses and much sound but also much unsound conclusions from them.

Reasoning of the Insane.—Insane people generally do not reason rightly from wrong premisses, as Locke said, but some of them do. The simply delusional and the melancholic cases are usually the classes who approach nearest to this description. It is most difficult, if you believed his case is incurable, to pick a flaw in the reasoning of a melancholic who says, "I am miserable and incurably ill, and shall get worse, and lose what reason I have got. I believe all such people are better out of the way. I have all my life believed this, therefore I mean to put an end to myself as soon as possible." One premiss is correct, and the other was held by him to be so when he was quite sane, and is held by many sane people. But in the case of the monomaniac, one of his premisses is indubitably wrong in the estimation of all sane people, but you cannot convince him of this. If twice two had made four and a quarter, as D. M. said it did, then he was quite right to have devoted every spare moment of his life to the demonstration that the world had fallen into a serious error, and to working out a new system of astronomy and logarithms on a correct basis. D. N., the king, is an excellent blacksmith, and we get him to work at his trade in our shop. Nowadays we do not allow our monomaniacs or insane people generally to dress themselves or to look like what they believe themselves to be, as they did of old. The antipathy to individualism which affects society in every direction is strong in asylums for the insane. We now discourage those outward manifestations of insane delusions that used to give a lunatic asylum its most striking character. The monarchs crowned with straw, the duchesses in gaudy spangles, the field-marshals with grotesque military uniforms, that could be seen in any

asylums of old, you will not now see when you go through our wards. If the man with the millions of money, who is the rightful heir to the throne, affixes the top of a soda-water bottle to the front of his cap as a faint symbol of his position, it is at once unfastened. If the princess, who is the greatest beauty in Europe, bedecks herself too conspicuously with bits of coloured glass and in conspicuous ribbons, they are quietly removed at night. The insane man, like his sane brother, in most cases soon adapts himself to his circumstances, and submits to rule and public opinion. Half the discipline of asylums is directed against insane appearances, habits, and ways. By suggestion those would daily strengthen delusions and would confirm evil habits if uncorrected. The last of the great characters of the older period of this Asylum, D. O., lived on into the present *regime*, and was allowed to wear the insignia of his rank, but I have allowed no successor to arise. He was the "King of kings," and wore a most elaborate crown of many colours, each part of which had a symbolic meaning. He was so picturesque a character about the place, and was so striking a clinical illustration of monomania of grandeur, and withal so harmless and useful in the garden, that I never ordered him to be discrowned. He had certain visions from heaven which he reduced to concrete forms in drawings and polished stones, and his relations with Queen Victoria were most intimate. One "cloud of the Lord" which he once saw on the top of St John's Church, had taken most vivid hold on his imagination, for he cut likenesses of it on the bark of almost every large tree in the Asylum grounds, where they will remain for perhaps hundreds of years. The tendency to symbolism and morbid outward decoration is much stronger in the Celtic races than in the Teutonic, and in the female than in the male sex. In the Highland asylums it is almost impossible to make the patients abandon their conceits in dress. Such changes have their drawbacks, for no Dean Ramsay of the future will be able to compile for us such delightful stories of our fools, and our writers and artists will

have to look out for less striking environments for their madmen than fools' caps and gewgaws, or chains and filth.

Hallucinations of the senses are very common in this whole class, and also delusions as to the identity of the persons around them. I have a gentleman patient who, whenever he goes into Edinburgh, meets the late Emperor of the French, or the late Prince Consort. So marked is this tendency in some cases that it might be called a special form of monomania, that, namely, of mistaken identity. It is well illustrated in this letter of D. O. A.:—

"My Dear Mama,—I have been long in answering your last kind letter, but the real reason is that I have been always so scarce of news to give you that I could never make up my mind to sit down and write; indeed, I cannot say that I have anything to say at present. I was out on Saturday seeing Signor Bosco's magical entertainment in the Masonic Hall. I think I will just tell you all my ideas about the people here, as I do not think that they are fancies of my own. Old Captain G., surgeon of Uncle T.'s dragoon regiment, is here; he calls himself Dr S., but I don't mind that.

"Sir J. H. is here too, calling himself J. S. 'With frisking airs Miss pussy tries the power of she's gooseberry eyes to win the heart of every swain.' He is attendant on a Mr Y., whom I have no reason to doubt now is a brother of the operatic singer that the Duke of Cambridge shot in the theatre at Vienna. I am positive that I saw Sir A. in the Meadows without his case of false teeth. Emperor Yea of China is here too, calls himself Mr B.; he is kept by a son of Lord C. Peter D. is head gardener here; he, his wife and family live at the lodge at the gate on the road out to Comiston. S. D. is here on the ground flat; I think, when I recollect right, you put that idea into my head out at P. He is attended by Malcolm, a son of Abraham Lincoln's. He writes squibs in the papers about the 'Solo' royal family. He gets the papers printed over at the asylum press for my use, but I never read them. Maggie F.'s brother is also one of the attendants here. Bell, the brother of the Private Bell of the 5th D. G., is here acting as general scogey. He is the man that J. bought Wasp from. The matron of the East House here is a sister of my attendant's; they are both children of Lord C., and their mother is the cook to the East House. Abraham Lincoln's wife is here, kept by Miss D. Wilkes Booth and Miss Reynolds, Gregory, Mag Wallace and old Armstrong son is head attendant of the male wing, East House.

"Kind love to you all, and I remain, my dear edie,

"Your most affec. son, D. O. A."

"Am I in a trance again when I say that you really cooked and eat the meat which came off my head?"

But to return to D. N., who may be taken as a typical case of monomania of grandeur. His mind is not only affected by the delusion that he is king, but it is affected by a tendency to unreal elevation in all directions, and it is also now somewhat enfeebled, as is commonly the case after many years of such a state. He often writes me long rambling letters, proposing various impracticable modes of managing the Asylum, and he is the greatest fault-finder in it. Then affectively he is different from a sane man, showing small love for his wife or children, and he takes morbid dislikes to people without real cause. He once went down to Leith to see his family, and went to all the houses of a certain street which he imagined belonged to him, and gave the inhabitants due notice to quit at the next term! He is, of course, very inconsistent to work as a blacksmith, he being a king; but the conduct of by far the majority of the insane is quite inconsistent with their beliefs; and then if he did not work, he would get no tobacco or beer to lunch, arguments that even royalty can appreciate. Sometimes the kings and cases of monomania of grandeur will not occupy themselves in common occupations. I have a "prophet of the Lord," D. O. B., a joiner, who by no means at our disposal can be got to work at his trade. He says the Lord has set him a new work, and he must follow it. He sees visions from God all the time, which he puts down on paper, green and blue angels, sapphire prophets, &c. He will go to no amusements, nor to church. I have another man, D. O. C., with almost precisely the same delusions—viz., that he is a "Man of God"—who is a capital worker in the garden, and enjoys a dance or a concert immensely. The mental disease in D. N. first appeared thirty-four years ago as an attack of melancholia, from which he recovered in four weeks, and the present attack began twenty-nine years ago, also with an attack of melancholia, which, as it passed away, left him in his present condition.

There is a strong heredity to insanity in his family, his brother having been a melancholic and committed suicide; and his eldest daughter, D. O. D., has been a patient here since she was twenty-two, being now a case also of monomania of grandeur, and believing herself to be a princess; her insanity beginning with melancholia. She is like her father in face and complexion, but was begotten when he was sane, when therefore his disease was in him a mere potentiality. But this is often seen. That law of neurotic heredity, through which in each successive generation the neurosis appears at an earlier age than in the preceding one, was exemplified in this case, for the father was thirty-three when he first became insane, the brother, who committed suicide, thirty-two, while the daughter was only twenty-two. The tendency towards early developmental dementia that is usually seen in such strongly hereditary cases if they do not recover, is shown here, for along with her delusional condition she is also much more mentally enfeebled than her father, not being able to employ herself, not taking interest in anything, and having little mental vigour or spontaneity.

A Distinguished Assemblage.—In addition to the cases I have mentioned, I am able to present to you some of the most remarkable personages that have ever lived. Here is Jesus Christ, and here are the Prophet Elias, the Emperor of the Universe, the Universal Empress, the Empress of Turkey, the only daughter of God Almighty, Queen Elizabeth, four kings of England, one king of Scotland, the Duke of Kilmarnock, the inventor of perpetual motion, a man who has discovered the "new elixir of life" that can cure delusions, twelve persons to whom this establishment and all that it contains belongs, a lady who daily and nightly has delightful conversations with the Prince of Wales and the rest of the Royal family, a man who is to renovate humanity, and cure all our existing ills by means of a scheme he has in his head. The gentleman who has discovered the "new elixir of life" wrote out an advertisement setting forth its infallible virtues

that would have done credit to the most successful patent medicine proprietor. He used to make it up in the Asylum, and wanted much to try it on the patients, but none of them believed in him or would take his nostrum. But he was allowed to go out for a walk into town occasionally, being a harmless man, and I found that he used to take a few of his bottles with him, and sometimes sold them at five shillings a piece—this monomaniac—to sane citizens of Edinburgh!

Those all are calm and cheerful people, some of them bearing themselves in their deportment and manner as become such distinguished personages, though a few do not exhibit any indications of their greatness in appearance or gait, and all are absolutely unmoved by the most conclusive argument or evidence that their ideas are wrong and unfounded. They all looked on me as the fool to be pitied or contemned, who could not see their greatness. They were all in good bodily health, and all looked as if they would live as long as any of us.

Physiological Foundation of Monomania.—In considering the origin of this form of mental aberration, we see that all this imaginary grandeur and power has a physiological foundation in the brain-working of every man. The wildest of those beliefs are not half as extravagant as the day-dreams, imaginations, fancies, castles built in the air, and longings of nearly every man and woman. And in comparison to the imaginings or even the beliefs of a child, they are tame. Compared with the dreams of most men, they are very reasonable indeed. It is easy to conceive how the brain of a man with an heredity to insanity, of unstable constitution, of a proud imaginative disposition, would, when it became disordered in working from any cause, readily play its owner the trick of making him believe his day-dreams and longings to be realities. Once impair the judging power that enables us to compare and estimate facts, and we should all be kings or very great men at once.

Sometimes the monomania of grandeur is combined with

that of suspicion and persecution — the *megalomania* of the French.

Monomania of Unseen Agency.—Another marked type of delusional insanity is that of unseen agency. Such patients believe that they are electrified, that they are mesmerised, that noxious gases are blown into their bedrooms, that people speak to them and call them bad names through walls, by telephones, and out of the ground, that spirits and devils haunt them, that persons come to them at night and break their bones or ravish them, that persons read their thoughts, or have power over them to act on their thoughts. Most of those delusions imply a sense of ill-being on the part of the patient, or pain or discomfort, the origin of which they misinterpret. I had a woman who for long believed the devil was inside her. At the point where she said he was, I discovered a cancerous tumour, of which she died in a few months. This was merely assigning an insane and impossible cause for a real pain which she felt. Such cases are common. One of the most typical examples of delusions of being affected by electricity—and this and mesmerism are the two most common of all unseen agencies of which the insane complain—was that of a woman, D. O. E., who at sixty-four became possessed with the delusion that people were electrifying her at night. This idea came on gradually, with a little depression at first, until it made her life an evident burden to her, unfitted her for all work, and she accused her neighbours of "working the electricity" on her when she was sent to the Asylum. We found she had had heart disease, accompanied evidently by angina. The pain of this she attributed to people electrifying her. This continued, and got worse, till her death of the heart disease. Living a solitary life tends to bring out such delusional conditions. I have a case now with "a big serpent inside," in whom the delusion originates in angina. It is more common to have delusions, and not to be able to trace out such obvious causes as those two cases. All constitutional diseases, such as cancer, tuberculosis, rheumatism, alcoholism,

and especially syphilis, which cause brain anæmia, and local disturbances and pains, may, in a person whose brain is predisposed to mental disturbance, cause delusions of unseen agency. Dr Hugh G. Stewart long ago described certain syphilitic cases who imagined that noxious gases were blown into their rooms at night, or driven into their nostrils. To prevent this they stopped the keyholes of their doors at night, plugged their nostrils and ears, or wrapped their heads up. I have met with many such patients. It is evident that there is a general sense of organic discomfort in such men, which is misinterpreted into those delusions. Frequently the chronic irritation of the drunkard's stomach is attributed by him to living animals inside, or to poison. I once had a patient, D.P., who had been a great drunkard, and had had many attacks of acute alcoholism, who said he had mice inside him, gnawing and running about. He was gradually cured or recovered in about two years, under a teetotal regimen, bismuth, easily digested food, and fresh air. I give here the letter of a syphilitic case, D. Q.:

"Forced dreaming, forced vomiting from the stomach, forced glut vomiting from the throat, cold shivering by the forced thinking, sweating done in the same way, pains in the stomach any way they think. I think it is time that this way of punishing should be stopped, and let me know if there is anything going to be done for my benefit; and I want to see about bad usage. I think it was time it was stopped. I would thank you to let me know the real truth.—I am," &c.

This man was an old soldier, and had on admission all the appearance of the syphilitic cachexia. He used to talk constantly about his delusions, and was rather dangerous, but now, after five years, he never mentions them except he is spoken to about them, and in fact scarcely speaks at all. His bodily health is much improved, and he works in the garden every day. The following letter was written to me by a man, D. R., who was very dangerous indeed from his delusions, often threatening to kill me, and he afterwards said, often seriously deliberating whether he would do so or not:

"1*st April* 1868.

"Mr Clouston,—I now take the opportunity of writing you these few lines to let you know that I am quite well in health, but you have punished me sore, and I do not know what it is for. A week or two after I came here you let me alone, and then you started and did wrong with me, and all your attendants had some stuff to stifle me with. I think it is a disgraceful affair, and John —— very nearly choked me. Some, too, at the table, for I think you have them put on to do so, and in the bedroom there is Adam ——, for I have catched him, and told him about it. On the 18th of February you crushed my breast, and on the 20th you crushed my left side in. I thought you had done for me, and on the 21st February you crushed the right side in. And the curious conversations you have been making with me at nights. It's a shame and a disgrace. You ought not to try to kill me altogether. I have stood bad treatment that would have killed ten men, and you ought to put a stop to it, for I have done no wrong," &c.

Find out a Bodily Cause for Delusion.—This man, D. R., seemed in perfect bodily health, and I could not discover any peripheral causes for the painful sensations he probably had, and which he so misinterpreted. But in every case I advise you to examine carefully into the condition and working of all the great organs and functions, the history of the patient, to find out whether there has been syphilis or rheumatism, or other constitutional disorder. Try, in fact, to discover a bodily basis for the delusions. Such delusions of unseen agency are often associated with hallucinations of hearing. Patients fancy that people whisper through floors and down chimneys. One patient I had was tormented by people speaking down her chimney, another was constantly annoyed by people talking to him through telephones, and a man who had been a heavy drinker, and had acute alcoholism several times, said he was constantly subjected to a process which he called "ric-me-tic." That persons read their thoughts and influence their thoughts are very current delusions. Patients almost always complain most of unseen agencies at night, just as they have hallucinations most at nights when, there being no conflicting real impressions on the senses, the brain is most anæmic, and is acting at its lowest point, the season, in fact, of fears and superstitions. Macbeth during the

day was a man not "taint with fear," but at night "mine eyes are made the fools o' the other senses." "How is't with me when every noise appals me?" It is very common for women to have the delusion that they are made insensible and ravished at nights. One can, of course, more readily understand the explanation of such delusions than of others.

I am told it is very common, indeed, for criminals undergoing solitary confinement in penal servitude to have delusions that they are worked on by electric batteries. Their weak degenerate brains, natural suspicions, ignorance, and the occasional use of the electric battery to detect imposture among them, seem to account for this. I once had such a man sent from Broadmoor Criminal Asylum to the Carlisle Asylum at the expiry of his sentence, a strong, bad-looking, dangerous fellow, whom we regarded as the worst man in the place. After a few months he escaped, and after being in hiding among his friends for a short time, began to work, and has remained an industrious, self-supporting member of society ever since, and that after having been for years regarded as a most dangerous criminal lunatic. No doubt, having first to secure his safety from recapture, and then to earn his own living, and being away from those whom he would consider his natural enemies, his mind would be distracted from his delusion, and it would cease to have its former power over him to influence his conduct.

Pleasant Delusions.—In some few cases delusions of unseen agency are pleasant to the patient, or at all events are not complained of. Some of the sexual cases are of this character. Such was the case in the man D. S., who wrote me this letter:—"*Record of Miracles.*—The Reverend —— —— came to see me, and his countenance changed to that of my deceased uncle —— ——. My length while in bed was increased to about seven feet, and then made normal. When in bed a very pretty coloured landscape, including cottage and woman at her washing tub, appeared on the wall. The picture could not have been produced by the aid of the camera. P. Smith, casting a wry look at

me, jumped from the floor to a height of a foot, then passed through a framed picture without injury thereto, and through a solid 14-inch stone wall, then came through the water-closet door to meet me. While peering in at the laundry windows a number of the girls' clothes flew off them while at their washing tubs, and after about half a minute's nakedness their clothes came back to them, and they were properly fastened without their aid. Near Myreside Cottage, James S., astride a thin wire fence, was seen speeding along for about 100 yards, the wooden posts forming no impediment to his 'wiremanship,'" &c.

I have under my care at present a gentleman, D. T., who believes he is under the power of "an automaton," who controls him, makes him scream out, talk nonsense, break dishes, &c. He is a quiet and most courteous gentleman, who, after having done one of those things, will reply, if asked why he behaved so, in a peculiarly measured calm manner—"The automaton made me do it. I did not wish to do anything of the sort." He will say sometimes, still most calmly, "Will you write to the commissioners to remove the automaton? I beg to renew my request of the 14th July."

Monomania of Suspicion.—The third great class of delusional cases are those of suspicion. Along with the second variety it constitutes the "monomania of persecution" of some authors. This kind of delusional condition is essentially the same as the last, only it is not so great a departure from soundness of mind. Patients who labour under this form of mental disease do not attribute their annoyances to unnatural, unseen, or impossible means, but to the malevolence of real persons who plot against them, have evil designs on them, poison their food, annoy them, persecute them, prove unfaithful to their marriage vows, &c. We all know that the natural development of suspicion is very various in different people. Many people are of a suspicious temperament from the beginning, others are made suspicious by real experiences in life or by ill-health. We know that the weak are always suspicious throughout the whole of the animal

kingdom. It is the same with the human brain—an element of morbid suspicion exists at the beginning of nearly all cases of melancholia. Nothing is more common than for such persons to imagine that people are looking at them, watching them, and following them about. I look on this as mental evidence of an ill-nourished or anæmic brain. But in the class of persons of whom I am to speak, it is a chronic manifestation of a disordered brain. As we shall see when I come to talk of phthisical insanity, morbid suspicion is the most constant sign of the brain malnutrition that goes with a combination of tuberculosis and insanity.

"*Joe the Tinsmith*" *working off a Delusion.*—D. T. A. is full of suspicions, thinking that every one about annoys him on purpose. If another patient coughs, it is to annoy him; if one spits, it is to insult him; if one sings, the words refer to him. His career is instructive. He was a soldier, and lived hard, had an attack of acute mania, and when the exaltation and excitement passed off, he was left in his present condition, and remained so all his life. For the first thirteen years he was regarded as a dangerous man, and it was feared to put any sort of tool or instrument into his hand, for he was the hero of many fights—in fact, fought or wanted to fight someone every day. But as he was a tinsmith originally, and I found him one day in a better humour than usual, I sent him to the tinsmith shop of the Asylum, not without fears that he might murder someone. He had just before written this letter:—"I write to you to let you know that I am much abused here by villains. I will be clear of the band of villains they have upon me. Be so good as come before they kill me. I am not able to stand death here. They have poisoned me many a time. I will not stand the bloody abuse that they are giving me. A fellow they call Hamilton (a fellow-patient who talked to himself) is abusing me most awfully," &c. With much tobacco and a little beer, of which he was very fond, and many promises that all the "villainy" would be ended if he would work well and not fight, we set him to

work. He took to it at once, worked as if his life depended on it, hammered away at tin and copper plates, making them into utensils, and evidently found much satisfaction in the outlet that unlimited hammering and much noise gave him for his muscular energy and irritated feelings. He clearly treated the tin plates as if they were the "villains" that had been annoying him. The great difficulty was to provide him work enough, he got through it so quickly. From that day to his death, for fourteen years, "Joe the tinsmith" was one of the most useful members of our community. If he had a fight, it was usually on Sunday. He retained the delusions of suspicion, but they were not all-powerful in his mind as at first, and his countenance was less expressive of fierce passion. He got to believe that he had some friends, and it mollified him. He died of cancer in the stomach, which had caused many small secondary deposits in the brain. But apart from this there was marked disease in the brain cortex, with hypertrophy of the spider cells and pigmentary and granular degenerations of the nerve cells.

Patients in this condition of morbid suspicion often attach delusional importance to simple acts, every movement of persons near them having to them a hidden meaning. I had a clergyman once, D. T. B., under my care, who fancied that a conspiracy had been got up against him to put him out of every curacy he had held, and to prevent him getting a living, that the bishop had been concerned in this, and of course magistrates and authorities had refused him redress. Here is part of a letter of his:—"My dear Dr Clouston, I have oftener than once heard of your welfare, which I hope will go on prosperously, *so* long as you are the true and faithful servant of God, though *no* further, as I told you. My state of *outrage* and *wrong* you know *well* or better than I do, for *all* to me is a complete mystery beyond *what* I do really know and have been compelled to *feel*. In *places* of this kind there is *so* much 'pantomime,' so I pay *no* attention to such nonsense. I have received no redress or improvement whatever!! What part

you have taken in the wrong I am suffering *you know*. There are and have been several nice vacancies, one of which will suit me, though any part of England, so as to be far off the atmosphere of *asylums* will suit me. I am in constant expectation of '*freedom*,' '*compensation*,' and a '*benefice*' of my own. I have merit and purity enough for a bishop,"—and so on for many pages of complaint and morbid suspicion. By the way, you will notice that he underlines much of his letter. The late Sir Robert Christison once said to me that he could usually tell a man who laboured under insane delusions by the way he unnecessarily underlined his letters.

Insane Jealousy.—The most painful of all the cases of delusions of suspicion are those where a husband becomes insanely jealous of his wife, or the wife of her husband, and is suspicious of conjugal fidelity without reason. After the full development of such a case it is easy to see that such suspicions are insane, by the exaggerated way they are put, and by the utter want of evidence; but at the beginning they are most difficult and unpleasant. I have now a lady in the Asylum, D. T. C., quiet in manner, ladylike, and almost rational, who showed her insanity first by going to her clergyman and making a confidential report to him that her husband had given her syphilis, and he was accordingly at once summoned for ecclesiastical censure by the kirk-session of his church. Being a sensitive, nervous man, this had an extraordinary effect on him. From being fond of his wife he suddenly conceived a hatred of her, believing that it was a deliberate plot to ruin him. Though other symptoms of insanity developed themselves in her, he never to his dying day could be made to believe that the syphilis delusion was any symptom of insanity on her part, but looked on it as simply wickedness. In her case the nature of her delusion seemed to be determined by the fact that she had a chronic uterine tumour, the uneasy sensations connected with which seemed to have suggested it. I was once sent for in great haste, as a gentleman, D. T. D., was said to be killing his wife. I found a

most respectable man, of first-rate business capacity, who had made a large fortune, and was still doing business, and who was reputed by the world at large to be perfectly sane, making the most outrageous allegations about his wife, and saying she had been unfaithful to him. I soon found that those accusations were of necessity insane delusions. He had seen her wink to scavengers as she passed them. He had met her just parted from a labouring man, with whom she had had connexion under a wall, &c. I have now in the Asylum two quiet, rational-looking men, whose chief delusion is that their wives, both women of undoubted good character, have been unfaithful to them. Keep them off that and they are rational. On that subject they are utterly delusional and insane. They, like most such cases, are incurable. The true physiological psychology of the married life has yet to be written. The unworthy travesty of it which Tolstoi presents in the *Kreutzer Sonata* is a brute, not a human psychology.

As an example of a perverted sensation or a local pain causing a delusion, I had once a gentleman patient, D. T. E., with disease of the rectum, who maintained that people came at night and committed sodomy.

It is not uncommon to find women of middle life with the combined delusions that certain men want to marry them, but that other people are preventing this. Clergymen are the most frequent objects of this very undesirable fancy. I have met with at least a dozen cases in all ranks of life of this kind. The subjects of it are usually not marriageable nor attractive-looking persons. I will show you a one-legged dressmaker of 40, D. T. F., with certainly no personal charms, who went to her clergyman and asked him to "proclaim" her and Mr —— in church. On inquiry, he found the gentleman to be proclaimed had never spoken to her. He sat opposite her in church, and she said he looked at her in such a significant way that she knew he wanted their banns proclaimed. D. T. F. said it was all owing to a scheming neighbour that she was not married to Mr ——.

A morbid feeling of fear is often associated with that of suspicion, especially in the cases that have arisen out of melancholia. I have a patient who is afraid, if I take out my handkerchief, that it means something evil towards herself, who is constantly saying—"Now, doctor, I know you are going to do something to me; what is it to be?"

It is common for patients with monomania of suspicion to conceal their delusions, except to intimate friends or near relations, for a long time, even for years, and when asked about them to deny that they believe them. We once had a gentleman in Morningside, D. T. G., who was full of morbid suspicions, believing that some of the people about him were other persons altogether, and that he was at times in danger of his life from poison. Yet for many years he never told those things to any person but one fellow-patient. Unlike the majority of such cases, he was to most persons a pleasant man; his social instincts were strong, he was fairly happy, going all about the country on fishing excursions, and enjoying a joke and good story immensely. Before his death, when his brain disease had advanced, he was not so reticent about his delusions. I have now two patients, D. T. H. and D. T. I., who on their first admissions I had to discharge because they denied their delusions so strenuously. In fact, D. T. H. was twice discharged for that reason. Yet they both laboured under insane suspicions, that the people in their houses and the streets annoyed them, and wanted to kill them. Whenever D. T. H. got a glass of whisky these delusions at once came out. On one occasion the second medical certificate for his admission could not be got, and he was tried before the Sheriff for threatening language. I had to say that I believed him to be insane, but that I had no proofs of it from himself. That was deemed sufficient, and he was committed to the Asylum. I have another patient who has been four times in an asylum, and while there has never uttered one insane suspicion, though full of such about his wife, and really dangerous to her.

Insane Silence.—There are cases of monomania not to be classified under those three headings. I have, for instance, a man in the Asylum, D. K. T., who for twenty-seven years has never spoken a word, but who I may say in most other respects behaves sanely, showing no symptoms of morbid pride or suspicion. He is about the best joiner we have. We know he has a delusion which prevents him speaking, but what it is we can't find out. If he wants instructions about his work he writes, but nothing will induce him to write why he won't speak. He has never been heard to make any laryngeal noise except once, when a fellow-patient scattered some tacks round his bed, and on stepping on "the business end" of one of those he cried "Oh!"

There are certain patients, too, who simply express delusions as to the identity of those about them, without any suspicious, fearful, or persecuted feeling (see D. O. A.'s letter, p. 257). There is indeed a great variety in the symptoms of those who labour under delusional insanity.

Proportion of Cases of Monomania.—At the close of the year 1881 there were 822 patients of all classes in the Royal Edinburgh Asylum, and of these 87 were cases of delusional insanity, viz., 35 of grandeur, 14 of unseen agency, and 38 of suspicion. Of the 87, 48 were men out of the 421 male patients, so that the proportion in the two sexes did not differ much. There were more cases of monomania of pride and grandeur among the women than among the men—20 to 15, while of suspicion there were 25 among the men to only 13 among the women. I found one marked phenomenon in the natural history of delusional insanity. Out of 120 patients of the higher classes socially, all with educated brains, and many of them of old families, there were 23 cases of monomania, or about one-fifth of the whole, while among the 554 pauper patients there were only 44 cases of this variety of mental disease, or only one-twelfth of the whole. The 158 private patients of lower social class were intermediate, and had 20 cases of monomania, or over one-seventh. It would

seem, therefore, that delusional insanity is most apt to occur in brains of the highest education.

Diagnosis of Monomania.—I had a woman sent into the Asylum lately, who told me she was the mother of God. We had no history of the case at all. There was no general exaltation, no excitement, and no depression apparent. Was not that a case of delusional insanity? Not in a correct use of the term, for the woman gradually passed into an attack of simple mania, ceasing to express this particular delusion after a few days. Therefore you must always take into account the fixedness of the delusion or the delusional state, and the time the patient has suffered from it. Many maniacal and melancholic patients begin by expressing a single delusion, or exhibiting a single delusional state, as the commencement of their general disease. I have met with plenty of cases, too, where, from the very sub-acuteness of the mania or the melancholia, the symptoms of general exaltation or depression were not very evident, and a delusion stood out as apparently the disease, and yet the patient soon recovered. And as patients are recovering from mania and melancholia they often exhibit delusional conditions for a long time after the general exaltation or depression has passed off. I had a patient who had an attack of acute mania lasting for three months, and after that, though quiet, industrious, and rational on most subjects, he believed his food was poisoned for twelve months. He then gradually ceased to believe his food was being poisoned, but he believed that it had been poisoned before for twelve months longer. I classify such a case as one of acute mania, not of monomania of suspicion. A recovered patient's belief in the reality of his former delusions is not at all uncommon. A man says: "No one annoys me now, but I was subjected to persecution at home, and when first I came into the Asylum." I should not keep a man in an asylum, or count him a monomaniac, or even necessarily reckon him as legally insane, merely because he believed in the reality of his former delusions, if he had ceased to believe in their present existence, any more than I

should count a man insane who could not get rid of the impression that the events of a dream had really taken place. The two chief things to be kept in mind in the diagnosis of monomania are :—1st, not to call any disease by that name that has not existed unaltered for at least twelve months; and 2nd, when there exists along with the delusional condition any general brain exaltation or excitement, or any general depression, not to call it by that name till those have passed off.

Origin of Monomania.—The question has been keenly discussed whether morbid emotion or faulty cognition initiates monomania. It is one impossible of determination. I believe the affective state is always disturbed in the disease, and commonly it is more disturbed at the beginning. I do not believe the false beliefs always *arise out* of the disturbed emotions, however. Looked at from the brain point of view, it arises in at least four different ways in different cases. 1st, It is a gradual evolution out of a natural disposition, a proud man becoming insanely and delusionally proud, a naturally suspicious man passing the sane borderland with his suspicions. From going over our cases I find about one-fourth of them arose in this way. It is the most common origin of the disease. There is usually a hereditary predisposition to insanity in those patients. The disposition may in fact be regarded as one effect of the nervous diathesis out of which the mental disease springs. 2nd, It remains as a permanent brain result and damage after attacks of mania and melancholia, especially the former, from which the patients recover up to a certain point but no further. This is the origin of about one-sixth of the cases. 3rd, It arises from alcoholic and syphilitic poisoning of the brain and body, from traumatic injuries of the brain, or sunstroke, or from gross lesions, such as embolic softenings. This seems to me to be its origin in about one-fifth of the cases. Such have usually the delusional insanity of suspicion or unseen agency. They are the most dangerous class of monomaniacs on the whole. 4th, Most of the remainder, comprising over one-third of the cases, seemed to me to arise either out of perverted

organic sensations caused by constitutional diseases characterised by lack of trophic power and brain anæmia, notably tuberculosis, or out of perverted sensations from local diseases misinterpreted by the brain, as in the woman with cancer of stomach. Any man with an anæmic ill-nourished brain is apt to be morbidly suspicious.[1]

Legal Importance of Insane Delusions.—Delusions are often of small clinical import, but they are always of the highest value as a test of insanity from the lawyer's point of view. Therefore I advise you to bring them in always, if they exist, in signing certificates of insanity, in medico-legal documents, and in giving evidence before courts of justice. But you must remember there are harmless and dangerous delusions; and if a delusion is obviously harmless, and does not bulk largely in the patient's life or greatly affect his conduct, the law scarcely recognises it as unsoundness of mind at all. It is quite impossible to distinguish scientifically between some vain or proud men, who dress and behave in an absurd manner, but do nothing needing interference with their liberty, and the man who thinks himself the son of George the Fourth, claims property that does not belong to him, and is therefore shut up in an asylum. There are plenty of persons doing their work in the world well, and yet they labour under monomania of pride or suspicion in a mild form. The now famous case of Mr Wyld, who held an important Government office, and did his work well all his life, and yet had laboured under the delusion of grandeur that he was a son of George the Fourth and left all his money to the town of Brighton because that monarch had been fond of that place, is one in point. He was held to be sane in everything he did but his will-making. I am constantly consulted by their friends about the insane delusions of persons who do not show them to anybody but

[1] This form of insanity has been treated of by recent French authors, notably Magnan, with extreme care. Dr John Macpherson in this country has studied it most exhaustively. Though I by no means concur in all the French views about it, they are worthy of careful study.

their near relations, and continue to do their work and occupy responsible positions. I now know in Scotland lawyers, doctors, clergymen, business men, and workmen, who labour under undoubted delusional insanity, and yet do their work about as well as if they had been quite sane, though they are not such pleasant people to have to do with, especially to their relatives, as they would have been if really sound in mind.

Treatment of Delusional Insanity.—At the beginning, when there is a chance of the delusions not being quite fixed, there are two indications for treatment. The first is change of scene, circumstances, company, and occupation, which can best be got by travelling about. The mind may be sometimes diverted from morbid tendencies in that way. And, while this is being done, the second indication should be carried out, which is to correct and cure bodily disorders, to treat constitutional diseases like tuberculosis and syphilis and anæmia by suitable means, and to remove every bodily cause of convolutional disturbance, to withdraw objects of suspicion, and to bring up to the highest possible mark the nervous and bodily tone. By this means there is no doubt that some cases, especially those characterised by morbid suspicion, can be cured, even after they have existed for years. I have even seen a marked case of monomania of grandeur get better. A man who for more than a year fancied himself the Duke of Kilmarnock got quite well, through improvement in his bodily health and working in the Asylum garden. Especially the alcoholic and syphilitic cases are hopeful at first. Potassium iodide acts like a charm in both kinds of cases at times. But for the confirmed monomaniacs of all sorts, who will insist on carrying out their ideas, an asylum is the only possible place of care. Dr Charles H. Skae cured a case of monomania of suspicion, caused through an injury to his head, by trephining.

Prognosis.—The prospect of recovery is certainly very bad in cases of delusional insanity that have lasted for over a year, but one is surprised sometimes by occasional recoveries after many years. There is a tendency to mental enfeeblement as

time goes on. Some cases end in complete dementia after a few years, and in most the intensity of the conviction of the delusion, and the aggressiveness with which it is put forward, tend to diminish as time goes on. Many monomaniacs live long, but the cases of morbid suspicion mostly die of phthisis.

Prophylaxis.—I think something can be done, in those who are predisposed towards delusional insanity by their nervous diathesis and hereditary predisposition to the neuroses or to consumption, or to both, towards counteracting the morbid disposition. While the reasoning power still holds its sway it may be used in deliberate attempts to reason a man out of his morbid tendencies. I think I have seen a man in this way, and by not allowing himself to dwell on morbid thoughts and feelings, keep in check a morbid disposition. Good principles and good habits of life help greatly in the same direction. Occupation may be helpful, too, in counteracting it. I have often seen monomania of suspicion arise out of a suspicious reserved temperament in young men through the thoughtless and cruel small persecutions and annoyances of fellow-clerks and fellow-workmen. It is from this exciting cause chiefly that hunchbacks and deformed persons are so often suspicious, irritable, and misanthropic, the predisposing cause, no doubt, being their developmental neurotic weakness. Human nature is not tender or considerate towards such weaknesses. I have seen a proud disposition become a monomania of pride through the injudicious pamperings and foolish adulation of female relations, and the encouragement of such a person in occupations and schemes beyond his capacity or means. No doubt temperate and systematic habits in all things are very prophylactic for the kind of brains I am now describing. I think I have seen cheerful family life cure a commencing delusion of suspicion. Association with their fellow-men is good for all persons predisposed in this way, provided they can get suitable company to associate with. To be suitable, it needs often to be opposite and complemental. In all

persons predisposed to delusional insanity the social instincts are apt to be rudimentary and need development. In some of those who show their morbid tendencies at an early period of life, they can be prevented, the brain being still plastic.

PARANOIA.

There has been of late years in Germany a decided tendency to discard the conditions of fixed and limited delusion, such as I have described, as a distinct form of mental disease, and to substitute for Monomania the term Paranoia, not as covering the same ground, but as including most cases of monomania, and some others that would have come under impulsive insanity, or under mild dementia, or even under simple mania. It is exceedingly difficult to define paranoia as the term is used in Germany, and now largely also in America. As yet it is clear that different authors understand by it different things, but taking the sense of the majority of them, I think the following may be accepted as a short description of the condition. It always occurs in persons in whose brains there is the potentiality of mental or nervous disease through hereditary predisposition to the psychoses or the neuroses. It is, in fact, a strongly hereditary insanity. It evolves slowly without an acute first stage. It consists, in fact, of a slowly developed change from the normal mental state of the individual, and most commonly in the direction of elevated ideas and exaggerated self-importance. Sometimes the change is towards morbid suspicion and sensitiveness, this often going with the elevated ideas. Sometimes the sexual instincts are changed or perverted, constituting the "sexual paranoiac" who has attracted such an amount of morbid attention in Germany. The conduct is always affected, but not necessarily at first taking the form of actually insane action. Queernesses, oddities, impracticability, insensibility to the motives which ordinarily influence humanity —

abnormal mental reaction, in fact. The reasoning power cannot correct obviously mistaken conclusions, and cannot be trusted in regard to any subject. The hereditary social instincts and the gregariousness which seem to be the chief factor of the solidarity of human society are weakened, and gradually become perverted. Hereditary morality, probably the strongest ethical force, is weak in its power over conduct, or assumes perverted and diseased shapes. The instincts, appetites, and propensities are disturbed or perverted. The affective nature is always changed. No paranoiac loves his wife, or his brethren, or his friends in the right and normal way. His affectiveness takes strange and often a-social forms, so that instead of holding together and upholding the family and the state, it is disruptive in its effects. The moral sanctions and the affective drawings of the paranoiac do not tend towards social cohesion, but destruction. The man of the "insane diathesis," as described by Maudsley, is a paranoiac in its early stage; later on he develops delusions, but not always fixed or organised delusions. He often commits crime, thinking it a virtue, as Guiteau did when he murdered President Garfield who had done him no harm whatever. Still later the paranoiac often sinks into mental enfeeblement, not of the complete kind, but often enough he lives out his life without thus mentally dying. King Louis II. of Bavaria[1] was a typical case of paranoia, all the symptoms of the disease being developed in exaggerated forms through his autocratic position and command of money, and brought out vividly through the "fierce light that beats upon a throne." In him there appeared to have been sexual perversion of the most abominable description. This unsavoury subject and all that relates to the pathological manifestations of the generative nisus have recently been very fully—far too fully, I take leave to say — treated by Krafft-Ebing and Schrenck-Notzing in Germany. In this country we rarely see such cases as are

[1] See Dr Ireland's study of him in his delightful series of *Studies in Psychology and History*—"Through the Ivory Gate."

described in such repulsive detail by those two authors, and I think it is better we should not look too closely for them. The whole subject of paranoia is allied to the "degeneracy" and the "hysteria" which Max Nordau so vividly describes as influencing our present-day[1] literature and art.

[1] *Degeneration*, by Max Nordau.

LECTURE VII.

STATES OF MENTAL ENFEEBLEMENT (*DEMENTIA, AMENTIA, PSYCHOPARESIS, CONGENITAL IMBECILITY, IDIOCY*).

Physiological weakness of mind; Childhood and Dotage—Weakness of mind in ordinary bodily diseases from Starvation, Exhaustion, extreme mental effort and tension, or emotional shocks—Definition of true Dementia; symptoms negative—Enfeeblement general, but not uniform, of all the faculties and mental powers—Originating mental power first and most markedly affected—No line of demarcation between Sane and Insane weakness of mind. VARIETIES—(*a*) *Secondary* (*Terminal*) *Dementia:* The most common, important, and characteristic Dementia of all; The natural termination of all Insanities, if recovery or death do not occur; acute Insanities tend most towards it, especially acutely maniacal states—S. Dementia. Pathologically considered weakened trophic and functional state of a delicate structure (originally unstable), commonly following morbid over-action—A typical case; clinical features; heredity; acute mania; non-recovery; changes in expression of face, of tastes, habits, volition, judgment; moral faculties; affective nature; memory; silliness; a mental death before the rest of the body dies—Re-education of brain; limits; bodily health often good; long life—(*Varieties*) *Things tending to Dementia:* (1) Occurrence of primary attack during adolescence; (2) long duration of attack; (3) acuteness; (4) many previous attacks; (5) heredity very strong. If 1, 2, and 5 are all present, risk very great. *Treatment*—Dementia in rare cases comes on gradually without acute insanity or other known exciting cause. Milder forms of mental weakness, mental "twists," and changes, often follow attacks of insanity and apparent recovery—Temporary states resembling Dementia and Stupor that are recovered from after acute attacks of mania—(*b*) *Primary Dementia:* Congenital Imbecility, Idiocy, Amentia, Cretinism. Ireland's classification—Genetous Idiocy, Eclampsic I., Epileptic I., Paralytic I., Inflammatory I., Traumatic I., Microcephalic I., Hydrocephalic I., Idiocy by Deprivation,

Cretinism—(*c*) *Senile Dementia:* Kinship of this to Secondary Dementia. *Special Characteristics:* Irritability; loss of memory; sometimes follows *Senile Mania* and *Senile Melancholia*—(*d*) *Organic Dementia:* Results from Softenings, Apoplexies, Tumours, and such gross Brain lesions—(*e*) *Alcoholic Dementia:* The judging faculties, the emotions, the volition, but especially the memory, weakened by continuous alcoholic poisoning, commonly with irritability.

We use the term "mental enfeeblement," not in its wide and popular sense, meaning any mental weakness or disease whatever, but in a special and scientific sense. It may be defined as "a general weakening of the mental power, comprising usually a lack of reasoning capacity, a diminution of feeling, a lessened volitional and inhibitory power, a failure of memory, and a want of attention, interest, and curiosity in a person who had those mental qualities and has lost them, or has come to the age to have them and they have not been developed." There are two great physiological periods of mental enfeeblement, viz., in childhood and old age. Consider the condition of a child of two as to reasoning power. There are many words indicating a lack of mental power that have two meanings, a pleasant or an unpleasant one, according as they are used in reference to a child whose mindlessness is physiological or to a man in whom it is morbid. What more charming than "prattle," "artlessness," "childishness," "innocence," as applied to a child? But, said of a man, they mean "chatter," "silliness," "lack of sense," or "a want." If the brain development is arrested before birth or in childhood we have congenital imbecility and idiocy—amentia. Dotage must be reckoned as natural at the end of life. It is not actually the same as senile dementia, but there is no scientific difference. Mental enfeeblement, both in judgment, feeling, memory, and volition, frequently occurs in and after bodily diseases, especially after fevers. It always occurs in the process of death by starvation. It frequently is seen after the exhaustion of long journeys, great exertions, severe campaigns, and great mental tension, strains, or efforts, such as business crises, sieges, &c. It sometimes occurs after

sudden or great emotional shocks, such as loss of children. Now, in all these cases the actual psychological condition may be the very same as in patients labouring under mental disease proper, or technical insanity. Yet we do not practically reckon them in that category except they are unusually severe or very lasting. The student of brain function and medical psychology, as well as the practical physician, finds a study and comparison of those conditions of mental enfeeblement most profitable.

Degrees of Enfeeblement.—The conditions of mental enfeeblement that are ordinarily reckoned among mental diseases may exist in every possible degree, from the merest dulling of the keen edge of certain mental and moral faculties up to complete loss of intelligence, feeling, and memory. One man may be just so much altered that his friends say—"He is not the same man he once was," and another may not be able to comprehend or answer the simplest questions or to recollect his own name. A clever man may be left in such a condition that in his slight dementia he is more intelligent than another stupid man. A man may, while he is not energising mentally, seem as other men are, or as he once was, but, when he comes to think, or act, or work, it is seen that he cannot do so as before. In most cases all the mental faculties are enfeebled together, either equally, or one suffering more and another less. In a few cases some mental faculties are left almost intact, while others are almost destroyed. I have a patient now whose brain was once a very energetic and subtle one and his memory extraordinarily retentive, who talks quite rationally on all kinds of subjects if they are suggested to him or if you "draw him out," and who argues most correctly, but who never originates anything, is utterly helpless in action, and who cannot tell you the day of the week or what he had for breakfast; this condition being the result—a common one—of many years of alcoholic excess. The originating power of mind, spontaneity of thought and feeling, active vigour of will, that highest quality of all, are always diminished or lost in dementia. I know a

man who when well always impressed those with whom he came in contact as being a leader of men, and who now, after an attack of mania, has lost the power of producing that impression. As one of his friends said to me—"I was always afraid of Mr ——, and never could be familiar with him. Now that's gone." Pathologically and psychologically the mental state of such a man is the same in kind, if not in degree, as the absolute dement of asylums. Yet, of course, the degree makes a great difference from a legal and social point of view. One man's mind may be slightly weakened and yet he may enjoy his personal freedom, and another man who is a little more affected has to be deprived of this; but there is no line of demarcation, and no test to distinguish between technical sanity and technical insanity in dementia.

It must be remembered that in all insanity there is an element—often a strong one—of mental enfeeblement pure and simple. Most cases of exaltation have enfeeblement of judging power as well as of feeling. Many cases of melancholia are enfeebled as well as depressed. It is the prevailing morbid condition that determines the name we give the disease.

A typical case of complete dementia is one affected as this young man, E. A., is. As he came into the room his walk was hesitating, almost shuffling, and you see his bodily attitude is one of diminished muscular and nervous vigour. He stoops, his face is vacant-looking, he has no curiosity as to where he is coming, or as to what I am saying about him; when I ask him his name he tells it, but cannot tell the day, or month, or year. In asking him questions, I have to adopt means, by speaking loud and sharply, or by patting his arm, to rouse his attention to listen to me. His mental operations are slow as well as weak, for it takes his brain long apparently to take up impressions from the senses, and still longer to evolve the outward process of speech in response, his mental reaction-time being, in fact, very much prolonged. When I ask him, "Where were you born?" he says, after a minute, "Oh yes, I

think so." When I ask him "Who is that?" pointing to a student, "That's my Uncle John." "What place is this you are living in?" "I don't know." "Did you ever ask any one what place it was?" "Yes." "Are you sure?" "No." "How long have you been here?" "This morning." (He has been here six years.) He cannot reason, he has almost no affections, caring for no one, showing no pleasure in seeing his relations. He has no wishes, hopes, or fears, and little memory; ambition, joy, and sorrow are dead to him. He does not resist anything, and has no choice as between any two things. He has no fineness of feeling, no "tastes." His habits would become dirty and degraded if not looked after. Looked at from the purely bodily point of view, he has no keen appetite at all, even for food, for he has been several times forgotten in the garden over meal times, and hunger did not bring him to dinner. He has no proper sexual appetite, though he masturbates in an automatic way. His temperature is about a degree and a half below the normal, his circulation poor, his hands blue and cold in chilly weather, his muscles flabby, his common sensibility much diminished, for you see pricking with a pin does not rouse him much. His digestion and the action of the bowels are good and regular, and the sleep power of his brain is perfect, in fact he would sleep too long if allowed to. There is a good deal of flabby fat on his body. Sores are slow in healing, and when he catches cold he scarcely ever coughs, though there may be much bronchial catarrh. The reflex action of the cord is diminished, though the tendon reflex is normal. Last of all, that power of action and power of co-ordination of those marvellously innervated strands of muscles in the face that give "expression" to the face seem to be utterly dulled and diminished, and the eyes are also expressionless. It is clear that all the highest qualities of his brain are gone, and that even the lower qualities are much enfeebled. He is now demented; but he was once an intelligent educated man, who had an attack of acute mania, and was left, after that had passed away, as you see him.

There are five chief kinds of dementia :—

1. *Secondary* (*Ordinary* or *Sequential* or *Terminal*) *Dementia*, following mania and melancholia or other insanity.

2. *Primary Enfeeblement* (*Congenital Imbecility*, *Idiocy*, *Amentia*, *Cretinism*), the result of arrested brain development, or of brain disease in early life.

3. *Senile Dementia.*

4. *Organic Dementia*, the result of gross organic brain disease.

5. *Alcoholic* or *Drug Dementia*, following the long continued excessive use of alcohol, or of neurotic drugs such as opium, cocaine, chloral, &c. As the last three varieties will be described under the headings of the senile, paralytic, and alcoholic insanities, I shall not further refer to them here.

I have purposely omitted a variety which you will find in all the text-books—"Acute" or "Primary" Dementia—because I think this is a misnomer, and leads to much confusion, besides being an unscientific nosology. I prefer to classify "Primary Dementia" under *Stupor*.

As every variety of real dementia is incurable, and as the medical profession outside of public institutions has little to do with its treatment, I shall devote little time to it.

Secondary Dementia.—This always follows, and is in a way "the result of" more acute mental disease, such as mania and melancholia, and therefore may be called sequential. It is the most characteristic, and the most interesting to the psychiatrist of all the forms of mental enfeeblement, so that when you hear of a person labouring under dementia it is usually this that is meant. It is dementia *par excellence*, therefore. It is the goal of nearly all insanities that are not recovered from.

When any condition of morbid mental exaltation, especially acute mania, has existed for a long time, we find that the over-action usually causes a tendency to mental weakness as the exaltation passes away, and this in some cases is left as a permanent brain condition. This is dementia. The same tend-

ency is seen, but to a less degree, as the result of a prolonged condition of mental depression. This is the termination we most of all dread in acute insanity. All mental diseases when long continued tend towards dementia. When the matter is looked at pathogenetically it might be thus stated. For the production of most cases of mental disease we need a morbid neurotic heredity, or prolonged causes of irritation or exhaustion. Then comes an exciting cause of disturbance from without or from within, mental or bodily, strong enough to convert this tendency, this potentiality into an actual disease; or this occurs in the ordinary course of the development, evolution, or dissolution of a hereditarily weak brain, and a severe outburst of abnormal action occurs in the brain convolutions. The chief symptoms of this are the maniacal exaltation or the melancholic depression. The abnormal action means abnormal nutrition as well as abnormal energising. This abnormal nutrition tends injuriously to affect the minute and delicate neurine structure, the capillaries, the lymphatics and the packing tissue of the grey matter of the convolutions. It even affects, as we have seen, the structure of the surroundings of the brain,—the pia mater, the large vessels, the arachnoid, the cerebro-spinal fluid, the epithelium, the dura mater, and the calvarium. When this storm of morbid action at last passes off or exhausts itself, the neurons in some cases have become so damaged that they are no longer fit to become the vehicles of normal mentalisation—their nutritive, their storage of energy, their receptive, their constructive, and their productive power being impaired, metabolism, anabolism, and katabolism being all abnormal in them. Dr Macphail has shown that the constitution[1] of the blood is altered in dementia. The mental result of all this is enfeeblement or dementia. Somewhat analogous damage to function occurs in coarser forms in all the coarser tissues and organs, *e.g.*, the permanent damage to locomotion that results from long-continued rheumatic inflammation of a joint, to digestion from

[1] *Jour. Ment. Sci.*, Oct. 1884.

prolonged over-stimulation of the stomach, to sight from the intense lights of the desert or the Alps, to hearing from the continuous clang in an iron shipbuilding yard. You must always remember, however, that from the very beginning there was probably a tendency through a bad heredity towards that weakening of the mental functions of the brain which we call dementia, towards mental death in fact; and there are many cases where the previous excitement was so slight or so short that we must conclude that the essential nature of the mental disease was the tendency to dementia from the beginning. And it is useful also to keep in mind that there are brains of such quality that they may have repeated attacks of acute excitement yet never sink into enfeeblement.

The following is another typical case of secondary dementia: —E. B., a handsome, well-developed, intelligent, well-educated young woman, whose mother was insane, her sister a woman that "no one could live with," and a brother a confirmed drunkard, had, at the age of twenty-four, a cross in a love affair. At first she was depressed in spirits for a few months, then she took to a morbid eccentric religionism, and in six months became acutely maniacal. She remained so for a year. At the end of that time her whole appearance and expression of face were so different from the attractive girl she had been that her friends scarcely recognised her to be the same person. Her face, that "mirror of the soul," expressed no doubt the fancies and the passions that were evolved in her morbid brain, but there was also a vacancy and a physiological degradation very manifest. About that time she began to sleep better, then to eat better, then to talk and scream less, then to be able to sit still longer and control herself more. This process of gradual quiescence went on for six months, with occasional spurts of exaltation and short relapses into active mania. By that time she was getting fat, sluggish, devoid of interest in anything, and with no emotion. She did not ask for those who had been dearest to her, or exhibit any pleasure when they came to see her. She often laughed and talked

to herself. Her speech and conduct were best described as very "silly." Her memory seemed gone. All that education had done for her brain seemed to have disappeared, or could only be brought out in disjointed incoherent scraps. The nameless charms of dress and manner and behaviour of a bright young lady had absolutely disappeared. She was slovenly and not over cleanly, showed few likes or dislikes, and no will of her own. Her face was vacant, her eyes expressionless, her motions slow and wanting in purpose and vigour, and her nutrition flabby. She slept well, she ate very well but with little choice of foods, her digestion was good, her bowels regular, and her menstruation, which had ceased during the whole of the maniacal period, became regular. She is in fact dead to mental life in any proper sense, and so has remained now for many years, and so will remain till she dies of some disease that will not necessarily be a brain disease at all. Her chances of life are probably below those of a sane person at her age, but she may live long. These are the cases that form the bulk of the old inmates of asylums, and about whom their friends say they seem to outlive all their sane relations and friends, because they are free from the worries and cares of life, and live a regulated existence under medical rule.

In certain things E. B. did improve after the first two years. Her brain was subjected to a re-education of a simple kind, but its capacity for this was limited. It had no power of acquiring any sort of high attainment in anything. She was taught to dress herself more neatly, to do a little simple work, to observe certain hours for meals, &c. Curiously enough certain mechanical achievements in which she had been well educated, so that they had become the automatic property of the motor brain centres, came back to her easily, and were well done. Such were certain kinds of ladies' work and sewing. It was found she could play some of her old tunes on the piano, but the music was mechanical. All the life and soul was out of it. She could not be taught the simplest of

new tunes, no new stitching, no new dance steps. Every now and again she has a slight return of the maniacal exaltation, beginning usually at a menstrual period, and at the very beginning of one of these she will look and act more like her sane self than at any other time. She is placed under the control of social inferiors, and she does not resist. She lives in the Asylum, and she does not ask why. She has no money, and she does not seek it. She forms no attachment, and she associates with strangers without feeling it.

Varieties.—This is the type of all the cases of secondary dementia in its causes and symptoms. But there is, of course, great variety in the details of the clinical pictures. Attacks of melancholia may be followed by dementia, but this is not nearly so common as in the case of mania, except in certain senile cases. Nothing more conclusively shows that conditions of depression are essentially less profound departures from mental heath than conditions of exaltation, than the lesser tendency to dementia after the former. When it does occur it is a less complete dementia than occurs after mania, and is nearly always tinged with a melancholic cast. Out of 100 cases of dementia taken at random, whose histories I know, only 20 followed melancholia. All sorts of partial dementia occur. I have many patients in the Asylum who look like other people, who converse with you rationally when you talk with them, and have no delusion, but they have no initiative, no originating power, no active desires, no power of self-guidance or resistive capacity. I sent such a man out of the Asylum lately, and he just sat down at home, would not work, would scarcely get out of bed, cared nothing for cleanliness and the decencies of life, and only earned ten shillings the six months he was out. Some persons in this state do some work in the world outside under suitable, interested, and kindly guidance. Sometimes a man is left after a maniacal attack mentally twisted, or has a curious mixture of enfeeblement and obstinacy. I know a gentleman who once had an attack of mania, and who now shows a mild dementia chiefly in either defying or being un-

conscious of the conventionalities of life. He goes about the streets often in a dressing-gown and slippers, he pays no deference whatever to ladies, he eats at irregular hours, is "never to be depended upon" in anything, and yet he manages his affairs and seems happy in a way. In some cases a man shows mild dementia by slight degradations in his habits and feelings. I know such a man who is simply not so sensitive as he once was, not so particular in small things, is content with worse-fitting clothes, and is not so neat and clean in his ways. I know another case where it shows itself by what his friends call excessive laziness. He will not walk or work, or do anything, in fact, but sit in the house and smoke. I know many cases where it shows itself in deficient inhibitory power over the appetites, the patients taking to drinking and sexual immorality. Indeed one might say that the "moral faculties"—if by these are meant the combined feeling of repugnance to what is wrong and the power to avoid it—are the first to be affected in dementia. Such high moral attributes being the last to appear in the evolution of man, are, as Dr Savage rightly puts it, the first to disappear in certain morbid mental states. In other cases the patients simply sink into a lower social stratum, and evidently are more happy there than in their own. Such cases are commonly reckoned as being examples of mere eccentricity, but they are scientifically cases of partial or limited enfeeblement of mind.

Things that are of the greatest importance in relation to secondary dementia.—

1. The period of life during which the primary attack of mania or melancholia occurs is, in my opinion, of primary importance. Much more than half of all the terminal dementia follows the insanity of adolescence.

2. The risk of dementia is in certain cases in direct ratio to the length of the maniacal exaltation. This does not quite apply to melancholic depression, the existence of which for long periods is not so damaging to convolution function. Beyond a doubt there are some cases that become demented

after only a few weeks of maniacal excitement, when in fact it is clear that the tendency to it was present from the beginning, and when it was an inevitable doom of their brains. These are the brains which seem to have innate energising power in them to last only for so many years, and then they fail and die as to their higher mental functions. Of course, it may be asked, How do we know that this is not the case in all those that become demented, without reference to the preceding mania at all? May not the mania simply be one incident on the road to mindlessness, and not the cause of the latter at all? I am convinced this is so in many cases, but the facts of a great number of cases make one conclude that a maniacal attack does tend to damage the brain convolutions, and that the longer it lasts the more likely is that damage to be permanent. There are exceptional cases, however, that are maniacal for years and yet recover.

3. The character of the primary attack influences the tendency to dementia as well as its duration. The more acute the attack the greater tendency there is to subsequent mental enfeeblement. But to this rule there are many exceptions. I have now a case, quite demented, where the primary maniacal attack was very mild,—only amounting to simple mania, and that lasting but for a month or so. Then enfeeblement showed itself, and slowly progressed, till in four years there was deep dementia. I have even seen a few cases where a mental enfeeblement began *ab initio* without mania, without melancholia, without gross organic disease or epilepsy or alcoholism. Such cases are very rare indeed, however, but of profound interest. We can usually get evidence of some symptoms of mania or melancholia if we have the means of ascertaining correctly the patient's state. The habit of masturbation may cause dementia as a primary mental disease in young people with a strong neurotic heredity, without preliminary mania, and the continuous abuse of alcohol or nervine stimulants or sedatives may have the same effect.

4. The number of previous attacks is no doubt of much

importance in the preliminary history of dementia, except in the case of those typical examples of alternating insanity called *folie circulaire* which I have described. The case of D. B. (p. 229), whose brain had over two hundred attacks of acute maniacal excitement in forty years, and yet did not become wholly demented, was a most striking example of the recuperative power of the brain cortex. Speaking generally, the tendency to dementia increases in each successive attack. The relapsing tendency of adolescent insanity is to my mind an illustration of the two inherent tendencies in such brains, —the one to mental recovery and life, the other to mental death. And we notice that the sooner the relapsing tendency stops the more likely is the former result to occur. It often happens that after a first attack of insanity certain mental peculiarities are left, seen it may be only by the patient's near relations and intimate friends. He is not "quite the same man." Each succeeding attack that he has leaves him with more marked peculiarities or weaknesses, until the final irreparable breakdown of dementia is reached. You will constantly be asked your opinion of a man who has once been insane, to hold appointments, to accept trusts, to contract marriage, &c. One must frequently give a guarded answer, and this not only after a personal examination, but after minute inquiry from disinterested friends who have seen most of him. I find it often more difficult to pronounce a man sane than to pronounce him insane. There is no doubt that a man may fully and perfectly recover from attacks of insanity. They may leave not a trace behind them in any shape or form. I could point to hundreds of men and women who have been insane, and who now do their work as well as ever they did. It is a grave injustice to regard all men who have been insane as tainted and unfit to hold appointments of trust, though this is unfortunately a common prejudice. There is a risk, no doubt, but it would be indeed a terrible thing if mental diseases were regarded as necessarily implying an incurable mental deficiency or a relapse some day.

5. The next element that affects the occurrence of dementia, and that we have to take into account, is the heredity of the patient. The common opinion undoubtedly is, both among the profession and general public, that a strong family predisposition to insanity means a bad chance of recovery in any particular attack,—in other words, a tendency to dementia. Now this is not true as a matter of fact. Strongly hereditary cases are the most curable of all, but they are most liable to recur; though many of them are undoubtedly incurable from the beginning. A strong and direct heredity implies four things—(*a*) instability of brain, (*b*) liability to attacks at early ages, (*c*) liability to a recurrence after cure, and (*d*) typical dementia in many of the cases after one or more attacks especially in the adolescent cases.

6. There is a state of mental weakness, that frequently follows sharp attacks of mania and melancholia, which closely resembles dementia, and yet is quite curable. It is in reality a mild form of "secondary stupor," and I shall treat it under that heading. It is analogous to the stage of temporary exhaustion and reaction that follows many acute diseases. It is the period of functional rest but trophic activity, during which, through the *vis medicatrix naturæ*, organs that have been diseased heal, tissues whose nutrition has been disturbed eliminate morbid elements and become normal, and functions that have been altered or suspended resume slowly their activity. This period is of the highest importance for treatment.

Treatment of Dementia.—Regulated activity, nutritives, tonics, sometimes stimulants, and counter-irritants are indicated in the early stage. It is the time for the use of the stimulating nerve tonics and vaso-motor stimulants, such as strychnine, quinine, iron, phosphorus, the phosphates and hypophosphites, shower baths, friction to skin, the interrupted and continued currents, Turkish baths followed by brisk shampooing, and blisters to the back of the head. I have a man who had become dull, stupid, and lethargic after an

attack of acute mania, "wakened up" visibly under such treatment. I had a young woman who had ceased to speak, rouse up and begin talking and working immediately after a blister had been applied to the back of her head. I had a man who roused up, not only in mind but in muscular activity and in vaso-motor force, his hands getting warm instead of blue, under the use of Parrish's syrup. This was stopped in a fortnight and he at once fell back. It was renewed and he picked up, and again stopped and he fell back. It was given continuously for three months till he recovered completely. The use of thyroid extract, given in large doses, as recommended by Dr Lewis Bruce, is of extraordinary efficacy in some cases for preventing the occurrence of dementia. I now am never satisfied that all has been done in any case threatened with dementia till a course of thyroid has been tried. When dementia is confirmed, a regulated physiological life, control, order, system, cleanliness, exercise, suitable employments and amusements, tend to prevent further deterioration. Mental and moral stimuli, careful mental nursing and rousing interest in work, &c., all come in as effectual treatment.

After a very careful study of dementia in all its relations, I have come to the following conclusions:[1]—

1. Normal brain cortex differs enormously in different individuals in its inherent qualities and potentialities, these differences being, as far as our present knowledge goes, "functional."

2. The strongest clinical and psychological connection of every form of mental disease is the tendency to end in dementia.

3. Dementia being a virtual death of the higher mental powers, all insanities, therefore, may in the end mean mind death and social death.

4. Dements constitute two-thirds of our insane population.

5. Forty out of every hundred of all new cases of asylum

[1] "Secondary Dementia," *Jour. Ment. Sci.*, Oct. 1888.

insanity soon pass into secondary dementia pure and simple, or mixed up with maniacal or delusional conditions.

6. The functional change that takes place in the brain cortex in secondary dementia is primarily and chiefly confined to the mind tissue, and is, in fact, a unique disease in nature with no strict pathological analogies.

7. The problem of what secondary dementia means and how it can be averted is the cardinal problem of psychiatry.

8. Mental disease might even be defined as "a tendency to dementia."

9. The constant association with dements alone tends to lower the mental tone of the sane by the well-known law of the action of mind on mind.

10. Secondary dementia has as yet no sufficient pathological explanation, but recent researches point to cortical cell degeneration, chromatolysis, and atrophy of dendrites with a great diminution in the number of cortical neurons (Plates XV. fig. 10, and XVI. to XIX).

11. It may be looked on as a reversion of type, as a premature functional death of the mind tissue, or as a beneficial result of the laws that bring a bad stock to an end.

12. Real secondary dementia may be so closely imitated by secondary stupor that only time and the effects of treatment can distinguish them. We may look on the primary maniacal attack as threatened dementia, and the secondary stupor as being that threat partly carried into execution.

13. We have no reason to think that a brain which has a perfectly sound heredity can by any series of bad conditions be made to pass into typical secondary dementia.

14. The impressions through the senses from the outer world do not stimulate normally the mental cortex of a dement, though if the stimulant is very strong a certain response is obtained.

15. Dementia cannot be looked on as entirely caused by the damage done to the mind tissue through the primary acute disturbance, for it sometimes occurs without an acute

primary stage, and its occurrence bears no *definite* relationship to the intensity or the duration of the primary attacks.

16. Most of the cases of chronic and delusional mania have also some amount of dementia supperadded.

17. The pathological appearances, naked eye and microscopic, found in the brain cortex in long-continued cases of dementia are capable of possible explanation on the theory of the degeneration and atrophy of long disused tissue; but more probably they are the advanced stage of the pathological condition, which is the real cause of the dementia, but which in its early stage we cannot as yet recognise.

18. No merely vascular theory of dementia is tenable.

19. Typical secondary dementia always has a neurotic heredity, and its genesis can often be traced through the stages of mental hyper-activity, hyper-æsthesia, diminished inhibition, instability, melancholia, mania, and alternation in different generations, or in members of the same generation affected in different degrees.

20. Pure and uncomplicated secondary dementia does not readily supervene on the insanities that occur after full development and before the period of decadence, such as puerperal and lactational insanities, or those resulting from overwork or emotional causes at that age.

21. Melancholic and alternating insanities, delusional and inhibitory insanities are not the preliminary stages of secondary dementia nearly so frequently as maniacal attacks.

22. Most of the pure and typical cases of secondary dementia will be found to have originated in the developmental—pubescent and adolescent—insanities.

23. Masturbation may be an element in the production of secondary dementia in some cases, but it is not a necessary or a constant cause.

24. Idiocy and congenital imbecility represent nature's mental failures during brain growth, while secondary dementia is the typical failure during development of brain function after full brain weight has been attained.

25. Pure secondary adolescent dementia means that the organism has failed in its most highly organised structure and in its most important function just at the point before full reproductive perfection should have naturally been reached.

26. Undue and unphysiological stimulus through a forcing-house mode of education during adolescence without regard to the hereditary capacity and weaknesses of the organism may tend towards dementia.

27. The constant changes in each generation of modern civilised life in the adaptation of the human organism to its environments and the special efforts thus rendered necessary by the struggle for existence tend towards dementia through the strain they put on the mind tissue—the most delicate of all organised tissues—in hereditarily predisposed subjects.

28. Adolescent insanity ending in secondary dementia may be regarded as the most "typical" form of mental disease.

29. Dementia would have seemed, but is not, a more natural sequence, of the insanities of decadence—climacteric and senile—than of any others, for in them it would be a mere anticipation of the reproductive and mental death that has physiologically begun.

30. The lower animals, while subject to attacks analogous to melancholia and mania, are not subject to any state corresponding to secondary dementia before the senile period.

31. By prophylaxis in some cases, and by right treatment of the primary attack in others, dementia may be averted, but in many cases it is inevitable through the bad heredity of the individual.

Primary Enfeeblement (*Idiocy, Congenital Imbecility, Amentia*).—I do not propose to say much about primary mental enfeeblement, but rather to glance at a few of the most typical varieties. Ireland's[1] definition is that "idiocy is mental deficiency or extreme stupidity, depending upon malnutrition or disease of the nervous centres occurring either

[1] *The Mental Affections of Children, Idiocy, Imbecility, and Insanity*, by W. W. Ireland, M.D., 1898.

before birth or before the evolution of the mental faculties in childhood." "Imbecility is generally used to denote a less decided degree of mental incapacity." In short, idiocy and imbecility are conditions of mental enfeeblement resulting from arrested brain development before birth or in very early childhood. The mental faculties were never there, their organ being unfit to manifest them. In dementia, as we have seen, they were destroyed or enfeebled in a previously normal individual. It is well to bear in mind certain things in regard to idiocy. 1. That there are great varieties of the condition, both as to symptoms, causes, treatment, educability, and prognosis. 2. That the mental deficiency is always accompanied by bodily weakness of some sort,—trophic, resistive, and motor,—which can often be treated with good effect by the ordinary resources of our profession. This is well proved by this fact, that two-thirds of the cases die of tuberculous affections. 3. That by heredity and pathological connection it is apt to be associated with scrofula, tuberculosis, drunkenness, insanity, and crime. 4. That the main instruments of treatment must be a general bodily and mental education of a special kind, adapted to the physiological educability and potentialities of the individual brain under treatment, with often special conditions of diet, clothing, control, and modes of life. This can usually be best attained in a special institution.

Congenital Imbecility.—This may exist in every degree, from the smallest amount of mental weakness down to idiocy. *Here is a fairly common case:—*

E. C., now 25, of a family in which both drunkenness and insanity had occurred. When a child he was well developed, and apparently like other children, till he was about three or four years of age, when it was noticed that he was not so bright, not so imitative, and not so observant as a child at that age should be. Speech was long in coming and difficult to learn. As he grew older he could learn almost nothing at school; his school-fellows annoyed him, and he showed un-

governable passion and violence. The faculty of inhibition is almost always weak in imbeciles, but they are not all passionate or ungovernable. At puberty he got much more difficult to manage at home, and all his weaknesses and peculiarities were thus more observable. Unfortunately he was not sent to a special institution or home for the training of imbeciles. He could then have been taught much more than he now knows. In fact, I see no reason why he should not have learned some trade or mechanical work, and done it in a sort of way. He got so irritable, and, when in a passion, so violent, that he had to be sent here about twenty-nine years ago. He has settled down into the life and routine of the place, is cleanly, tidy, and orderly in his habits, industrious in simple matters, such as bed-making, floor-washing, but is still very passionate and impulsive. He is happy and contented, and has no unfulfilled ambitions nor longings to satisfy. Look at him. He is fairly developed, but his hard palate is narrow and V-shaped (see Plate XI.). At ten yards' distance you would say he was an ordinary-looking young man. When you observe him closely you see there is a weakness in his expression of face, a lack of mind in his eye, and a sort of shuffle in his walk, while all his movements lack purpose and conciseness. When he smiles he looks silly, and his speech is rather defective. You see at once there is no force in him of any sort, motor or mental. When further tested, his memory is seen to be defective, he cannot tell you how much four added to four and two off is. He can write, but like a schoolboy. You see that he is unfit to guide himself, to manage his affairs, to earn unaided his livelihood, or to resist any sort of temptation put in his way. He is in good bodily health, eats and sleeps well, enjoys simple pleasures like dancing, concerts, and jugglers' entertainments, and may live long.

E. C. is a good type of the most common form of congenital imbecile. There are others where one has much more difficulty in determining whether they shall enjoy civil rights and liberty, be allowed to marry, &c., being very

near the minimum legally sane line. Such persons often become the dupes of designing people, cannot resist temptation or control natural desires, and so are the worst kind of dipsomaniacs. Some imbeciles show special talent in certain directions,—some in music, some in drawing, some in imitation, some in a kind of constructiveness; some, who are of the criminal class, are bad and depraved from the beginning —are born imbecile criminals. As to treatment, the great things are, carefully to develop the body, to keep it always fat, not to give much animal food or stimulating diet, especially at puberty, to train in good habits—bodily, mental, and moral,—to make their lives systematic and orderly, to avoid occasions of ill-temper, to punish justly, usually by deprivation of indulgences, to send to institutions for training and not to ordinary lunatic asylums till this is unavoidable.

We find all sorts of bodily malformations, asymmetries, dwarfishness, and ugliness among congenital imbeciles, these all being developmental.[1]

Congenital imbeciles may have attacks of maniacal excitement or melancholic depression—in fact, are subject to them. They may become impulsive, dangerous, and even homicidal; they may, after an attack, have secondary stupor, or may become demented as compared with their primitive condition. They are often terrible masturbators.

Idiocy.—I find the most useful classification of idiocy is that of Dr Ireland, viz.: — 1, Genetous; 2, eclampsic; 3, epileptic; 4, paralytic; 5, inflammatory; 6, traumatic; 7, microcephalic; 8, hydrocephalic; 9, by deprivation of the senses; and 10, cretinism.

Genetous idiocy is that variety that begins before birth. E. D. is a very unfavourable case. She is now twenty-six, and never showed any mental potentiality at all from the beginning. She showed no affection, no clinging to any one in particular, not even like that of a dog to those who fed her and were kind to her. She has never had any

[1] *Vide* Author's *Neuroses of Development.*

understanding of anything, never could speak, always grunted in that animal-like way you hear, never showed curiosity, imitativeness, nor power of attention. You see her body is squat and ugly, her temperature low, her palate deformed, high, and V-shaped, and her teeth irregular and few in number. She has from childhood beaten her head with her hands, as you see her now doing, just as the gorillas beat their breasts in the African woods. Her face is utterly unhuman, hence such cases have been called *theroid* or beast-like. The evolutionists would find many proofs of reversion to conditions common in the lower animals in her. When you place a tumbler of water on the floor before her, you see she kneels down and laps it with her tongue. She has not a rudimentary sense of decency or sexual propriety. Such a case is beyond the reach of teaching or training of any sort. Nothing can be done but to feed and clothe her and keep her clean.

The next case of E. E. is a much more hopeful subject. He too is a genetous idiot, and is small, ill-developed, rather deformed, bandy-legged, cold, feeble in muscle and trophic power, but he in a way understands some things you say to him, is always smiling, is gentle, has been taught to be cleanly and almost tidy. He has no sexual feelings, cannot read nor write nor count, and will probably die of consumption.

There is a distinct and interesting variety of genetous idiots called "Kalmuck," having oblique eyes, small round heads, no occipital protuberances, and large deeply scored tongues.

The genetous variety forms the largest class of idiots, varies greatly in the mental capacity present, and many of them can be trained in training schools, and made more human and comfortable.

The *eclampsic idiots* are those whose brains have been injured and their development afterwards retarded by convulsions at dentition. They are an unfavourable class as regards training. The damage done to the brain and its envelopes is usually demonstrable after death.

I produce before you a whole series of *epileptic idiots.* Their characteristics are — 1*st*, that they vary in mental condition very much according to whether they are taking fits or not at the time; and, 2*nd*, that the effect of the constant recurrence of the epileptic seizures is such on the brain that it tends to lose the effects of training and to deteriorate.

Take this example of E. F., now 16, who has taken fits since he was a year old. At times he is gentle and teachable, and works in the garden, and enjoys life; then he will have a few epileptic fits, and he will be stupid, dirty in his habits, and will forget all his training. After that he will be for a day or two irritable, violent, impulsive, and even dangerous. He articulates in a childish way. He is getting worse, and will no doubt die some day in a fit or after a series of fits. I have seen the steady use of the bromide of potassium very useful in such cases, lessening the number of the fits and their severity, diminishing the irritability, and improving the nutrition. We have one boy here who is quite another being for the past four years under 20-grain doses three times a day.

The *paralytic* form of idiocy is represented by the case of E. G., who was normal in body and mind till he was four years of age. He then had an apoplectic attack, and his left hand, arm, leg, and left side of his face and head have been partially paralysed, ill-developed, and the limbs shrunken, contracted, and useless ever since. He takes sporadic epileptic attacks. He tries to articulate, but you cannot make out what he says; he is restless, irritable, not very educable, weak, and cold. Such cases, looked at from the motor point of view by the general physicians, constitute one variety of *essential paralysis of infancy.* The degree to which the paralysis and the mental affection are found in different cases varies from sanity to idiocy, from the slightest weakness to complete paralysis, shrivelling, and contortion of the limbs. The pathology of those cases is very interesting. Often the

convolutions in the affected hemisphere are found undeveloped, damaged, or atrophied, the lower ganglia and centres undeveloped, and one-half of the spinal cord, as well as the motor nerves from it to the affected side, atrophied or not developed. In some cases we find the bones of the cranium enormously thickened compensatorily on the affected side (as we found in E. G.'s case when he died). I have never been able to understand why cerebral apoplexies occur in infancy. I am inclined to think that they are often, not effusions of blood, primarily at least, but vaso-motor spasms with subsequent dilatations affecting certain of the cerebral vessels, and resulting in trophic damage to the parts of the brain affected. We may have, however, apoplexies in childhood and succeeding paresis without marked mental defect.

Inflammatory idiocy results from the inflammations and sloughings that affect the throat and ears in scarlet fever, spreading inwards and damaging the brain. Certain portions of the organ are sometimes found to be hypertrophic in those cases. It is a very unfavourable variety.

Traumatic idiocy is much like the inflammatory, or sometimes like the paralytic form, and results from falls and blows on the head.

The *microcephalic* is a very interesting variety of idiocy. On the whole, the heads of idiots are smaller than those of sane persons, but there are many exceptions to this rule, and, as a matter of fact, the *average* sizes of the heads of idiots are as large as the *minimum* sizes of perfectly sane persons. Ireland says :—"The size of the head gives no estimate of the comparative intelligence of the (idiotic) children." There is, however, a certain minimum size below which a head is incompatible with average intelligence. I believe a circumference of below 18 inches means idiocy. Very typical microcephalics are rare, but, when seen, they make a strong impression. With their bird-like profiles they look so impish and unearthly. They are usually active, alert, mischievous, imitative, intractable. I have no really good specimen, but E. H., with a head

of 18 inches in circumference, a small face, a small but perfectly well-formed body, an active, imitative way, and a restless manner, gives an idea of one. Her only deformity is a cleft and acutely arched deformed palate. She just looks like a little dried-up woman, with small features and a singular expression of face, and she smiles as if a baby was imitating the features of an old woman. Microcephalics should always be sent to training-schools. They are often educable up to a certain point, and if not educated and employed, they are often little demons. Their muscular activity, therefore, must be provided with outlets.

Hydrocephalic idiocy is very common, but I need hardly say to you that hydrocephalus, with even enormous enlargement and great deformity of the head, is perfectly compatible with sanity and mental capacity. It usually has a dwarfing and often a deforming effect on the body. A small head is no proof that there has not been hydrocephalus.

E. I., is a good example of a hydrocephalic idiot. She is now ten, and is slow in her movements, very gentle and patient; sometimes cries and moans, as if she had an organic sensation of discomfort in her head. Her head is globular, the fontanelles raised, the temples projected. She looks unhealthy, has scrofulous glands and a feeble constitution. Her temper is good. She is educable, and worth educating. I am going to have her sent from this to an imbecile training institution. Drs Batty Tuke and Campbell Clark have described very fully the condition of the brain in certain cases of hydrocephalic idiocy. The former found enormous hypertrophy of the neuroglia, and the latter found a floating lobe or portion of brain unattached to any other nerve tissue, which could never therefore have exercised nerve functions, yet it had nerve cells and fibres in a primitive form.

Idiocy, real or apparent, may occur by *deprivation of the senses* only. The famous case of Laura Bridgman, who was blind, deaf, and dumb, and with an indistinct sense of smell, but with common sensation through which Dr Howe educated

her brain, developed intelligence and emotion, and raised her from a condition of absolute want of intelligence to one of great mental capacity, is and will always be the classical case of apparent idiocy by deprivation. She differed essentially from most other forms and cases of idiocy in having a brain well developed and apparently normal in all respects, except that its inlets and outlets were obstructed. Ordinary deaf-mutism is closely allied to idiocy, and is one of the hereditary neuroses. Insanity is very much more common among deaf-mutes than among the general population. To me it seems a physiological sin that marriages between such persons should be legal, though apparently healthy progeny often results. But we know that each one of these must carry potential neuroses to future generations.

Cretinism is an endemic disease occurring in connection with goitre in some valleys of mountain chains, such as the Alps, Cordilleras, and Himalayas, and is very seldom found here, so I need say nothing about it. It is very interesting from an etiological and pathological point of view, and has quite a literature of its own on the Continent.

LECTURE VIII.

STATES OF MENTAL STUPOR ("ACUTE DEMENTIA," "PRIMARY DEMENTIA," "DEMENTIA ATTONITA," *PSYCHOCOMA*).

A distinct variety of mental disease—*Definition:* Lethargy; stupor; impressions on senses produce no effect; attention gone; desire and emotion absent; stupor from the physiological point of view; receptivity and irritability of brain gone; higher reflex functions suspended; even reflex functions of cord lessened; hunger and thirst not felt; reproductive instincts not absent, but they assume depraved automatic forms—Age commonly between 20 and 30; mental condition may be unconscious, conscious, or half conscious; muscular system may be passive, cataleptic, or resistive—*Melancholic Stupor* (*Melancholia Attonita*, *Melancholie avec Stupeur*): An intense melancholia, with delusions that "paralyse" the mind; memory, consciousness, and attention not gone; sensibility not gone; prognosis; 54 per cent. recover—*Anergic Stupor* ("Acute Dementia," "Primary Dementia," "Dementia attonita"): A real stupor; sensibility, memory, attention, resistance gone; feeble circulation; vaso-motor paralysis; relationship of stupor to trance, hypnotism, and catalepsy. *Pathology—Treatment:* Vaso-motor stimulants; continued current; strychnine; iron; ergot; warmth; rubbing; shower baths. Moral treatment unavailing at first. *Causation:* 1. Sexual; 2. Emotional shock; 3. Acute disease; 4. Alcoholism; 5. A stage of other mental diseases; 6. Senility—*Secondary Stupor:* Transitory; sequential, usually following sharp attacks of acute mania; curable.

You will not find stupor put among the ordinary symptomatological varieties of mental diseases, along with mania, melancholia, &c. This I think is a mistake. The only objections to its being so placed are two,—that it is not commonly a primary disease, and that the word stupor does not imply to the lay or even to the medical mind any necessary mental disease at all,

as they understand it. But these objections should not prevent us using the word to express in a correct scientific sense a morbid mental condition, which is different psychologically and clinically from all other morbid mental conditions which, while it lasts, demands different treatment from them in many cases, and has a different course and termination. Stupor, used in this strict medico-psychological sense, may be thus defined:— "A morbid condition in which there is mental and nervous lethargy and torpor, in which impressions on the senses produce little or no outward present effect, in which the faculty of attention is or seems paralysed, in which there is no sign of originating mental power, in which the higher reflex functions of the brain are paralysed, and in which the voluntary motions are almost suspended for want of convolutional stimulus, but where the patients usually retain the power of standing, walking, masticating, and swallowing."

The condition of stupor may be the expression of an exhausted, lowered, and devitalised brain.

A typical case of this condition stands for hours where he is placed, in the same attitude; when spoken to he takes no notice; he shows no active desires, passions, or affections; he does not speak nor move, nor show any interest in anything. His expression of face is vacuous; his vaso-motor power is much below normal, so that his extremities look blue and are cold; he does not obey the calls of nature, nor take any notice of them at all. Loud sounds make no impression; pleasant or terrible sights that would in others produce motion and emotion fail to do so. A woman once committed suicide by hanging herself in a dormitory in Morningside in the presence of another patient in a condition of stupor, who took no notice whatever of this frightful sight.

Looking at the condition of stupor from the point of view of the physiology of the brain, we see that its power of receiving impressions from without is in abeyance, and its higher reflex functions suspended. The mental and motor irritation of a full bladder or loaded rectum is not felt by the higher brain centres;

and when, through the action of the lower centres, evacuations take place, there is either no consciousness of them, or, if there is, it does not result in the volition that prepares suitably for them, or in the vexation that would be felt in health if they took place over the body. Even the ordinary skin and spinal reflexes are much diminished or abolished. The appetites for food and drink are paralysed, or, if felt, are not followed by any exertion to satisfy them.

Age, and Relationship to Reproduction, Hysteria, Masturbation, &c.—Most of the typical cases of stupor occur in the actively reproductive period of life. The majority of them, in fact, are under 30. Dr Hack Tuke[1] found that 27 was the average age in 20 cases. In my experience all the very typical cases are nearer 20 than 30. A striking exception, and the only material exception, to the passivity or suspension of brain function in stupor, is the gratification of the reproductive instinct in a low automatic form, the inhibitory centres being dormant. In the majority of the cases the commencement of the disease had been connected with or accompanied by a sexual excitation in some form or other. Many of them had indulged badly in masturbation and had exhausted the brain energy thereby—had "stupefied" themselves in fact by this. Most of them indulged in this habit long after they had entered into a condition of mental stupor, doing it automatically rather than volitionally, and many of them have sexual delusions at the expiry of the attack.

Many of the girls had been hysterical, and showed during their disease marked hysterical symptoms. The aspect, expression of eyes, and behaviour before the other sex, while consciousness existed, were markedly erotic, this being so in some of the cases even after speech and all outward mental manifestations had ceased. Many of them had cataleptic, trance, and hystero-epileptic symptoms, all these affections being commonly connected with the function of reproduction,

[1] International Medical Congress, 1881, *Transactions*, vol. iii. p. 638.

its disorders, or its perversions. The direct connection of stupor in most cases with the reproductive and sexual functions has not been sufficiently considered hitherto. Those functions are the dominant vital activities from adolescence to 35 in many persons of the neurotic diathesis. If the inherent brain stability is hereditarily weak, with the inhibitory power poorly developed, and if under those circumstances there is intense sexual excitability or a constant sexual drain through masturbation or excessive sexual intercourse, then is stupor, in some form or degree, the natural expression of the exhaustion of the higher nerve force that follows. We shall see examples to prove this presently.

When I thus bring out strongly the connection of stupor with the reproductive function, it must be remembered that I am referring particularly to that form which is attended by unconsciousness, though this may have a distinctly melancholic stage or tinge throughout—mental depression, too, being a symptom of brain exhaustion—and it must be kept in mind that there are individual cases of stupor of the melancholic type at all ages and resulting from other causes, such as mental or nervous shocks, frights, losses, or bodily diseases, which have no reproductive or sexual complication at all.

Muscular Conditions.—The voluntary motor system is found to be in three conditions in different cases or in different stages of the same case, viz., (1) passive, unresistive, and having no tendency to keep fixed positions; (2) cataleptic, with decided tendencies to keep fixed attitudes and positions, but with no resistance to external force used in changing the "waxy" muscular conditions; (3) resistive, showing a more or less strong resistance to external efforts to change the position. The first is commonly found in the anergic form of stupor, especially when it is caused by a previous acute attack or by masturbation; the second also in some of the anergic reproductive cases; and the last in the melancholic form alone.

Varieties.—Looked at from the purely mental point of view, conditions of stupor are divisible into three varieties, viz., the

unconscious—*the anergic*,—where consciousness and memory are gone; the conscious—*the melancholic*,—where they are both present, and where there is a deep emotional depression with delusion present, these facts being ascertained and tested afterwards by the patient's own account; and the *half-conscious*, or confused, where there is some consciousness, but by no means a keen or a correct subjective realisation of events, and where the recollection of them afterwards is confused or delusional. Some cases pass through all these conditions in different stages. Conditions of mental stupor have excited much interest, and have an extensive literature, especially in France. Dr Hayes Newington, when assistant physician in Morningside in 1874, studied them carefully, and wrote a capital description[1] of them, with which I in the main agree; indeed, all must agree with him, for he sticks closely to clinical fact. He gave us the admirable word "*anergic*" to describe the passive, unconscious, non-depressed cases. This should take the place of the older term "acute" or "primary" dementia, still commonly applied to such cases, which should be discontinued, for it is confusing and incorrect. If you take a typical case of either the melancholic or the anergic varieties, each undoubtedly corresponds to his descriptions; but an extended clinical experience has shown me that the same case may begin by being in the condition of melancholic and conscious stupor, and may end by passing into the anergic and unconscious variety. Then I find that by far the larger number of the cases that were anergic during the greater part of their course had a short melancholic stage to begin with. As for stupor being a primary affection, I call to mind very few cases where it was entirely so. Insanity seldom begins with stupor. There is a stage of mental depression or of mania,—very short, it may be, but still present. The stupor may be the disease for all practical and clinical purposes, but preceded by an initiatory stage of another condition. The cases which

[1] *Journal of Mental Science*, October 1874.

we shall see, or to which I shall refer, will illustrate those various points of causation and symptoms.

The best clinical division of stupor would be, I think, into the following kinds; which, in the order of their frequency or importance, are :—

a. Melancholic stupor.
b. Anergic stupor.
c. Secondary stupor (transitory after acute mental disease).
d. General paralytic stupor.
e. Epileptic stupor.

Melancholic Stupor is the most frequent form. It is the *melancholia attonita*, or the *mélancholie avec stupeur*, of the authors. As I have said, it is, either throughout its whole course or at some part of it, the conscious and delusional form or the half-conscious looked at from the mental point of view, the resistive looked at from the muscular aspect, and the less paralytic looked at from the vaso-motor point of view. Some authors write as if there was always one overmastering delusion of a terrible kind, — the patient fancying himself dead, or that he is too wicked to hold intercourse with his fellow-men, or that if he speaks he will be killed, &c., which, as it were, fills the whole mental vision and leaves no room for any other manifestation of mind, paralysing speech, and active volition of any kind. I do not think this a true view to take. There may or there may not be such a delusion, but by itself a delusion never causes stupor. There must be something more than this. There is always, in addition, a distinct morbid condition of the brain affecting its reflex action, its trophic and vaso-motor state, its receptive power in all directions, and most especially its active ideo-motor functions. None of these things are the necessary concomitants of merely delusional conditions. I look on the delusion as one symptom only, and not the cause of the melancholic stupor. Melancholic cases are sometimes suddenly impulsive at one period of the

disease, and it is well to remember that during convalescence they may be suicidally impulsive. Gusts of motor energy seem suddenly to be evolved in the brain, and in fact I look on those as being correlative and complementary to stuporose conditions. I have seen epileptiform fits occur occasionally in such cases, but much more frequently a condition merely simulating epilepsy or apoplexy, the patient being conscious and having a real control over the muscular movements. Whenever you see a melancholic patient said to be "in a fit," always think of this condition. It is not uncommon. In some instances this state occurs as the acme of an ordinary case of delusional or excited melancholia, being a short incident in the case. In other instances, though preceded by depression of mind, the stupor is the chief part of the disease. In some instances the stupor remains characteristically melancholic all through—being conscious, resistive, and unaccompanied by much vaso-motor paralysis. In other instances it passes into anergic stupor,—the patient becoming unconscious, unresistive, and with marked vaso-motor and trophic paresis. Some cases of melancholic stupor assume melancholic attitudes. Here is a young woman who lies flat on the ground, with her face on the floor, and she resists being placed on a chair. Here is a young man who is bent down till he almost crouches. Here is another who puts his fingers to his ears and keeps them there.

The following are three cases of melancholic stupor, the first two (E. M. and E. N.) being patients of the ordinary type, and the third (E. O.) being a very extraordinary case in its severity, duration, and the length of time he was artificially fed, and in its termination in recovery in these circumstances:—

E. M., æt. 21, a well-educated, bright, clever, and industrious youth of sanguine temperament. No nervous heredity admitted. Habits temperate and correct. The cause of the attack was overstudy when he was rapidly developing in body, and had not attained manhood. His brain was exhausted by the body growth, development, want of sleep, and

continuous mental effort. His first symptoms began eighteen months ago, and were mental depression, sleeplessness, and pain in the head. He got worse in mind and body, and soon became suicidal—attempting to take away his life. He became suspicious, too, his affection for his relations diminishing, and he was fickle. He then got so much better through rest and change that he resumed his work and studies. When he relapsed, a few weeks before admission, he became again very suicidal—asking for poison, and wanting to drown himself. His motive for suicide was that people were going to kill him. On admission he was much depressed, though he could pick himself up and smile in a forced way. He was very fearful, imagining that he had done some great crime, and that he was to be tried and would be hanged. He was thin, his muscles flabby, his pulse 60 and weak, bowels constipated. Temperature—97·2° in the morning, 96·4° at night. Weight, 9 st. 10 lbs. He was unsettled and restless at night as well as being sleepless. His appetite was poor. He was evidently all the time looking for the means of suicide, so he was carefully watched night and day. He got more confused and more obstinate, until in a fortnight after his admission he was in a state of complete stupor; his countenance wore a heavy, semi-vacuous, depressed expression; he would not answer questions nor take notice of anything; was utterly careless of his dress and person, letting his motions pass where he stood. The skin had a warm, clammy feel, except at the extremities, which were blue and cold. He had a few lucid intervals of a few minutes each, when he would as it were wake up and ask where he was. The treatment from the beginning consisted of his being compelled to take an enormous quantity of milk and eggs in liquid custards, flavoured with nutmeg, and with half a glass of sherry in each. He took usually in the day 12 eggs and 6 pints of milk, and began to gain in weight after the first fortnight. He had quinine and strychnine in moderate doses, and cod-liver oil emulsion, containing hypophosphite of lime and pepsine. He

was walked in the open air a great deal. His skin was well rubbed with rough towels night and morning, and occasionally he had the continued current up to fifteen cells. He steadily gained in weight. After three months' treatment he began to speak, and wrote the following letter to his mother:—"My mother, please let me go home. I don't know where I am. I feel very ill. Would you let me go home." In a few days he wrote to her to send him some money to pay for his maintenance here, saying that he thought about £3000 would do, that he was a nuisance to those around him, and asking what great crime he had committed, and requesting that he might be punished adequately. In another month the confusion of mind was passing away; in a month from that he was practically well in reasoning power, in feeling, memory, and in bodily health, and was over 11 stone in weight, having gained 18 lbs. He was bright, intelligent, lively, and a great favourite. He said he remembered in a confused way the events that occurred during his period of stupor, that he had the delusion all the time he had committed a crime, and was to be punished, and could not pay for the food given to him. When discharged, six months after admission, I never was more satisfied in any case that a complete recovery had been made. I always like to see a patient get fat on recovery from any form of insanity.

This was a very typical case of melancholic stupor, and would be called by most authors one of "primary dementia," showing well how the stupor was the acme of the brain condition, which showed itself first as melancholia, how there was a melancholic tinge through the stupor, and a distinct melancholic delusion. But I conceive it would be a mistake to describe the stupor as being *caused* by this profound delusion. As a matter of fact, in this, as in all such cases, the intensity of realisation of the delusion, and the capacity to feel keenly, were blunted by the condition of stupor. The stupor I look on as a brain condition distinct from that of acutely felt depression in melancholia, in which delusions are

vivid and the misery acute. The condition of the mental portion of the convolutions in stupor is probably analogous to the stupidity of a nervous child when terrified or bullied.

The following was a case of melancholic stupor of short duration, and with a complete recovery :—

E. N., æt. 35. Temperament melancholic. Habits intemperate; a prostitute. Heredity — mother intemperate, and subject to periodic attacks of melancholia. Her illness began by melancholic depressions and delusions, but she soon became excited, noisy, and tried to commit suicide. She had no great overmastering melancholic delusion to account for the stupor into which she soon passed after admission, which was complete, with all the characters of melancholic stupor, being muscularly resistive with no cataleptic tendency, with refusal of food, and expression of face depressed. She would not walk nor move, and had to be kept in bed. She remained in that state for about six weeks. It was evidently the acme of the attack of melancholia, and she shortly got better and made a good recovery in six months. She said that the period of stupor was a blank to her, and she remembers nothing that took place then.

The following was an extraordinary case of prolonged melancholic delusional stupor, lasting three years, and requiring artificial feeding all that time, with final recovery.

F. O., æt. 31. Admitted 26th January 1876. Disposition retiring. Strumous diathesis. Habits unsocial, and almost too industrious and sedentary. Excessive masturbation. Father intemperate; mother died of consumption. Had one slight attack of mental disease—melancholia—three years ago, from which he quite recovered in a few months. First symptoms of mental disease were slight depression and foolish fancies. Along with these there were sleeplessness, pains in head, loss of nutrition, and great coldness of extremities. Sometimes he could not be kept warm by any means used. Was not dirty, destructive, nor obscene, nor violent. Those symptoms showed themselves fifteen months ago. As he got

worse he opened a vein and lost some blood, and on several other occasions he seemed to have tried to choke himself with a scarf. He was at times noisy and incoherent, and sleepless. He had changing delusions, *e.g.*, that his brain was compressed by an evil spirit.

On admission he was depressed and hypochondriacal, fancying that he was dangerously ill, that he had been a great sinner and very licentious, that he suffered shame more than all mankind, and that his body had been tampered with when he had attempted suicide. Along with the depression there was much mental enfeeblement, facility, childishness, and impairment of memory, with rambling and incoherence. He had delusions about his sexual organs. He was anæmic, flabby, thin, and we thought that there was slight comparative dulness at apex of right lung, with rough breathing sounds. Temperature, 98·4°. Height, 5 feet 6½ inches. Weight, 8 st. 13 lbs.

He remained very much in this mildly melancholic condition for three months. He constantly wanted quack medicines, had a poor appetite, and used to twist and wriggle his body about in obedience to delusions. He then had an attack of deeper depression, with more confirmed delusions, intense insane obstinacy, impulsive violence, shouting at times and twisting his body about, as if there were beasts crawling on him. After this he refused food entirely in May, and was fed with the stomach-pump on May 7, 1876, resisting strongly. He took his food on the 17th, but again needed to be fed on the 18th, and for several weeks afterwards. Then for several months he took his food himself, his mental condition otherwise remaining much as before, and his delusions being very pronounced. But in May 1877 he again began to refuse food, and from that time till April 30, 1880—a period of over two years and eleven months—he took no food, and required to be fed twice a day with the stomach-pump.

But this was not the most extraordinary part of this case. In the course of a month after his being fed, he had passed

into a condition of absolute stupor, lying motionless, insensible to pain, unable to stand, his urine and fæces dribbling away, his circulation feeble, offering no resistance to anything done to him, and taking no notice apparently of anything. Nothing could rouse him, nothing could stir him, nothing could excite any mental or bodily reply or response, except that he shut his eyes tightly when the eyeballs were touched, and there was slight motion of the legs when the soles of his feet were tickled. But this last reflex power disappeared in October 1878. Much difficulty was experienced in keeping him warm, but an old and most affectionate maiden aunt, who came to see him almost daily, contrived the most wonderful woollen foot coverings and body rugs. He was dressed in the morning, carried down to a sofa, and his penis inserted into an indiarubber bottle. There he lay all day, never moving, never resisting anything done to him. He seemed the most complete case of "acute dementia" or anergic stupor I ever saw, except for two things: these were, a certain expression in his face, which was never so absolutely blank as it is in that condition, and his not being able to stand nor move, which seldom occurs. There was none of the resistance nor muscular rigidity of typical melancholic stupor.

As regards treatment, he was fed in the morning with a liquid mess, consisting of a pound of beef done to a liquid form in a large mortar, with potatoes and vegetables similarly pounded down, the whole being made liquid enough to pass readily through a stomach-pump tube, with beef-tea and a quarter of a pound of sugar. In the evening he had a custard with three eggs and a quarter of a pound of sugar. His bowels kept regular. He had at various times quinine, strychnine, phosphorus, ergot, cod-liver oil, the hypophosphites of lime and iron, and the continued current up to twenty cells of a Hawksley's battery, used once a day for months together, through his brain and spinal cord. No good seemed to be done, yet he was a case about whom we never quite lost hope. His nutrition kept fair, and he did not lose weight.

At last, in June 1879, he was observed by his attendant to

turn over on the sofa. Then reflex action on tickling of the soles returned, and his countenance began to acquire more expression. The continued current was being used at this time, but I am very doubtful if it had anything to do with his improvement. In February 1880 his glottis became more sensitive, so that the passage of the tube caused coughing, and he raised himself up after feeding once. One day he seized the tube and remained rigid and cataleptic for a few minutes. On April 30, 1880, he spoke for the first time, and at feeding time said he was tired of custards, and wanted some tea, took a moderate tea and supper, and a good breakfast. He had never lost weight during all the time of his artificial feeding. He took no food on May 1st, but on May 2nd asked Dr Clark, who was about to feed him, if it was the custom to keep sane men in the Asylum, and on being told that it was not much like a sane man to refuse food, he replied, "Then if I take my food will that prove my sanity?" "Yes." "Then give it me at once." He took it there and then, and never missed a meal afterwards. He was weak, and his appetite was feeble at first, but he soon began to walk, then to go out, and he got stronger, and heavier by nearly a stone than he was on admission. When asked about his stupor, he always gave some sexual reason, such as that it was "gonorrhœa" or "emissions" that had been the cause of it. He asserted that he had been conscious all the time, and made some statements which proved that there had been some consciousness, reasoning power, and memory. He described how a sphygmograph was used on his radial artery, he told the names of assistant physicians who had been in charge of him during his stupor, and he "asked pardon for my conduct." His memory was not quite clear, however; he could not tell much about what happened, nor the year he entered the Asylum. His memory of events before his illness was good, and he showed much curiosity as to what had been going on in the religious world. He was hypochondriacal, notional, and somewhat weak-minded, and was discharged relieved on June 21, 1880. He has im-

proved still further at home, his old maiden aunt thinking him as well as ever he was in his life, and considering him a most intelligent and exemplary youth. She takes almost the entire credit of his resurrection, a distinction which I am much inclined to award her, for she kept him warm, she kept up the interest of every one in his case by daily visits, and she never despaired of his recovery.

Relation to Trance.—This was essentially a case of melancholic stupor (*melancholia attonita, pyschocoma, mélancholie avec stupeur*), with many of the features of "anergic stupor." In fact, after the symptoms attained their greatest intensity, when there was no apparent consciousness, no attention, no muscular resistance, no voluntary motion, no spinal reflex function, when the body temperature was very low, the capillary circulation in the extremities was very weak, the urine and fæces passing involuntarily and at all times, I considered the case as one of anergic stupor (acute dementia), that had arisen at first out of a melancholic condition, and used to speak of it as such, a fact of which the patient reminded me after his recovery. I certainly did not think there was consciousness, or attention, or memory really present, as the patient's recollections afterwards proved them to have been to some extent. In old times the case would have been called one of *trance*, and there were many of the features of what is now described in the books by that name. Stupor is one of those conditions that seem to take hold of the popular imagination, cases being reported in the newspapers, becoming the subject of works of fiction,[1] and exciting interest in all sorts of ways. The wonder is that more hysterical young women don't fall into it. The way in which it is sometimes mismanaged is a disgrace to our knowledge of mental diseases. Stupor is frequent in hysteria. I think it probable that most cases of trance, if examined by an alienist, would be placed under melancholic or anergic stupor. It will be noted how well the digestive and trophic functions of the body were per-

[1] The story of *Called Back* is well worth reading.

formed when there was no voluntary muscular action whatever. The great length of time during which the symptoms lasted, and the final recovery, so far as the stupor was concerned, are very marked features of the case, if they are not unprecedented.

The following was a striking case of stupor (melancholic) following a mental shock:—

E. O. A., æt. 55, of a melancholic temperament, and steady and industrious habits, through which he had made and saved £6000. There was no known neurotic heredity. He was a shareholder in the City of Glasgow Bank, and the failure of that ill-fated concern, and the loss of all his money, seemed to "take the spirit out of him" completely. He became sleepless, nervous, and much depressed. He lost weight—from 14 stone to 10 stone 4 lbs. He first spoke constantly about his being victimised and cheated, and then expressed delusions that he was in debt, and that he must go to the police office and give himself up. His delusions next referred to his body—no doubt his organic sensations, as he got thin, weak, dyspeptic, and costive, were those of discomfort—and he said that his inside was burnt up. On his admission to the Asylum, six months after the beginning of his disease, he was with difficulty got to speak, to answer questions, or to take food, and he slept badly. He would appear as if he were about to speak or answer a question, but the volition power to articulate seemed to fail him, and he could say nothing. His next delusion was natural enough, the wish being father to the thought. He fancied he was dead, and he would say—"I am dead: put me in my grave." Then for two months his stupor was complete, with no outward expression of mentalisation at all. But the expression of face was melancholic as well as stupid, and there was muscular resistance. He lay in bed all day. All this time he was getting weaker. No tonics excited his appetite, no stimulant—and he got brandy in large quantities—roused him, and his food did not nourish him. The news of his favourite daughter's

death did not affect him. I have no doubt he had the delusion he was dead. He got thinner and weaker, and gangrene of his heel appeared, then hypostatic pneumonia, and, lastly, gangrene of the lungs, of which he died eight months after admission. In the last month of his life, and especially when his temperature rose to 102·5° from the lung disease, he would answer questions at times, and once or twice spoke sensibly, asking what sort of night he had had, but generally he wanted to be put into his grave and "buried."

At the *post-mortem* examination we found considerable atrophy of the convolutions, and congestion of the brain substance.

No dramatist ever drew a more vivid picture of adversity overwhelming a man, striking him dumb, crushing the whole vitality of mind and body out of him, and killing him outright. This was clearly an instance of "the power of the mind over the body," even to the extent of putting an end to life.

Anergic Stupor (*Acute Dementia*).—This may be a primary disease commencing without any melancholic or maniacal stage, though I have scarcely ever met with a case in which I could not discover at least a trace of these conditions at the beginning of the attack. Its symptoms are complete unconsciousness, and of course no memory of events that occurred during its persistence; no delusions; no muscular resistance, but in some cases a static or cataleptic muscular condition; a loss of facial expression; a marked vaso-motor paresis, so that the extremities are blue and cold; a lowering of the trophic energy, so that sores are apt to form and even gangrene may occur; the reflex functions of the cord being markedly diminished, and the higher reflex functions of the brain almost in abeyance.

The following case, E. P., was one of anergic stupor, occurring in a girl of eighteen, who had had two slight attacks of melancholia on previous occasions. One grandfather had been melancholic with delusions, but not in an asylum; father had several epileptic attacks, and had been very "excitable" after

each; sister became "dazed" after, and in consequence of, mother's death, and died of phthisis in four months; and a brother was eccentric and foolish. Masturbation suspected. The attack began by a short maniacal stage, with much incoherence,—"laughing in a childish way." This passed into a condition of stupor in two months, during the continuance of which she never spoke, and stood in one position, or sat where she was placed. She swallowed liquid food when put into her mouth, but showed no desire for anything nor interest in anything. Loud noises did not startle her. She did not obey the calls of nature. She was cold, her feet blue and swollen, her pulse weak and quick, and the reflex function of the spinal cord abolished. There was no muscular resistance and no catalepsy. After about a month she seemed, under the use of stimulants, nerve tonics, and blisters to the occiput, to improve somewhat, but she soon fell back again, and remained ill for over a year. Menstruation, which had been absent for the first six months, returned, and she seemed to be none the better for it. As she began to improve she got a little obstinate and even violent, and her brain was for a time in the repeating state one sees sometimes in certain cases of mental disease; when asked a question she would repeat the words said, or part of them, like a parrot, as the reply. After she began to improve she rapidly got well, having been previously fattened with milk diet, and she has remained quite well now for eleven years.

The following was a case with cataleptic symptoms who died.

E. Q., æt. 27, admitted 2nd April 1881. Disposition bright and cheerful. Habits steady and industrious. First attack. No hereditary predisposition. Cause, anxiety in regard to an operation for removal of mammary tumour which she had to undergo. Duration about five weeks. Became gradually depressed, lost appetite, fell off in flesh, slept badly. Ultimately became quite stupid, was unfit for her work, took no interest in her children, would stand in one position for an hour or two continuously, and was very restless at night.

On admission she was in a state of stupor, paying no attention to questions addressed to her or to anything occurring near her, would not utter a word, stood in a listless and stupid attitude, obeyed no orders, refused food, did not attend to the calls of nature. She was in very poor condition and weak general health. She was unresistive, cold, and her extremities blue, and her face expressed vacancy, not melancholy. She remained in this state with the addition of a degree of catalepsy for about a year. To have custards, plenty of extra milk, porter, and cod-liver oil emulsion, and friction to skin, with extra warm clothing.

The mental faculties seem blunted or dead; she is utterly careless and apathetic; she is slovenly and dirty, requiring to be washed, dressed, and attended to in every respect; she never volunteers a remark, and indeed never utters a single expression, except while being bathed or dressed, when she sometimes gives vent to expressions of disapprobation and disgust. Her general look is one of utter stupidity and degradation, the features being coarse and blurred, the saliva dribbling from the mouth; but frequently, without apparent external cause, the face assumes various exaggerated expressions of disgust, amusement, and eroticism, while at times she has muffled outbursts of chuckling laughter. In the twelve months she improved in many respects, but she then died of diarrhœa.

The following is a complicated case of stupor, catalepsy with epileptiform convulsions; temporary partial recovery, dementia:—

E. S., æt. 17, admitted to Royal Edinburgh Asylum, 2nd May 1874. Disposition quiet and dull; habits steady; family history not ascertained; assigned cause a severe blow on the back of the head three years before admission, since which he has been duller and more stupid. The injury seems to have been chiefly spinal. After it he gradually lost complete control over the movements of his head—it "came forward"—then he ceased to be able to stretch his arms forwards and

back, but he still could write. Was sick, and sometimes vomited. Could not walk far nor run at all without being very tired. Had pain in his head. About three weeks ago showed mental symptoms, viz., religious anxiety, delusions that his food and medicine were poisoned, shouting, violence, and dirty habits. It appears that an epileptiform fit immediately preceded those symptoms. Took another fit sixteen days before admission, springing right up from his bed. Convulsions lasted three-quarters of an hour. During the fit the lip and tongue were bitten. He was then for five hours in "a trance." His head had been shaved and blistered. Had six or seven fits subsequent to this, and before admission.

On admission he was in a state of stupor with no mentalisation apparent, insensitive to pain, and spinal reflex action abolished. Pulse 130, weak; temperature 97·8°; was very weak; urine and fæces passed in bed.

He remained in this stupor, but sometimes cried and moaned, and took many epileptiform fits for the first ten days. He then showed the true cataleptic symptoms, his body assuming any position it was placed in for any length of time. He took no notice of anything, and would not answer questions. One evening the attendant got him up, put the chamber-pot in his hands under his penis, went away, and forgot all about it, and he was found in the same position in the middle of the night by the night attendant. He remained cataleptic and unconscious for eight days, when he had a feverish attack with diarrhœa, temperature being 103°. While this lasted he could be roused to answer questions in monosyllables, and appeared to be more conscious and intelligent. After the fever subsided he again became completely cataleptic. There collected and ran out of his mouth a fœtid greenish fluid somewhat purulent in character. Sometimes he had to be fed with the stomach-pump. The food always had to be made liquid. During all the time, up till August 10th, he had muscular twitchings of the extremities, and occasionally a regular epileptic

fit. Pulse then 60, weak and irregular; temperature, 98·9°.

During September he began to move slowly by volition in a snail-like way, without speech or expression in his face. When up, and told sharply to get into bed, he would move slowly and manage to go there in half an hour or so. Bowels very costive. When much roused, on September 17th, he got up and walked along the corridor. There were no fits after the 18th September. He steadily improved after this, still being slow and stupid, affectively religious, going to church, and saying very long prayers before going to bed. In October he was able to dress, undress, go out to do a little garden work, but was stolid, slightly enfeebled in mind, reserved, wanting in curiosity and interest, and as if he had some latent morbid fancies.

On 8th November 1875, he was discharged as "recovered," being coherent and intelligent, but there was present some of the general listless mental state referred to.

He did very well at home for a time, but a process of gradual mental enfeeblement seems to have come on, with irascibility and sometimes violence, so that, on 4th June 1878, he was re-admitted to the Asylum in a state of ordinary secondary dementia. He still remains there. He has never had any recurrence of the epileptiform fits.

There are two additional facts which one may assume, though they do not appear in this record. The first is that there must have been a strong heredity to insanity. The second is that the lad practised masturbation to excess.

He says he has no recollection of what occurred during his period of stupor. That I believe. I look on such a case as being partly caused by adolescence, complicated by masturbation and by traumatism, all of which were concerned in the causation of the epileptiform attacks and the condition of stupor.

Secondary Stupor.—All acute forms of mental disease are liable to be followed, after the acute symptoms have passed

off, by a condition of mental torpor and a kind of mental enfeeblement. But this differs from the true secondary dementia. There is in it to a large extent the mental characters which I have described as being those of stupor, and, above all, it is curable. The patients are inattentive, confused, lethargic, and torpid. The brain reflexes are dulled. The energising of the convolutions is slow and confused. All the higher reasoning and affective powers are in abeyance for the time being. It is a time of exceeding importance for treatment, which should be supporting, tonic, nutritive, and stimulating, though not too exciting. Nerve stimulants and counter-irritation to the head are often of service. It is a time for moral and mental treatment, for mental stimulation of the higher centres by amusements and congenial work. The fact that this state is of frequent occurrence should make us guarded in our prognosis, and never come hastily to the conclusion that incurable secondary dementia is present.

General Paralytic and Epileptic Stupor.—The condition of stupor of the anergic kind is often an incident in those two diseases, most frequently following attacks of convulsions or congestive attacks, but sometimes coming on of itself without any reference to such motor symptoms. Wherever there has been prolonged stupor in general paralysis we find much brain atrophy after death.

Causation.—The causes of stupor are the following:—

1. Sexual. The chief of these is the habit of masturbation. I have met with it also as a post-connubial condition, or from excessive sexual intercourse in both sexes in adolescents. In some cases it seemed as if the mental and emotional exaltation had acted as strongly as the physical exhaustion. E. P. (p. 321) and E. S. (p. 323) were examples.

2. The hysterical condition.

3. Mental and moral shocks (E. O. A., p. 320), and overwork during adolescence (E. M., p. 312).

4. The brain exhaustion caused by acute mental diseases, more especially acute mania.

5. Stupor often occurs as an incident or stage in other mental diseases, notably, as we have seen, in general paralysis and epilepsy.

6. An alcoholic stupor may be caused by excessive drinking, and is thus one form of alcoholic insanity (E. N., p. 315). Such a condition is usually transitory, but not always.

7. Stupor is frequently one of the stages of alternating insanity following the exalted condition. It is more apt to occur in those where the exalted period is acutely maniacal. This stupor is usually the melancholic form. The older the patient the more apt is the stage of reaction after exaltation to be one of stupor. I had once under my care an old gentleman of 84, who, when his periods of exaltation were unusually long, would afterwards become torpid, never speak nor take any notice of anything, would not even stand, but must be kept in bed, would scarcely swallow, and this would sometimes continue for four or five weeks (and see case D. E., p. 232). When younger he never had such attacks. He has laboured under irregularly alternating insanity for thirty years.

8. Adolescence alone, as in the case of E. P. (p. 321).

9. Senility. In the extremest form of senile insanity the mental faculties sometimes disappear so entirely as to constitute stupor.

10. It is sometimes the chief mental symptom of brain atrophy.

Some of these causes may, of course, co-exist, and they are all apt to be aggravated by the existence of a strong hereditary predisposition to insanity.

Prognosis in Stupor.—In its typical form, in young persons of both sexes, the anergic form ("acute dementia") is a very curable form of mental disease. The melancholic form is not so curable, but about 50 per cent. of the cases recover.

Pathology.—There is undoubted vaso-motor paresis along with diminution or even abolition of many of the cerebral reflexes. A case of deep stupor exhibits the nearest approach we yet know to a complete temporary suspension of all the

higher cerebral centres. Dr Wiglesworth[1] has carefully investigated the condition of the cortex in certain very deep and fatal cases of stupor with motor symptoms. He describes and figures globose, granular, and pigmented cells, some with the beginning of vacuolation of nuclei. The following are his general conclusions:—"That from the ill-defined assemblage of cases commonly called 'Melancholia,' 'Melancholia Attonita,' and 'Acute Dementia,' a group has to be distinguished which constitutes a definite clinical and pathological entity. That this group is clinically characterised by the association of more or less of self-absorption passing into vacuity, with a definite affection of the muscular system, to wit, muscular tremors and muscular rigidity. That the pathological basis of the same is a primary inflammatory affection of nerve cells, best marked in the so-called 'motor cells,' and possibly originating in these, but showing a decided tendency to spread beyond their area."

Treatment of Stupor.—All forms require much the same treatment, but in the anergic cases it needs to be supporting and stimulating, and in the melancholic more supporting at first, and stimulating afterwards. Quinine, iron, strychnine pushed to large doses, ergot, digitalis, warmth, the continued current, exercise, friction, alcoholic stimulants, rousing moral treatment, occupation, distraction of mind, are the general indications. In the relation of the clinical histories of the cases described, the details of treatment have been sufficiently spoken of.

[1] *Journal of Mental Science*, Oct. 1883.

LECTURE IX.

STATES OF DEFECTIVE INHIBITION (*PSYCHOKINESIA; HYPERKINESIA; INHIBITORY INSANITY; IMPULSIVE INSANITY; INSANE IMPULSE; VOLITIONAL INSANITY; UNCONTROLLABLE IMPULSE; INSANITY WITHOUT DELUSION, EXALTATION, DEPRESSION, OR ENFEEBLEMENT*); *THE INSANE DIATHESIS.*

Self-control in the popular sense — Sane self-control is not perfect; variation in amount of, in different persons, ages, and conditions of society; laws, natural and human, should teach it—Physiological view of inhibition in a child; its absence at first; its gradual growth with brain development; degrees of inhibition and of accountability; conscience as a physiological brain quality; children of criminals and of the insane; organic lawlessness — Self-control affected in all insanities; want of inhibitory power and morbid impulse as an insanity; without other morbid mental symptoms—Uncontrollable motor impulses; coughing, sudden acts of defence and offence; exhaustion lessens controlling power; meaning of irritability; existence of obscure tendencies to kill, destroy, &c., in mankind—Doctrine of inhibitory centres of motion, nutrition, and mental action; Laycock's doctrine of reflex function of brain; illustrated by maternal instinct in cats — Illustrations and cases of impulsive but reasoning insanity; epileptiform character in some cases; hereditary connection with epilepsy; impulsive acts by suggestion; brain acting automatically, just as muscles do during sleep, in coughing, speaking, &c.—Action from impulse, either by loss of controlling power, or by an excessive production of energy that must find an outlet somewhere—Conscious and unconscious impulsive action; medico-legal importance and difficulty of uncontrollable action from impulse—Defective inhibition may affect every kind of action, every kind of affective state, and every propensity and instinct; degree of strength; may result in no action, but merely a

desire to act. *Etiology:* Heredity; sunstroke; effects of alcohol on brain and offspring; injuries to brain; congenital defects; want of or bad early training; "moral idiocy"; "instinctive juvenile mania"; visceral derangement and reflex irritation; first symptoms of mania or other insanity. *Prognosis:* Depends on causes; some of the worst and most hopeless cases of insanity as well as the most dangerous and troublesome of this class, and some of the slightest. *Treatment:* Protective to self and others; change of scene, and removal from association of morbid ideas; Medical, by improving health, strengthening nervous tone, removing visceral or other irritation, the bromides and sedatives; regimen, brain rest and muscular exertion, nutritive non-stimulating diet, no alcohol; educative in young psychokinetics. VARIETIES—(*a*) *General Impulsiveness* (*Psychokinesia*): Lack of control or impulse in all directions; to kill, towards suicide, to break and destroy, to sexual acts, &c. (*b*) *Epileptiform Impulse:* Impulsiveness the mental characteristic of epileptics; "mental explosion"; masked epilepsy. (*c*) *Animal and Organic Impulse:* Perverted sexual impulses, taking forms of impulsive masturbation, sodomy, incest, rape on children, beastiality; perversion of other appetites, propensities, and instincts, *e.g.*, urine drinking, eating stones, rags, nails; infinite variety of such impulses. (*d*) *Homicidal Impulse:* Medico-Legal importance; examples; letter of medical man suffering from this, &c. (*e*) *Suicidal Impulse:* Conscious or unconscious; with or without depression of mind; by suggestion; instinct of love of life perverted; most common of all impulses. (*f*) *Destructive Impulse:* Takes the form of breaking, tearing, smashing, &c., with no other tendency; the glass smasher. (*g*) *Dipsomania:* Importance; causation, neurotic or drunken heredity, excess in drinking, injuries to head, losses of blood and bodily weakness, bad hygienic conditions and employments, slight mental weakness combined with neurotic diathesis, senility, first stage of maniacal conditions, special functional conditions, *e.g.*, menstruation, pregnancy, &c. Symptoms; craving for alcohol and all stimulants, lying, general demoralisation, falling in social scale, loss of all self-respect, cringing, self-indulgence, irresolution, loss of affection. Treatment; abstinence, isolation, work, healthy food, regimen, and conditions of life. Prognosis: bad in most cases. (*h*) *Kleptomania:* Rare in uncomplicated form, but this impulse very common in many forms of insanity, especially in General Paralysis, and less so in Mania and Congenital Imbecility. (*i*) *Pyromania:* Rare in uncomplicated form. (*j*) *Moral Insanity:* Congenital absence of sense of right and wrong, and incapacity for moral education. As a matter of fact, we find persons with no moral sense, no remorse, no love of the good, but a love of and impulse to do every evil thing. Conscientiousness hereditary.

Self-Control—Mental Inhibition.—The want of the power of self-control is so very common a thing amongst mankind, that to some extent, and in respect to some matters, it may be regarded as the normal condition of our species. A perfect capacity of self-control in all directions and at all times is rather the ideal state at which we aim than the real condition of any of us. The men who have attained this state of inhibitory perfection have been few and far between, and even in regard to them it may be said that they too would have lost their self-control if they had been exposed to sufficient temptation or irritation. But while a perfect mental inhibition may not be attainable, there is a certain amount of this power in all directions, and an absolute power in some directions that is expected of all sane persons. All sane men must control to some extent their animal desires, and they must control absolutely any desires they may have towards homicide. The law assumes, as the basis of all its enactments, that all men have the inherent power to do certain things and avoid other things that would be inconsistent with the well-being of society, or the safety or comfort of their fellow-men. A man is born of criminal parents, and has been taught to prey on his fellows and look on them as having no rights that he is bound to respect, from no fault of his own his brain is weak, and no sense of right and wrong has been implanted in him, yet in spite of all this he is held as fully responsible by the law and is punished in the same degree as the strongest, best taught, and most favourably circumstanced man in the country; and this is at present unavoidable, however unscientific it is from the physiological and psychological aspect of brain and mind function. Human laws are, after all, largely the reflexes of the laws of nature. If a man has not been taught that an excessive use of alcohol damages or kills, and he drinks it to excess, he suffers just as much as the man who knows its bad effects and deliberately poisons himself with it. But to this assumed power of mental control in all men the law makes certain exceptions. The

first of these is in regard to children, and the second is in regard to persons whose mental power has been affected by disease or want of brain development.

Degrees of Control.—The subject of mental inhibitory power should first be studied by us medical men from the point of view of its gradual development in children. Take a child of six months, and there is absolutely no such brain power existent as mental inhibition—no desire nor tendency is stopped or controlled by a mental act. At a year old the rudiments of the great faculty of self-control are clearly apparent in most children. They will resist the desire to seize the gas flame, they will not upset the milk jug, they will obey orders to sit still when they want to run about, all through a higher mental inhibition. But the power of control is just as gradual a development as the motions of the hands. There is no day or year in a child's life after which killing its little brother is murder, and before which it was no crime at all. The law admits and provides in a rough way for this physiological fact as to self-control, by admitting no responsibility for crime, and exempting entirely from punishment, if committed before the age of seven, and by taking each case between seven and fourteen into special consideration as to whether there was responsibility or not. We physicians see that this faculty is developed at different ages in different cases. We are bound to give credence to all physiological facts and laws, and it is as much a fact that different brains have different degrees of controlling power after their full development, as it is that they attain their power of control at different ages. As we watch children grow up we see that some have the sense of right and wrong, the conscience, developed much sooner and much stronger than others, just as some have their eye-teeth much sooner than others; and looking at adults, we see that some never have much of this sense developed at all. This is notoriously the case in some of those whose ancestors for several generations have been criminals, insane, or drunkards. Then, again, in other persons, the sense of right and wrong is

painfully keen from early childhood, and the desire to follow the one and avoid the other earnestly striven after from the first. In some, therefore, conscience is anæsthetic, in others hyperæsthetic, just as sensation may be. Notoriously it is a bad thing to force any sense or mental faculty into too great activity till its brain substratum is sufficiently developed. I have known many children whose anxious parents had made them morally hyperæsthetic at early ages through an ethical forcing-house treatment. I knew one little boy of four, who, by dint of constant effort on the part of his mother, was so sensitive as to right and wrong, that he never ate an apple without first considering the ethics of the question as to whether he should eat it or not; who would suffer acute misery, cry bitterly, and lose some of his sleep at night if he had shouted too loud at play or taken more than his share of the cake, he having been taught that these things were "wrong" and "displeasing to God." But the usual anæsthesia that follows too keen feeling succeeded to the precocious moral intensity in this child, for at ten he was the greatest imp I ever saw, and could not be made to see that smashing his mother's watch, or throwing a cat out of the window, or taking what was not his own, were wrong at all. We know that some of the children of many generations of thieves take to stealing as a young wild duck among tame ones takes to hiding in holes, and that the children of savage races cannot copy at once our ethics nor our power of controlling our actions. It seems to take many generations to re-develop an atrophied conscience. Professor Benedikt of Vienna showed, at the International Medical Congress of 1881 in London, a number of brains of habitual criminals which he affirmed had their convolutions arranged in a certain simple form peculiar to the criminal classes, so that on seeing such a brain he could tell the general ethical tendencies of the person to whom it belonged, just as you can tell a dog to be a bull dog by his jaws. There is no doubt that an organic lawlessness is transmitted hereditarily. Among the many transmitted morbid peculiarities in the children of neurotic and insane

parents this is often one. Either a too morbid intensity of desire, or a morbid weakness of control, renders such children prone to early morbid immoralities.

In the delirium of fevers and the ravings of the acuter forms of insanity, no form of self-control is expected. The law, from the earliest times, entirely exempted persons suffering from such conditions from responsibility for acts done under their influence. A study of the different varieties of insanity shows us that the power of self-control differs enormously in its various forms, and in different individuals labouring under the same form, while there is no line of demarcation between the state in which a man has "perfect self-control"—to use an expression that cannot be literally true in any case—and that in which he has none at all. Self-control, in short, like all physiological qualities and all mental faculties, exists in every possible degree of strength. Sufficient power of self-control should be the essence and legal test of sanity, if we had any means of estimating it accurately. The accurate clinical study of mind in relation to its ordinary physiological accompaniments in health and disease will, I believe, help us in time to make such an estimate in any particular case far more accurately than we are now able to do. The practising physician, from his daily acquaintance with the physiological facts of nature, instinctively makes allowances for lack of self-control in his patients when they are ill, apart from technical insanity. He knows that the thing called "irritability" usually means lack of full vital power, that the "impulses" of the hysterical girl are simply morbidly transformed modes of energy temporarily bursting the bounds of the patient's will, just as fits of weeping are often involuntary and uncontrollable. But the lawyer, and the medical man who, as a medico-legal witness or adviser, has to consider the social and legal aspect and effect of his opinions, are always chary of admitting mere loss of control or morbid impulse as an excuse for crime. They both like to have other evidence of disorder of the mental function,

in the shape of excitement or depression, insane delusion or incoherence of speech, before they are willing to put forward the plea of diseased want of self-control in mitigation of legal punishment. Another element than medical facts comes in then, viz., the practical effect of their opinions on society. In a community of perfectly law-abiding people a murder would naturally be attributed to disease, and no objection would be taken by any one to that view of it. But with the world as it exists it is different.

Before we can give any opinion as to the responsibility or irresponsibility of any case in a court of law, we should see as many cases as we can where want of controlling power or impulsive tendencies constitute the disease or the chief part of it. Such cases exist, though they are not, in a pure form, very numerous. As one stage in cases of insanity they are frequent. Half the suicidal melancholics at the beginning dread the moment when their self-control will be lost. Many of the maniacal cases show at an early stage only loss of self-control, before motor excitement or incoherence comes on. If one has seen many persons in this state about whom there could be no doubt as to their disease, and if one has systematically studied the loss of self-control or morbid impulse as a mental symptom in the various forms it is found to assume, such experience and study bring much confidence to us in giving private medical advice about this matter, or in giving evidence in the witness-box in regard to one of the most responsible and difficult questions about which a medical man has to come to a decision.

Inhibition, Motor and Mental.—Consider first the variety of simple motor impulses or acts that are physiologically uncontrollable, or partly so, such as coughing, vomiting, &c. Next, look at a more complicated act, that will be recognised by any competent physiologist to be automatic, and beyond the control of any ordinary inhibitory power, *e.g.*, irritate and tease a young child of one or two years sufficiently, and it will strike out at you; suddenly strike a man, and he will either perform

an act of defence or offence, or both, quite automatically, and without power of controlling himself. Place a bright tempting toy before a child of a year, and it will be instantly appropriated. Place cold water suddenly before a sane man dying of thirst, and he will take and drink it without power of doing otherwise. Exhaustion of nervous energy always lessens the inhibitory power. Who is not conscious of this? "Irritability" is one manifestation of this. Many persons have so small a stock of reserve brain power—that most valuable of all brain qualities—that it is soon used up, and they then lose their power of self-control. They are angels or demons just as they are fresh or tired. The surplus store of energy or resistive force which provides in persons normally constituted that moderate excesses in all directions shall do no great harm, so long as they are not too often repeated, not being present in those people, over-work, over-drinking, or small debauches leave them at the mercy of their morbid impulses without power of resistance. Some persons of more mental and nerve force have the fatal power of keeping themselves at work or at dissipation till this surplus reserve stock of resistiveness is altogether exhausted, and they then become completely unresistive against morbid impulses. Woe to the man who uses up his surplus stock of brain inhibition too near the bitter end, or too often!

In relation to the medico-psychological problems of mental inhibition and impulse, we have to take into account those obscure human tendencies towards killing, towards destructiveness, towards appropriation, towards unrule, some of which exist as inchoate physiological tendencies more or less strong in most human beings, and the gratifying of which gives pleasure. They are best seen in youth, and they often come out in a strong way in disease. Be they transmitted qualities of our far-off progenitors, or physiological weapons to help us in the struggle for existence, or other and normal physiological energies transmuted, there they are, and we must accept them as facts of nature.

The doctrine of nervous inhibition and of inhibitory centres has done very much to definitise our notions in regard to the mental working of the brain. There is, of course, no positive proof of mental inhibitory centres, but there is mental inhibition, and a function always implies an organ of some sort. When it was demonstrated that the excitation of certain nerves caused, not motion, but stoppage of motion; when it was proved that the nutrition of the tissues was largely influenced by the increased or diminished patency of the capillaries and arterioles, and that the latter was dependent on two sets of nerves and two sets of centres, one to open and the other to shut those vessels, such physiological facts were at once correlated with the facts observed in conditions of mental excitation and depression, mental quickening and slowing, emotional supersensitiveness and torpor, and the conclusion was arrived at that in the higher department there must be a somewhat similar apparatus for regulating the exercise of the mental functions of the brain, and that disorders of these would probably make all the difference between sanity and insanity, between self-control and insane impulse. That there was a physiological analogy between the jactitation of the limbs of a man with chorea, who tries to control these motions but is not able to do so, and the insane impulses to murder, suicide, and violence which the patients are aware of, deplore, and fruitlessly try to resist but are unable to do so, seemed very evident. In the one case, a controlling centre or centres of motion are not doing their work, either from absolute loss of their own internal power of governance or from an excess of energy generated in the lower motor centres of the choreic limbs; in the other, the controlling centres of mentalisation and feeling are not doing their work for the same reasons. We know that there are controlling centres of many of the lower reflex functions, and there can be no doubt that they exist also to control the great reflex functions of the cerebrum, which were so clearly expounded by Laycock. That doctrine has done much to make us understand better

the mental functions of the brain and their derangements. Let us glance at an example. The maternal instinct of care and affection for offspring is a mental function of brain common to man with the lower animals, and ranks next to the love of life and the desire to reproduce the species in importance, while it equals these in conscious intensity for the time it is in operation. Its periods of activity are, of course, intimately connected with the activity of the reproductive organs. The objects of the instinct need not necessarily be the animal's own offspring. Cats will suckle and take tender care of young rabbits when their maternal instinct is in full activity after parturition and when the mammæ are functionally active. There is a nervous influence sent up from these organs to some portion of the brain, rousing it into activity, and so developing the feeling for young, and the unceasing innumerable acts of care, defence, playing with, and protection, which for the time dominate the whole mental life and outward actions of the animal. Artificial irritation of the mammæ without previous parturition will sometimes develop this instinct. In the case of the cat suckling the young rabbits, it entirely inhibits the opposite instinct to kill and eat them. In conditions of disease the maternal instinct may be completely perverted in its exercise, so that animals sometimes eat and destroy their young. Now, the same thing happens in the human species. In the insanity which occurs after childbirth one of the most common symptoms is either an entire inhibition of the maternal instinct, so that "a woman forgets her sucking child," or an entire perversion of it, so that she wants to destroy her own offspring.

Forms of Impulse.—The physiological word "inhibition" can therefore be used synonymously with the psychological and ethical expression "self-control," or with the "will" when exercised in certain directions. It is the characteristic of most forms of mental disease for self-control to be lost, but this loss is usually part of a general mental affection with melancholic, maniacal, demented, or delusional symptoms as

the chief manifestations of the disease. The cases, not so numerous, where the loss of the power of inhibition is the chief and by far the most marked symptom, we are now to consider and study. I shall call this form "inhibitory insanity." Some of these cases have uncontrollable impulses to violence and destructiveness, others to homicide, others to suicide prompted by no depressed feelings or delusions, others to acts of sexual gratification (satyriasis, nymphomania, erotomania, bestiality), others to drinking too much alcohol (dipsomania), others towards setting things on fire (pyromania), others to stealing (kleptomania), and others towards immoralities of all sorts (moral insanity). The impulsive tendencies and morbid desires are innumerable in kind. Many of these varieties of insanity have been distinguished by distinct names: to dig up and eat dead bodies (necrophilism), to wander from home and throw off the restraints of society (planomania), to act like a wild beast (lycanthropia), &c. Action from impulse in all these directions may take place from a loss of controlling power in the higher regions of the brain, or from an over-development of energy in certain portions of the brain, which the normal power of inhibition cannot control. The driver may be so weak that he cannot control well-broken horses, or the horses may be so hard-mouthed that no driver can pull them up. Both conditions may arise from purely cerebral disorder, or from cerebral excitation or paralysis caused by eccentric agency in the organs—it may be reflex, in short. The former of these may be without consciousness at all, the *ego*, the will, the man being non-existent for the time. The most perfect examples of this are murders done during somnambulism or epileptic unconsciousness, or acts done in the hypnotic state. There is no conscious desire to attain the object at all in such cases. In other cases there are consciousness and memory present, but no power of restraining action. The simplest example of this is where an imbecile or a dement, seeing something glittering, appropriates it to himself, or when he commits indecent sexual acts. Through disease a previously sane and

vigorous-minded person may get into this state. The motives that would lead persons in health not to do such acts do not operate in such persons. I have known a man steal who said he had no intense longing for the article he appropriated at all, at least consciously, but his will was in abeyance, and he could not resist the ordinary desire of possession common to all human nature. I have known a married man with opportunity of sexual intercourse indulge in masturbation, his reason telling him the act was wrong, and his feeling causing disgust and regret, yet he could not resist this simple but unnatural mode of sexual excitation. Volition and resistive power were paralysed.

The second class of impulsive acts, where we seem to have normal volitional power, but the impulses so morbid and so strong that they cannot be resisted, is often seen by the physician in the early stages of mental disease, before its symptoms have fully developed. Its existence may be ridiculed by journalists, and the dangers of admitting its existence may be painted in dark colours by lawyers, but that it exists as a fact in the history of human nature no one can doubt who has actually seen the terror and agony of a mother conscious of an impulse to destroy her child, and striving against it with vehement resolution. A lady came to me lately to consult me, and this was part of her conversation:—"Thoughts of putting myself away come suddenly into my mind when I am working and quite cheerful. Oh! my God! if I could get these thoughts out of my head what would I not give? I could and do scream for relief sometimes. Oh, me! it's horrible! It comes on me that some day I will take away my life or that of my children. I had this idea before I was married at times. My mother had it. It comes on me in one instant, and some day I will not be able to resist it. It seems now as if there was a galvanic battery up from your floor up to my brain that makes my head feel queer and tingling. Filthy words and bad thoughts shoot into my mind, too, in the same way." And she threw herself on her knees in an agony of

distress, beseeching God and me to deliver her from these homicidal and suicidal impulses. Yet a minute before she had been cheerful and laughing, and a few minutes after she was the same. This condition passed into an ordinary attack of melancholia, from which she recovered in due time. No doubt the theory of uncontrollable impulse is liable to abuse, and to be applied where it does not exist; but one might as well assume that there is no real epilepsy because malingerers and hysterical girls simulate fits, or that there is no such condition as hypnotism because rogues, fools, and quacks dabble in deceit and call it mesmerism.

Etiology.—The states of defective inhibition and impulse may be momentary in duration, or may be constant. They may be slight in form, or most intense. Their etiology is as varied as their duration. As a general rule they are met with either in those hereditarily predisposed to the neuroses, or in those whose normal brain functions have been impaired by over-indulgence in alcohol or nervous stimuli on the part of themselves or their parents. In some few cases a merely defective training of the brain in youth seems to end in morbid hyperkinesia. No doubt, if we could devise a perfect mode of teaching self-control to the young brain, it would be an educational discovery, the most valuable yet made by humanity. The great crises of life sometimes set up this condition—puberty, adolescence, the climacteric period, and senility. In many cases there have been congenital or early defects of brain development, causing volitional and moral imbecility, or what Morel called instinctive juvenile mania. Visceral derangements and reflex irritations are the causes in many cases. Who does not feel his volition or self-control sympathise with the state of his digestion? I know a young woman who, during menstruation, which was with her difficult and painful, did all sorts of impulsive acts—eat dirt, hurt herself, and pinch children,—while she was at other times amiable, and did none of these things. There is no doubt that the organic instinct of reproduction sometimes becomes

transmuted morbidly into instinctive impulses to kill, steal, &c.

Varieties.—I shall confine my observations to the commoner and more typical varieties of morbid impulse, and they are the following :—

a. General Impulsiveness.
b. Epileptiform Impulse.
c. Animal and Organic Impulse.
d. Homicidal Impulse.
e. Suicidal Impulse.
f. Destructive Impulse.
g. Dipsomania.
h. Kleptomania.
i. Pyromania.
j. Moral Insanity.

General psychokinesia, or impulsiveness in all directions, is well illustrated in the following case, who was a patient of mine in Morningside :—

E. T., æt. 47, of a very neurotic heredity, a brother being insane and epileptic, and a sister insane. In addition to this, she has had twenty years of sorrow and domestic worry, with a drunken husband who could not provide for her, and through the loss of several of her children. She has had ten children and nine or ten miscarriages. The children whom she lost all died of convulsions or hydrocephalus. The exciting cause of her illness was an abortion at two months. She was very impulsive on admission in all ways. She tore her clothes, she tried to jump out of windows, she refused food at times when she did not get what she wanted, she would do any mischief that was in her power. Between those acts she was rational in speech and conduct, affectionate, and agreeable. She would be dancing, lively, and chatty in the drawing-room, apparently one of the happiest women there, and, seeing an open window, she would suddenly change in expression of face and eyes, would step towards it, and try to throw herself over. When asked about it she would say

she could not help it. She was always most impulsive at the menstrual periods, and at these times frequently had retention of urine, needing the catheter—this she had been subject to occasionally during her married life. The bromides, fattening non-stimulating foods, fresh air, baths and constant supervision, discipline, and occupation were all tried, with a gradual good effect. The impulses became less intense, and her self-control more, as her bodily condition improved. She was subject to sudden feelings of what she described as "unutterable dread and woe," coming like a flash over her, and passing away as quickly. Unfortunately, at first we gave her chloral and hyoscyamus at night, which I found was a mistake. She became very dependent on these things for sleep. She did much better when they were stopped. Now I never give chloral for long where there is impulsiveness. I believe that its effect is to lessen the inhibitory mental power of the brain. In about three years she had improved considerably, and was removed to another asylum, and ultimately, after ten years, made a good recovery. It must be remembered that all these impulses, obstinacies, violences, destructivenesses, and suicidal attempts were contrary to the whole habits of the life of this lady till she was 47; that they then lasted more or less for nine years; and that between those acts of impulsiveness she was one of the most agreeable and sensible persons I ever saw, and was clever, witty, and often hilarious.

The next case was a very striking one, and was well described by one of the former assistant physicians here, Mr James Maclaren.[1] I look on it as being *generally impulsive and to some extent mentally epileptiform in character.*

"Late one night a lady, whom we shall know as E. U., was brought to the Royal Edinburgh Asylum, labouring under great excitement, and bleeding from wounds in her mouth caused by her attempts to swallow pieces of the glass of a cab window which she had broken. Her insanity was very early seen to be of a kind in which the leading features were

[1] *Medical Times and Gazette*, January 8, 1876.

impulsive acts of a sudden and a most dangerous character to herself and to others. She is not an epileptic; she has no definite delusions or hallucinations. In her the paroxysm of violence has the following characters:—It is periodic; it is accompanied by always partial, frequently total unconsciousness, and consequently followed by a similar state of forgetfulness of her acts; it is preceded by a sharp pain in the head, and followed by a dull pain in the head, dizziness, and confusion of ideas. There exist also certain neuroses, but these will be detailed in the course of the history of her case, which it will be well now to enter on.

"She is forty-three years of age, the fifth child of a family of fourteen. Her parents are both of a neurotic type; her father is almost totally deaf, and a brother of his died insane. Her mother dwells on the borderland of insanity; she was always a person of very peculiar disposition, suspicious, unreasonable, and of an exceedingly high-strung and nervous temperament. This was her condition previous to marriage. Its cares and troubles, and particularly the mental and physical wear and tear involved in the bearing and nursing of fourteen children, told badly on her. Her confinements were severe, and after them she was subject to alarming floodings; at her menstrual periods, too, the hæmorrhage was always excessive. That all this told on her severely was noticed by her friends in her increasing debility, nervousness, eccentricity, and irritability as she advanced in years, and, to any one who could read the lesson, was confirmed by what seems to me a very curious fact. She had, as I have said, fourteen children. The first four of these were fairly healthy, and are still living; then came the subject of the present note, regarding whose mental and physical health we shall presently hear; and after her came nine children, all of whom are now dead. The elder ones lived longest, and then, as the mother grew in years, and the strain on her became greater, the duration of the life of her offspring shortened. It is true that none of them died directly from brain disease; still it

does not seem too much to assume, with the history I have described, that the parents were at first able to procreate healthy offspring, that this began to fail with E. U., and that after her the strain became greater and greater, and so they produced children only in the poorest degree endowed with the power of living. The inverse ratio between the age of the parents and the duration of life in the offspring seems too marked and definite to be due to accident or chance. So, then, in this neurotic couple we have them in their early married life transmitting to their children health, later on insanity, and ultimately a tendency to early death.

"And here, forestalling its position in the history of her case, comes in another step in the descent and progressive degeneration. E. U. has become pregnant several times; one child is alive, one lived a few months, all the rest were born prematurely. The child which is alive is, as regards his mind at present, precocious and talented, writes letters in a style beyond his years, reads books on natural science, and is fond of sketching and painting, and thought exceedingly gifted by his friends. He was stunted in body, weak and miserable when young, and often barely kept alive by constant and most careful nursing, but developed into a strong-looking lad.

"I have now to speak of the personal history and characteristics of the unfortunate lady who is the subject of this sketch. As I have said, she was the fifth child of her parents. In her early years she was only noted for everything that was good and amiable. In this I am not taking the words of possibly too partial friends, but of others who knew her more or less intimately; and one and all bear testimony to the fact that, as regards the possession of many good qualities, she was far above the average. Kind and loving, very gentle and quiet, but apt to become emotional on trifling provocation; devoted as far as her strength permitted to all good works, generous even to a fault, and earnest in season and out of season to do her duty,—such is the account of her in her early

days. From her earliest years religion was part of her daily life, not engrafted on to her other duties, but forming the moving principle of all she did. She belonged to a devout family and an earnest sect; and so, by education as well as temperament, was thoroughly and entirely devoted to sacred thoughts and duties, and was noted among her friends for the emotional fervour and power of her prayers. In ability, too, she was above the average—clever, studious, and painstaking.

"At the age of twenty-three she married her present husband—a gentleman in every way calculated to make her happy. It was long before he noticed anything particularly strange in her manner or conduct. Certain slight peculiarities, a morbid sensitiveness as to possible wrong-doing, occasionally excessive emotionalism; and once or twice, when in circumstances calculated to excite or distress her (such as being in the company of uncongenial people or those of a higher social rank), a tendency to become rambling and incoherent, —these were, as far as he can remember, the only facts that called for notice or excited alarm. Still they were of the slightest.

"Some years after she was married, and ten years ago, the boy already mentioned was born, but previous to that, and since, she had several times aborted. On each occasion her bodily weakness from excessive flooding was great, and her mental distress at the unfortunate issue very painful. Two years ago she again became pregnant, and, greatly to her joy, was delivered of an apparently healthy boy, and for a little while the caring for it seemed to restore the balance of her mind. However, it was only spared to her for a few months, and its death and the final and marked access of her insanity followed each other. During her pregnancy, and for some months before, the little abnormalities I have mentioned were beginning to be more and more marked. Her religious feelings became of the most exalted character, and her emotionalism excessive. On one occasion while walking with her husband in a frequented place, she knelt down

and prayed for strength to bear her coming trial; and her benevolence and generosity, always prominent features in her character, became almost unbounded and frequently quite unreasonable. When the baby came, her attention was taken up with it, to the exclusion of everything and every one else. Then it was taken away, and from that time is dated the marked unmistakable arrival of the insanity. General excitement, an altogether morbid and excessive fear regarding her religious state and future salvation, and an excessive sensitiveness as to the possibility of ever having in any way wronged any one with whom she might have had dealings, were the early symptoms she displayed. Then sudden and unaccountable outbreaks of dangerous violence, attempts at self-destruction occasionally, and most destructive tendencies in every respect, rendered her removal to an asylum imperative. She was accordingly taken to a private establishment, where she remained for a few months, gradually getting worse and worse. During this time a hæmatoma of the left ear developed itself, and ran the usual course, leading to the shrivelled and characteristic insane ear.

"First, as to her appearance—she is slight and almost undersized, a very gentle-looking lady, with a pale, pretty face, light hair, and blue eyes, a singularly kind, pleasant, winning manner, and a soft, quiet voice. Second, as to her mental state—free from excitement, she is what she has already been described as, thoroughly devout and good. Her memory and judgment are in all but one respect correct. Thoughts of her husband and child, bitter regret at her separation from them and at her sad calamity, a constant and prevailing desire to do what is right, and an excessive and morbid sensitiveness lest her slightest word, or look, or action may be in any way wrong. That is the bright side of the picture of a singularly pure but sadly imperfect nature. Now for the reverse.

"It is difficult in a pen-and-ink sketch to give an idea of the intense impulsiveness of her acts. She will sit reading her Bible or some good book, or talking in her quiet, gentle

way to her attendant, when suddenly, without a moment's warning, the book is flung through the nearest window, or at whatever is breakable at hand, then she makes a rush to run her head into the fire, or turns on her attendant, tears her clothes, or tries to strangle her. All this without speaking a word, except perhaps an occasional muttered text of Scripture; but beyond that, she keeps quite silent, and struggles on quietly but fiercely, till either exhausted, or restored by some apparent process of awakening to her former condition. Excitement, of course, there is in plenty, but it is very different from that associated with more ordinary forms of mania. There is no noise or shouting; her eyes are fixed and suffused, her face flushed, and her teeth clenched, and every muscle is on the strain; but the whole time she is perfectly quiet, and struggles on with a fixed determined purpose expressed in her whole manner, but without wasting a word. There is hardly a method of attempting violence that the mind could conceive that she has not had recourse to. At one time, but only for a few weeks, her acts took the form of exposure of her person, and in this, too, suddenness was the marked feature. I have seen her weeping bitterly at the sadness of her lot, and praying for some help, and while the words were still on her lips, throw herself on the ground, and pull up her dress. Once or twice about this time there was a slight increase of her general excitement, and she laughed and talked more than usual; but as a rule the exposure was something altogether different from the ordinary suggestive act of an erotic female. This tendency to exposure, however, did not last long, and has not returned.

"Now, as to the nature of her paroxysms. Though not very definite, there is no doubt that there is a certain amount of periodicity in them. It is not hard and fast, but her attendants notice that she has, as they put it, a good day and a bad one, or two good days and two bad ones. Then—and this seems to me a very important point in her history—there is, as a rule, entire unconsciousness and forgetfulness of what passed during an attack. I have often taken her carefully

over the events of a day in which one had occurred, and invariably found her correct and precise in every detail till we reached the onset of the seizure. Then all was a blank, and she only remembered that she seemed to faint, and then found herself lying on a sofa with an aching head, and confused and stupid. Occasionally, and if her seizure has not been very severe, she has some slight recollection of her act and of the impulse which led to it, and the latter is always a feeling of imperative necessity that it is her duty to do as she has done; but in by far the greater number of her attacks unconsciousness during and after was the rule.

"There are a few physical phenomena connected with her case that I will now mention. The insane ear has already been recorded. Her tongue is tremulous, and points markedly to the right side. After an attack she has a slight stutter and thickness of speech. The right pupil is more dilated than the left. During a paroxysm both pupils dilate and contract constantly and independently of each other, so that sometimes one and sometimes the other is the more dilated. Her hair is exceedingly dry; her temperature is normal, with a steady increase of two points in the evening over the morning figure. Her menstruation has not returned since her last child was born. Her sensibility is at all times dulled; during an attack it is greatly impaired. The reflex action of the cord is much dulled.

"What is the nature of her insanity? Her attacks, read alone, seem only to want one factor—epilepsy—to make all complete. This, though, is wanting; she is not epileptic now, and has never been so.

"It is a strange condition of dual consciousness. Whether she remembers in each paroxysm what happened in the last I cannot say, but I think she does, and it is certain that she follows out trains of thoughts in successive attacks of which she has no consciousness during a remission. For instance, of late, as soon as a seizure comes on her, she makes particular efforts to get at one special picture in the room. When the attack has passed, this picture awakens no feelings in her at all,

and she has no recollection of anything particular connected with it; but as soon as the excitement returns, her attention fixes on it at once."

In the course of three years she gradually became less dangerous and the impulsive attacks less intense, while her mind became more enfeebled. She got so much better that she was taken home under the charge of a nurse, seemed to be almost demented, and quite incurable. The impulsiveness seemed to have disappeared, but after nine years she suddenly committed suicide.

Epileptiform Impulse.—Epilepsy, as we shall see in the psychosis commonly associated with it (epileptic insanity), tends remarkably towards impulsive acts, which will be considered under that form of insanity. By epileptiform impulse I mean those sudden impulsive acts, attended by unconsciousness, which are exactly the same in character as those we are familiar with in epileptics, and yet the patients are not subject to ordinary epilepsy. Some of the acts of the last case, E. U., were clearly of this character. I have now a patient who brought on his disease by over-drinking, and who on one occasion leaped through a window on the third story when quite sober, and did not know anything about it afterwards. On another occasion, in passing the corner of a building in the Asylum, he ran violently against it with his head, causing a wound five inches long, and very nearly breaking his skull-cap. He is not a regular epileptic, but he once took a convulsive epileptiform attack. His case is incurable, he is now getting partially demented, and his impulsiveness is passing off. The regular use of the bromide of potassium seemed to diminish the impulsive tendency.

Animal and Organic Impulse.—Under this term I include all the uncontrollable impulses towards sexual intercourse, masturbation, sodomy, rape on children, bestiality, &c. The perverted instincts, appetites, and feelings shown in urine drinking, eating stones, rags, clay, nails, &c., come under this heading too. There are few cases of mental disease where

some appetite or instinct is not in some degree perverted or paralysed. But there are cases where such things are so prominent as to constitute the disease. I have a patient who assures me that his desire to masturbate is an irresistible craving, which he has no power to control. Here is a girl who rubs her thighs together to produce sexual excitement the moment she sees a man. Here is a case of nymphomania, who rushes towards any man she sees, and can scarcely be held by two attendants. The cases of "contrary sexual instinct" ("Urnings") to whom I have referred (p. 277) frequently show insane loss of control. I believe there are cases in which there are irresistible impulses towards sodomy and incest. Many of the men who commit rape on children are insane. I lately had to give evidence at the Carlisle Assizes about the insanity of a medical man who had tried to commit rape on three children under age in succession. No doubt he had the delusion that God had in some occult way revealed to him that he should beget a male child, and had sent the little girls to him for this purpose; but he was practising his profession up to the commission of the act. I have referred to the case of the young woman who had an impulse to eat clay and dirt every time she menstruated. She could not help it, and had no such tendency between. A shoemaker patient in the Prestwich Asylum swallowed a few shoe-nails every day, and, what was strange, was none the worse. There is an infinite variety of such impulses. Erotomania is a term applied to those cases where there is an intensely morbid desire towards a person of the opposite sex, without reference to the sexual act. It is a sort of exaggerated and insane state of "being in love."

Homicidal Impulse.—Homicidal impulse is often spoken of by lawyers, publicists, and ignorant persons as if it were a thing that did not really exist, but has been set up by the doctors to enable real criminals to escape justice. Here is a letter from a former patient of mine, E. V., a medical man of truthfulness and great benevolence of character, written to

me when he was convalescent, exhibiting vividly homicidal impulse:—

My Dear Sir,—According to promise I have written to the best of my ability what I feel mentally. God alone knows my feelings. They are truly awful to know. I lived in continual fear of doing harm each day. I had not a moment's peace in this world. I have been in practice for twenty-three years, and have attended 2550 midwifery cases, which used to take the life out of me more than anything else. I often used, when busy, to attend 60 or 70 patients a day at home and out, and in the winter used to average 28 a day at their houses. I have had no holiday for many years. I did not think I was laying the seeds of brain disease, but such has been the case in the most dreadful form. I loved my dearest wife and little ones most dearly, and my home used to be so happy and cheerful after my hard work. You are aware I had a very long illness in bed, had several operations, erysipelas, &c. Two years previous to this I had a fall on my head, which stunned me at the time. I may say I have never felt really well since the fall, though I did my practice. I had occasional strange feelings, but those were only known to myself, being ashamed to mention them; in fact, all the time, up to within a short time of coming under your care, I appeared cheerful and even jolly. But when in a train I was afraid I should jump out of the window, and when I saw one in motion I felt I must jump under it. I was afraid, when applying nitrate of silver to the throats of my patients, that I should push it down. I was terrified to apply the midwifery forceps, lest I should not be able to resist the impulses I had to drive them up through the patient's body. When opening abscesses I felt as if I must push the knife in as far as possible. When I sat down at my own table I used to have horrible impulses to cut my children's throats with the carving knife. At the sight of pins I had a feeling as if some had got into my throat, and I could not divest myself for some time of this feeling. I had other strange feelings which I can hardly describe. Whenever I saw a knife, razor, gun, &c., I was afraid I should do harm by a sudden impulse, the will having hardly the power to resist. I took opium several times from no deliberate intention but by a sudden impulse that I could not resist when I was working with it in the surgery, but I vomited it.

My brain feels quite dead, with no feeling in the scalp; my eyes seem as if something were dragging at the optic nerve continually. In the left I have a most unpleasant feeling to bear, and I cannot see distinctly with it. There appears to be something floating in front all the time, like a dark shade. I should say I am, and have been, suffering from homicidal monomania and moral insanity, and have been since June last, although a part of the time doing my practice and living with my family. I thought I could shake it off, but such was unfortunately not the case.

Thanking you most sincerely for the kindness and attention shown to me since I have been a patient in this Asylum, I am, dear sir, yours faithfully, E. V.

Now, this is either a tissue of lies, or the thing "homicidal impulse" exists. This unfortunate man had placed himself in the Asylum of his own accord, and he took a gloomy view of his prospects of recovery. I did not do so, but assured him he would recover, and adopted every means for that purpose; gave him tonics, got him employed and interested, made him live in the fresh air, and go to all sorts of amusements in the Asylum and out of it. I am glad to say he recovered, and went into practice, and unfortunately got as much to do as ever, and relapsed. This time he showed his impulsive tendency and loss of inhibition by taking to drink, which looked like a symptom of his brain disorder. By temperament he was a sanguine man, strong, hearty, robust, and jolly. In fact, he was a perfect Mark Tapley in his unfailing cheerfulness under difficulties and disasters. He was an immense favourite with the ladies here, and to see "the doctor" being taught by them to dance a Scotch reel was a sight far away from any suicidal or homicidal idea. Yet in the midst of this a dark shadow would sometimes cross his face, and he would say to me, "Oh, doctor, these strange feelings; if they would only keep away I should be as happy as I look."

This is merely one case, but it is a typical one. E. V. had no insane delusions—he could reason well; affectively he was fond of his wife and family and friends; he had not a cruel or criminal disposition—quite the reverse; he had no outward excitement, no signs of outward depression like an ordinary melancholic patient; he had no "motive" to do so, yet he wanted to kill his patients and his children, and had much difficulty in restraining himself from doing so, and he actually could not restrain himself from suicidal acts. All these feelings were connected with an original heredity to mental disease, with a brain injured by the fall, and exhausted by

hard work and insufficient rest, and with a running down of his general vital power by the bodily disease he had lately suffered from. They had as their accompaniments those marked sensory and special sense feelings described in his letter, which were really essential parts of his trouble. They disappeared under rest, change, proper medical and moral treatment. The whole affection was just like many other diseases in its causation, inception, and recovery. What room, therefore, is there for doubt that such a disease exists? That the theory of uncontrollable homicidal impulse should have been used in courts of justice to screen real murderers or would-be murderers is surely no reason for disbelieving important facts of disease. It is our duty as medical men to examine carefully the evidence in every case where a homicidal impulse theory is set up to explain crime, to look on any such case suspiciously perhaps, to search for other symptoms and causes of mental or nervous disease accompanying it, but we must not be frightened into blinking real facts and real disease. An admirable example of homicidal impulse was described by Dr Elkins in the *Edinburgh Medical Journal* for September 1890. It is well worth study. The following was a striking case of the same sort:—Joseph Redmond, æt. 49. Had been in the army in India, and while there drank hard, had sunstroke and syphilis, and he since could never stand alcohol. He came home, married, kept a shop, and made money. He lived comfortably and happily with his wife, who was a sober, well-conducted woman. He was subject to "fits of passion," during which he did not know what he was doing. He was also suspicious, and seems to have had hallucinations of hearing in the shape of "voices," which were those of old friends, telling him to do certain things. When he got "a glass," which he rarely did, he seems to have become dangerously homicidal. In one of those conditions he stabbed his wife. When he came to himself he had no recollection of what he had done, and was horrified and dejected. He was sent first to the Asylum to

await his trial; while there he would certainly have committed suicide from pure grief and remorse had he not been constantly watched. He only slept after getting ʒiss. of paraldehyde, but was quiet in conduct and quite rational, except that he still heard the "voices." He was sent to the lunatic department of Perth Prison "during Her Majesty's pleasure." I had no doubt that the sunstroke and drink together in India had caused damage to his brain cortex. I have since had a brother of this man who laboured under similar symptoms.

Homicidal impulses in a mild way are very common indeed in the beginning of mania and melancholia. Patients feel as if they must kick and strike those near them, and they often do so. It is a relief to them to do so. Such impulses are often part of the nervous disturbances that accompany puberty, disordered menstruation, childbirth, lactation, and the climacteric period in women. I once saw in gaol a girl of thirteen, whom I had no doubt had without motive killed a child entrusted to her care, though there was no legal proof of it. Margaret Messenger, a little girl of thirteen, was proved at the Carlisle Assizes, 1881, to have drowned a child of six months, of which she had charge, and she had previously killed its brother. Like all such cases, she had no motive, and showed no mental excitement nor depression. She could not be made to realise the gravity of her situation nor the awful nature of the crime she had committed. This paralysis of feeling and of fear is very characteristic of such cases. She was described as a "typical country girl of her age, fresh, tidy-looking, and fairly intelligent." She was quite composed through the trial. After her conviction she confessed that she had killed the brother by throwing him into a well, into which it had been supposed he had fallen accidentally. I once had a patient, E. V. A., a lady with a child five months old when I saw her, and who, on medical advice, left her home on account of a morbid dislike to her husband and child, and homicidal impulses towards them.

During her pregnancy she had the same kind of dislike to her mother. She deplored these morbid desires to kill her husband and child intensely, because she was devoted to them, and a very affectionate woman. She had suicidal impulses, too, but not so strong. These were not the only symptoms of disease. She suffered from dull headaches, twitchings on the right side of her face when she spoke, impaired sleep, fever, slight albuminuria, aggravation of all her symptoms in the mornings, screaming fits, want of appetite, thinness, and a pigmented skin. Through change, absence from home, milk diet, exercise in the fresh air, iron, claret, and pleasant companionship and travel, she recovered in about four months, getting stout, fresh-coloured, and menstruation becoming regular. I have referred to the case of B. R. (p. 117), a climacteric case, and her tendency to kick, strike, and pinch her fellow-patients in the morning only, while in the evenings she would be cheerful, would dance, and enjoy herself. I had lately a man, E. V. B., with a neurotic heredity, an uncle being epileptic, who, when sitting at a window, dropped a big stone on to the top of the head of a casual passer-by, against whom he had no ill-feeling whatever. After he was sent to the Asylum we could see nothing wrong with him till one day he tried to stick a dung-fork into an attendant. He seemed to recover, and, after a long time of probation, he was discharged, but very soon ran after a relation with an open knife. He was sent back to the Asylum, showed no signs of insanity at first, and then his mind gradually became enfeebled, and he is now nearly demented, just as he would have become had his attack been one of mania. Homicidal impulse is thus seen to end in dementia if it lasts long, like any other kind of mental disease. I have seen a homicidal stage in the beginning of general paralysis.

Suicidal impulse. — I am speaking here, remember, of *suicide as an impulse unaccompanied by any marked mental depression or delusion. The following two cases exemplify what I mean:—*

E. W., a young man of 18, of nervous heredity, with no particular cause of mental or bodily disturbance, except perhaps an unrequited love fancy for the scullery-maid. He, being an assistant to a butler in a gentleman's family in Cumberland, seemed in good health, in good spirits, and was washing the dishes after lunch one Sunday. His master, from the dining-room, heard a peculiar sound in the pantry, and, going to see what it was, found E. W. hanging by the towel with which he had been wiping his dishes, his face livid, and nearly dead. After being taken down he was unconscious for some hours, and was then confused in mind for a day or two. He was sent next day to my care at the Carlisle Asylum, and I found him confused, and his memory defective. He could give no account whatever of the suicidal attempt, and was rather inclined to deny it, but the evidences of it were well-marked on his neck and face. There was no mental pain and no delusion. He did not sleep very well. He was sent much into the open air, and was ordered a little bromide of potassium. In a week there was not a trace of any mental defect whatever. He was not a strong-minded youth, but was not imbecile. He maintained through many cross-questionings that he never had a conscious intention or thought of putting an end to himself in his life; that he remembered events quite well up to a certain moment on the Sunday he was washing his dishes, but after that he had no recollection of anything whatever till the evening. I had no reason whatever to doubt the correctness of his statements, which were confirmed by the butler. He kept quite well when last I heard of him.

E. X., a young professional man of 30, whose father had been subject to "depression of spirits," and who had had chorea in his youth, but who was clever, cheerful, good-principled, religious, and successful. He was happily engaged to have been married in a fortnight. He had been spending the evening with some friends, and was in first-rate spirits. No melancholy nor morbidness whatever had been seen in

him. He had remarked to some friend casually some weeks before that he had to hold his head in a particular way or he saw things double He took a hearty supper, and went to his bedroom. In the morning his body was found suspended to a cupboard door by the worsted cord of the window curtain. He had undressed, and then, evidently without preparation or contrivance of any kind, taken the cord, which was sewn in a circle, thrown it as a loop over the top of the half-open door, put the other end of the loop under his chin, and, pulling up his feet, suspended himself. There was a strong presumption that it was not a conscious premeditated act. We found a large ossified spiculum of bone projecting from the dura mater into a convolution at the vertex at the junction of the anterior with the middle lobe, the arachnoid thickened, and the whole brain intensely congested. I considered the case one of unconscious suicidal impulse of an epileptiform nature. Such irritating spicula of bone of course often cause ordinary epilepsy, and this is not the only case of impulsive insanity in which after death I have met with the same pathological appearances.

Those were cases of morbid suicidal impulses accompanied by unconsciousness. Such cases are rare. *But cases who are quite conscious like the following are very common.*

E. X. A., a man of 55, who had been healthy and lively. For some months his enjoyment of life has been less intense, but he has had no real mental pain. For a few weeks he has had a strong impulse to take away his life, and the sight of a knife at once suggests this to his mind at any time. He deplores the feeling, and it annoys him, and he thinks himself "a fool" for harbouring "such nonsense" in his mind, but he cannot help it. He has no delusions whatever about being wicked, &c. The only other thing wrong with him is that he cannot sleep very well. Change of air and scene, after about two years, seemed completely to drive away the suicidal feeling, but his mental condition after was somewhat senile, his ambitious desires and enjoyments being toned down, and all

the keen edge of his life taken off. The suicidal impulses seemed to be a part of a climacteric mental failure in him.

When the uncontrollable impulse is towards self-destruction, even the lawyers do not deny its existence nor try to reason facts away. And they cannot attribute any sufficient "motive" for such persons as E. W. and E. X. putting an end to themselves, though this notion of a "motive" for suicide seems ineradicable in the public mind. Who ever saw an account of a suicide in a newspaper without an explanatory remark that "the motive for the rash act has not been ascertained"? It is impossible to tell how many of the 1600 annual suicides of England are the result of mere impulse, apart from mental depression, delusion, or alcoholism. It is common to find the suicidal and homicidal impulses combined, as in the case of E. V. (p. 351) to which I have referred.

Destructive Impulse.—In childhood there exists, from pure accumulation of nervous and motor energy, that must be let off somehow, a desire to play, to romp, to move, and to destroy. Most people experience a morbid muscular activity when they have "the fidgets," and few people but have the feeling sometimes that they would like to break glass or smash something. In many forms of mania and in excited melancholia we have destructive tendencies as one symptom of the general psychosis. In high emotional tension women often feel as if they must cry or break something, and many women in prison take regular periods of "breaking out," during which they tear and destroy clothes and property without regard to punishment or to consequences. In the first stage of general paralysis the morbid motor activity usually takes the form of tearing, and it is common for such cases to have all their blankets torn to shreds every night, and to tear their clothes during the day. But the same uncontrollable desire to tear or break may exist alone, without much outward exaltation or depression.

I show you now a young man of 25, *E. Y., whose mother was insane and his brother paraplegic, who for two years*

required the constant vigilance of an attendant to prevent him breaking windows and tearing his clothes. He actually broke over 100 small panes of glass, and tore 150 pairs of trousers. The reason he assigned for this was that he could not help it, and that it was "my conscience checking me" that did it. He was quite sprightly and jolly, would work in the garden, would dance at the ball as lively as any one, and was never suicidal nor homicidal, yet, when he saw a window near, he would eye it as if fascinated, and if he had a chance would spring at it and smash it, or throw something at it. He said it gave him great relief when this was done. He seemed to grow out of this tendency as he became more demented, which he did gradually. The habit of masturbation increased the tendency in him, and hard work in the garden ordinarily diminished it. The bromide of potassium and cannabis indica kept it in check.

I show you another patient, F. A., of 22, who suddenly when at sea took "smashing fits," the description of which by Dr Logie, his family medical man, was as follows:—"His bodily health is good, but he is subject to sudden fits of something like insane impulse, continuing sometimes for a few minutes only, and at others for a whole day. During their continuance he has no control over his actions. He says he knows he is doing something which he ought not to do, but he cannot help it. At one time the presence of the fit is manifested by his roaring aloud and using very bad language; at another he will suddenly jump up, seize a chair, dash it with violence on the table, smashing to atoms dishes, cups, and saucers, or whatever else may happen to be on the table. When in these states he is exceedingly violent. When interfered with on one occasion he knocked his mother down, and on another threatened to shoot his father, who was trying to control him. Unless when the fits are on him he is perfectly quiet and reasonable. He believes that the fits are occasioned by a person who has power over him, and can make him do as she likes, and that she first obtained that power by putting

something in his tea." After admission he would be rational and self-controlled before these attacks, and again after. For months he had the tendency, though it was less intense and less frequent. As the period of adolescence was passing into manhood and his beard was growing I expected him to recover. I watched him one night at a dance. He looked absent-minded and aimlessly restless. I spoke to him, and he answered me rationally. He looked pale, and his eyes were glistening. He stepped towards a window, and suddenly smashed it with his hand, causing a wound. At once he seemed to get calm and quiet, and felt relieved. After a year or two he recovered.

A Glass Smasher.—We had on two occasions, as a patient in Morningside, a man named James Morrison, who at intervals of several years had left his home in a Fife village, where he worked as a weaver, and had gone to Glasgow once, breaking some windows in the Cathedral, and to Edinburgh twice, breaking some large plate-glass windows in shops always quite coolly, by throwing stones at them. After coming to the Asylum we could scarcely ever detect any symptoms of mental disease. He seemed to have expended all his morbid energy in the one act each time. He was a man of neurotic heredity and good character, who had no motive for getting into gaol. He always said he could not help smashing windows; that the desire to do so used to come on him in his home in the Fife village, along with a restless unsettled feeling; that he did not break the windows in the houses of his village because they were too small and "not worth breaking." It evidently would have given no satisfaction to his morbid desire to break them. I presume his was just a strong and uncontrollable form of the feeling which many men have when standing before a big plate-glass window with a cricket-ball in their hands.

Dipsomania.—This is a misnomer; we do not mean an insane craving to drink. What is meant is a morbid uncontrollable craving for alcohol and other stimulants and narcotics.

What we really want is a good word to express the craving for all sorts of neurine stimulants and sedatives. The confirmed opium eater, the inveterate haschisch chewer, the abandoned tobacco smoker are all in the same category. No medical man who has been long in practice can doubt for a moment that there are persons whose cravings for these things are uncontrollable, and who have therefore a disease allied to all the other psychokinesiæ. Particularly the morbid craving for alcohol is common, and so intense that men who labour under it will gratify it without regard to their health, their wealth, their honour, their wives, their children, or their soul's salvation.

Causation.—Certain causes predispose to it. These are (1) heredity to drunkenness, to insanity, or to the neuroses; (2) excessive use of alcohol, particularly in childhood and youth; (3) a highly nervous diathesis and disposition combined with weak nutritive energy; (4) slight mental weakness congenitally, not amounting to congenital imbecility, and chiefly affecting the volitional and resistive faculties; (5) injuries to the head, gross diseases of the brain, and sunstroke; (6) great bodily weakness and anæmia of any kind, particularly during convalescence from exhausting disease; (7) the nervous excitement and disturbances of menstruation, parturition, lactation, and the climacteric period; (8) particularly exciting or exhausting employments, bad hygienic conditions, bad air, working in unventilated shops, mines, &c.; (9) the want of those normal and physiological brain stimuli that are demanded by almost all brains, such as amusements, social intercourse, and family life; (10) a want of educational development of the faculty and power of self-control in childhood and youth; (11) the occasion of the recurrences in alternating insanity, or the beginning of ordinary insanity, the morbid craving being coincident in a few of these cases with the periods of depression, but mostly with the beginning of the periods of exaltation; (12) the brain weakness resulting from senile degeneration. More than one of these causes may, and often do, exist in the same case.

Sane or Insane?—The neurine-stimulant craving is commonly associated with impulses or weaknesses of control in other directions in the majority of the cases, but there may be no insane delusion. Yet all the faculties and powers that we call moral are gone, at all events for the time that the craving is on. In typical cases the patients lie; they have no sense of self-respect nor honour; they are mean and fawning; they cannot resist temptation in any form; they are often morbidly erotic, especially at the beginning of an attack; they will steal; the affection for those formerly dearest is suspended; they have no resolution and no rudiments of conscience in any direction. The common objection to reckoning such persons among the insane is that, though they have brains predisposed by heredity, they have often brought this condition on themselves by not exercising self-control at the period when they had the power to do so; but this applies to many cases of ordinary insanity. Another reason is that, when deprived of their stimuli for a short time, they are sane enough in everything except resolution not to take to them again. The excessive use for a long period of nerve stimuli of all kinds tends to diminish the controlling power of the brain in all directions, and to lower its highest qualities and finest points. The brain tissue is so complicated and delicate, and its functions are so inconceivably varied and so high, its anabolic and katabolic processes are so subtle, and the slightest disturbance may mean so much, that under the most favourable circumstances it runs many risks of disturbances of its higher functions. But when we have a bad heredity, a bad education, and a continuous poisoning with any substance that has a special affinity for its texture, disturbs its circulation, and paralyses its blood-vessels, that excites morbidly its cells, that proliferates its neuroglia, thickens its delicate membranes, and poisons its embedding lymphatic and cerebro-spinal fluids, we cannot wonder that its functions then become impaired, and are not fully nor readily resumed in all things. The unfortunate peculiarity is that, while we may restore the bodily and even the nervous tone so far as vascularity, sleep,

and sensory functions are concerned, we have the utmost difficulty in restoring the higher functions of self-control and morality in some cases. A dipsomaniac when at his worst is readily recognised to be so really insane as to be in a fit state to be placed under the control of others for proper care. When he is at his best—after a few weeks' compulsory deprivation of his brain poison—he is so like the rest of the world in all essential things that it is very difficult to get lawyers or politicians to frame laws to deprive him of his liberty. We cannot regard the drink craving alone. We must be prepared to deal with the opium eater, chloral taker, cocaine injector, and ether drinker. The state of brain in all these is the same in its essential nature. It would be inconsistent to provide against and try to cure the one without including the others. The Legislature must face the question and provide some remedy for this great evil to society, and the intolerable hardship to the relatives of such persons. The law may not be able at first to cover the whole ground, but it can do something. Already several commissions have reported strongly in favour of compulsory powers to treat such persons, and the whole medical profession, who see most of the terrible results they inflict on society, on their relations and themselves, are unanimous on this question. We are helpless till we get such an Act passed by Parliament.

I shall now show you a typical dipsomaniac, F. B. His mother had been melancholic at one time, and her family was a neurotic and insane one. He was of a nervous temperament from the beginning; a flesh eater from a child; precocious and quiet, but not dogged in application; vain to an almost morbid extent, and in some points not endowed with common sense. At puberty he had a slight attack of chorea. About 17 he showed keen social instincts, but no realisation of the seriousness of life. Especially the *nisus generativus* was periodically so strong as to be difficult of control, and he did not control it. Becoming a "jolly fellow," and mixing with such, he took alcoholic stimulants of all kinds very freely, and showed a very

great fondness for them. He occasionally got drunk. About 20 he was addicted to bouts of drinking and whoring, which came on periodically, and seemed to pass off and leave him fit for his work. He was ashamed of them afterwards, and I believe at this period, by his volition and self-control, he sometimes checked his indulgence in them even when the crave was on him. At 22 he was very distinctly worse. He had less power of applying himself to anything. He took almost regularly recurring bouts of drinking, during which the craving for alcohol was intense and quite irresistible. I have known him drink turpentine, eau-de-Cologne, and chloroform when he could not get alcohol. He was nervous, tremulous, and unable for any kind of work while the fit lasted. He would lie, cheat, steal, and associate with the lowest characters at those times. When he recovered he was facile, lacking in conscientiousness, and somewhat unveracious, though a charming companion. All sorts of things were tried —long sea voyages, a colony, isolation in a doctor's family,— but no permanent improvement was produced. He sank lower and lower mentally and morally, till at 30 he was really weak-minded and unfit for respectable people to associate with, and unable to do any work of any kind. Not an atom of self-respect was left in him. He is now in a mild state of dementia.

The above is the developmental type of dipsomania. I have only known a few such who recovered. Treatment is usually begun too late. In reality, persons with such a constitution of brain should live on milk and farinaceous food in childhood, should not be brought up in cities, should never touch alcohol, should be trained in strictest morality and with little temptation, and should not lead exciting hard lives. After they have become dipsomaniacs they are a curse to all who have to do with them, a nuisance and a danger to society, and propagators of a bad breed. The essential texture and working of such brains are bad, just as much, but in a different way, as an ordinary insane man's. Such

cases may be called dipsomaniacs by natural development. There is an essential weakness of mind underlying that sort of case. It is an example of a neurosis of development, ranking with chorea, consumption, and adolescent insanity.

Here is another kind of case that might be called reflex. F. C., a married woman, the mother of a large family. She was quite well, and showed no drink-craving till she was 30. When pregnant with her sixth child—the three previous children having been all born and suckled within five years, all her labours being hard, and in one case with *post-partum* hæmorrhage—she became suddenly changed mentally and morally. She got careless, slovenly, lazy, self-indulgent, neglectful of her children and family duties, evidently not so fond of her husband and children, irritable, and untruthful. In addition to all this she took to smoking and drinking. This continued till three months after the birth of her child, when she became slightly depressed for two or three months, and was then quite well till next pregnancy. The same condition that I have described came on again. It has come on and gone off with a certain regularity fifteen years now. I expect it to cease at the climacteric period. She has had, by the way, two attacks of convulsions. *This form of dipsomania I look on as an undoubted insanity and one allied to alternating insanity.*

Here is a common kind of case through excess. F. D., an educated professional man, whose heredity I could not ascertain, who had worked very hard, and had been very successful; a man of power, of a nervous enthusiastic temperament, and of great natural endurance and capacity for work. He had taken too little holiday, and unfortunately, from a mistaken idea of its real use, had committed the common but terrible mistake of trusting to alcohol to restore his weariness, keep himself up to his work, and produce sleep. It seemed to do this at first. But he soon could not work nor sleep without it, and it lost its power, so that he had to take more of it, and oftener. At last

he got absolutely dependent on it, but it would not make him work enough. He took still bigger doses, and had an attack of acute alcoholism. After this he pulled up, but only for a time, and he took to it again with the firmest resolve to restrict himself to small doses. In six months he was as bad as ever, and had several severe alcoholic convulsions. This occurred again and again, and he became temporarily maniacal, with all the motor symptoms of alcoholism. He got better of this, took to drink again, and had convulsions, mania, and alcoholism. Morally he became weak, untruthful, and unreliable, but never so bad as the youthfully developed dipsomaniac F. B. He died, after a few years, demented, with partial paralysis and diseased neuroglia, membranes, and arteries, and with the degenerated brain neurine that usually follows the continuous excessive use of alcohol.

The above seemed to be a case of dipsomania caused simply by the excessive use of alcohol damaging an originally good sound brain. There is much hope in such cases if taken in time, if they can then be made to see the importance of absolutely abstaining from alcohol altogether. The continuous use of the bromide of potassium I have found useful in many such cases. It diminishes the intensity of the craving, and lessens the excitability of the brain. Never in this nor any other class of insane drunkards think of tapering off the drink. Knock it off at once, and completely. I never saw any dangerous result from this, but of course the patients suffer horribly.

The moral treatment and management of dipsomaniacs is now, in the present state of the law that does not allow legal interference with their liberty, one of the most unsatisfactory things a medical man has to undertake. The relations and friends of patients will implore you to do something or recommend something, yet nothing can in most cases be done. Lunatic asylums are certainly not the proper places for them, and when sent there they cannot be kept long enough to do

them much good. What we want is an island where whisky is unknown; guardianship combining authority, firmness, attractiveness, and a high bracing moral tone; work in the open air; a simple natural life; a return to mother earth and to nature; a diet of fruits, vegetables, bread, milk, eggs, and fish; no opportunity for one case to corrupt another; and suitable punishments and deprivations for offences against the rules of life laid down—all this continued for several years in each case, and the legal power to send patients to this Utopia for as long as medical authority determines, with or without their consent. That would be the ideal mode of treatment. In real life the best thing we can do is to send our cases to distant farms or manses, or doctors' houses in remote parts of the Highlands and Islands, under a firm moral guardian. I am very sceptical about institutions for dipsomaniacs where many of them are together. In that case the moral atmosphere tends to be low, the patients keep each other in countenance, you cannot restore the sense of shame and of self-respect, and they plot and fan each other's discontent. *Till an ordinary dipsomaniac wants to be cured, no power on earth will cure him.* In that case, no law permitting forcible seclusion will do any permanent good in the way of cure. It is easy in many cases to produce a temporary amendment, to rouse a sense of shame and regret for the time being, but what is the use of that when they return to the world, if there is no power of inhibition against the first glass, and when the first glass creates an irresistible craving for the second?

We must take care not to call a case of mild mania, or one of melancholia, or a case of epilepsy, or paranoia, one of dipsomania because there happens to be a craving for drink. In such cases this craving is merely one symptom of a general brain disturbance.

Kleptomania.—This interesting variety of uncontrollable impulse seldom exists alone without other morbid mental symptoms being present. The mere uncontrollable desire to

appropriate for one's-self what does not belong to one is an instinct strongly developed in the animal kingdom, in primitive and savage men, in children, and in many kinds of mental disease. Imbeciles appropriate and hide what they fancy, just as jackdaws do. The desire is there, and there is no inhibition. In general paralysis appropriation of all kinds of things is very common. I have now a patient who every day stuffs his pockets with rags, stones, bits of glass, broken pottery, &c., till he looks as if he had a meal bag on each side of him. Every night his attendant throws these things away, but the process is repeated to-morrow. I once found a general paralytic trying to stuff the coal-scuttle into the back-side of his trousers. Some demented patients steal everything they can lay their hands on. I have very rarely met with a pure case of kleptomania without other mental symptoms.

Pyromania.—A good deal has been written on the morbid tendency to set things on fire. There is no doubt that it exists, but there is more doubt about its existing alone without other symptoms of insanity. I now show you a marked example of the disease, combined with some melancholic depression of mind and with one or two delusions.

F. E., æt. 59 on admission. The cause of her attack was mental distress at a sister's becoming insane and dying in the Asylum. She was melancholic and suicidal on admission, and had delusions that she had been guilty of great crimes. At first she tried to commit suicide by tying pieces of cloth round her neck with which to choke herself. In six months her mental condition assumed the form of an intense desire to set things on fire,—to set her clothes on fire, to burn the house. She became impulsively violent at times. She set fire to her hair one day; another day rushed into the dormitory, shut the attendant out, shovelled the live coals from the fire on to a mattress, threw herself among the burning mass, and pulled another mattress on the top of her, severely burning herself, and, in fact, nearly ending her life.

She sits saying to herself, "I maun mak them low" (I must set them on fire) day by day. In four years this impulse to burn became less intense, and she was more enfeebled in mind, and in about six years after admission she was thought to have got quite over it; but one night she went into a dormitory and set all the bedding on fire from a gas jet, but did not attempt to burn herself or her clothes. Now, at the end of nine years, she is demented, but still has the remains of the old impulse, though in a very slight degree indeed.

I was once asked to see a man called J. F. Wilson, who was in the Edinburgh Gaol on a charge of fire-raising, having at two places set fire to stackyards. I found that he had once undergone punishment for a similar offence, and that on being taken up on this occasion, when going with the police sergeant to the station, he remarked on passing a big haystack—"That would make a fine blaze." I found him to be a case really of delusional insanity with a good deal of general enfeeblement of mind and hallucinations, hearing voices telling him to commit rape, and hearing the voices and screams of old friends often in the night. In addition to a desire to set things on fire, the sight of which gave him pleasure, he heard the voice of a female he had once known saying to him, when he was thinking of doing so, "If you are to do so, do it quickly." I considered the causes of his disease to have been heredity, drinking, and syphilis. He had suffered from one attack of mania, for which he had been in Colney Hatch Asylum. I did not think he had any chance of complete recovery. He was found insane, and sent to the lunatic department of Perth Prison, but was discharged recovered. Within a few months he again set some stacks on fire. This time I could discover no symptoms of insanity about him but a slight general mental enfeeblement, though I had little doubt he was concealing and denying insane delusions, and he received a long sentence as an ordinary criminal.

The majority of the cases where an uncontrollable desire to set things on fire is the chief symptom of mental impulse have been young persons about the age of puberty and adolescence, of strong nervous heredity. In 1895 a boy of this kind nearly succeeded in burning down Glenalmond School.[1] Dr Campbell Clark observes that a considerable proportion of puerperal cases try to set things on fire.

Moral Insanity.—The morals are lost or have become altered in many forms of insanity. The question is—Have we any examples where, from disease, a man who had up to that time been moral and conscientious, and obeyed in his conduct the laws and the social observances, but who had lost his moral sense while he retained his intelligence and reasoning power, having no mental exaltation or depression, and in consequence of that diseased moral condition, spoke and acted immorally? Further comes the question—Did he, when the diseased condition is cured or recovered from, regain his former morality in feeling and conduct? I have no hesitation whatever in answering both questions affirmatively, because I have seen such cases. It is not a question of theory, but of fact. A third question arises—Do we meet with children so constituted that they cannot be educated in morality on account of an innate brain deficiency, rendering them incapable of knowing the difference between right and wrong, of following the one and avoiding the other, of practising checks on inclination, of exercising self-control or obedience to the laws of God and man, of any love and cultivation of the good, or any dislike of evil? Such moral idiots I, like others, have met with frequently. Persons with this disease, and persons with this want of development, we say, labour under moral insanity. It must be understood that I do not say there are many cases, if any, where there is moral insanity with *absolutely no* intellectual or other mental disturbance whatever if the patient's condition is subjected to a careful

[1] In most of these cases there is partially arrested and unrelational brain development.

analysis. What I say is that there are many cases where the moral defects are really the disease, the intellectual defects, if present, being so slight that they would not have constituted insanity nor have interfered with the patient's work or position in the world.

Conscientiousness, the sense of right and wrong, is to a large extent an innate brain quality. We see this in children from the earliest age. Some have it strongly, without teaching or example; others have it sparingly, and need the most assiduous care to develop it. I have referred to a morbid conscientiousness that is sometimes seen at early ages in children, and in some of them is followed by a paralysis of the sense at later periods of life. I was once consulted about a boy, F. H., of ten, not an idiot nor an imbecile, but quick intellectually, who could not be taught morality. He really seemed incapable of knowing the difference between a lie and the truth,—at all events, he never could be got to avoid the one and tell the other. And he lied without any temptation, and with no object to be gained. His statements as to the most ordinary matters of fact were never believed, merely because he made them. He stole; he had little proper affection for his brothers and sisters and parents; he was incapable of the sense of shame. When punished or scolded he became mentally paralysed and in a condition of stupor, incapable of knowing or doing anything whatever. As this boy approached puberty he developed some moral sense. His grandmother had been insane. I knew another boy, F. I., one of a very neurotic family, grandmother insane, father a dipsomaniac, and two sisters melancholics, and other two with various neuroses, who was untruthful and immoral instinctively. No one who knew him ever believed a word he said. He stole, he had small affective power, and he never seemed to see why anybody should be offended at acts of immorality or dishonour, though he had been carefully and religiously brought up. In after life he turned out a selfish and negatively immoral man. He never paid any debt that he could help, and he

borrowed from every one he could. He treated his relations badly. He on several occasions did public acts that might have brought him under the cognisance of the criminal law. He did these things in a stupid way, as if he himself was quite unconscious he was doing wrong. Such cases are the bane and disgrace of their friends and families, and the skeletons in the closets of their relations. Nothing can be made of most of them morally, any more than a genetous idiot can be converted into an active-minded man. Wrong is right to them: they prefer lies to truth, immorality to morality. I knew one such case, F. K., who was continually breaking every commandment of the decalogue. He went through a form of marriage with four women, to each of the three last having told that he was unmarried, and I just saved the fifth by a few hours from going through a form of marriage with him! Several members of his family had been insane, and others subject to various neuroses. He took his bad heredity out in immorality.

The occurrence of moral insanity as a disease in those who have previously had the moral sense, and have exercised self-control, without at the same time the presence of morbid mental exaltation of some sort, is not in my experience so common as the want of a moral sense from congenital deficiency. Prichard quoted many such cases, and vividly described the disease, but I should place most of his cases in my category of simple mania, like C. B. (p. 148), C. C. (p. 152), and C. F. (p. 156). There was in them distinct morbid mental exaltation along with the loss of moral sense, But in the *following extraordinary case of deception, fraud, and imposition there was no apparent exaltation*:—

F. L., æt. 37, a lady of mixed race, her father having been English and her mother of a distinguished Hindustani family. Up to the age of thirty she had been as other women, had married, borne children, and conducted her affairs discreetly under many difficulties. About that time she entirely changed, morally and affectively, without intellectual per-

version and without mental elevation or depression. She went to a distant part of the country where she was not known, got acquainted with various persons there, especially fascinating one poor gentleman of a benevolent disposition. She said she was the heiress to vast estates and to a title. Through this gentleman she got introduced to other persons, some of whom believed her stories. She carried out impostures most daringly and cleverly. She got introduced, or introduced herself, to one great nobleman after another. She imposed on the Secretary of State for India by sheer impudence and lies. She went to a public meeting where she knew a nobleman of philanthropic zeal was to speak, told the doorkeeper she was an intimate friend of his, and was shown into the private room reserved for him; told him when he arrived that it was she who was the great support of the movement about which he was to speak in the district, was taken and seated by him on the platform, and so got introduced to many other distinguished persons. She raised large sums of money, amounting altogether to many thousands of pounds, on no security whatever. She furnished many houses most extravagantly at the expense of trusting upholsterers, and she got possession of jewellery to a large amount, largely on the faith of her distinguished connection. To one person she was a great literary character—and she did have printed, at other people's expense, a volume of other people's poems as her own—to another she was of royal descent, to another she had immense expectations, to another she was a stern religionist. All this was the prelude to an attack of hysteria, brain softening, and spinal disease, of which she died in a year, demented and paralysed. And one of the most astounding things was, that her first benevolent patron believed in her to the last, came to see her in the Asylum, and was going to write her biography as that of the most wonderful woman he had ever come across—this being a decent middle-class man, who by his honest industry had made a small fortune, and had lost £3000 of it through her. And he was counted sane and she insane!

We meet with many cases in both sexes, but especially in women, where their "tempers" are so bad and so uncontrolled that they do all kinds of evil actions and cannot apparently help it. They treat those nearest to them in various wicked ways, making accusations against them without foundation, and hurting their feelings and doing them injury in the most deliberate way. I have seen more than once whole families, every member of which had a moral twist. I attended a young lady once, F. L. A., whose father was cruel, selfish, and unnatural, whose sister was an opium eater, sleeping all day and sitting up all night, and who was herself at times cruel, lying, jealous, hypochondriacal, and delighting in annoying her friends, while at other times she was charming, amiable, and even fascinating.

Folie à Deux.—There is a very curious condition of brain in some persons which renders them liable to become insane by suggestion from others. They are then said to be affected by "communicated" insanity or *folie à deux.* I knew two old maiden sisters who lived together a lonely, unsocial life, and who became possessed by the same delusion, the one "catching" it from the other.

Imperative Ideas and Obsessions.—This state consists of morbid suggestions and ideas "shot" across the mental vision, and that seem to dominate the mind and sometimes the will for the time. A man subject to this condition may be either sane or insane according as they affect his conduct. The case of A. H. (p. 44) is a good example. His fear of forgetting words was an insane "imperative idea."

THE INSANE DIATHESIS.

Maudsley's and Morel's description: Characterised by striking peculiarities, eccentricities, oddities, disproportionate developments, abnormal affectiveness, impracticableness, morbid impulses, irregular action and modes of life without motives like other men—Connec-

tion with the neuroses and with genius—Functional manifestations of unstable nerve element in its receptive and reaction aspects—Begins in childhood—Importance of right upbringing and education of body and mind.

A description of the general symptomatological forms of mental disorders would not be complete without reference to a condition of mentalisation which has been called the insane diathesis. Maudsley, in this country, and Morel, in France, have described it better than any other authors. The great difficulty about its description is that we find few cases of this condition alike, and its special manifestations in different cases are as multiform as the human faculties and as complex as different combinations of unusual developments of those faculties can make it. There are certain human beings characterised through life by striking peculiarities, eccentricities, originalities commonly in useless ways, oddities, disproportionate developments, and nonconformities to rule, these things not amounting to mental disease in any correct sense, and yet being usually by heredity closely allied to it, or by evolution ending in it at last. The children of insane parents, or some of the members of families who have developed many of the neuroses, are most apt to exhibit the symptoms of the insane diathesis. Its symptoms are so various that they cannot be briefly described. One has merely to read the works of the modern psychological novelist to find the type of person I refer to in abundance. No one has lived long in the world without meeting in the flesh many examples of it.

And there have been enough examples of it in the real lives recorded in biographies, ranging from the inspired idiots to the inspired geniuses among mankind. We may safely reckon Chatterton, De Quincy, Cowper, Turner, Shelley, Tasso, Lamb, and Goldsmith, to take a few men of genius, as having had in some degree the insane temperament. We find some such persons strikingly original, but not reasonable; different from other men in their motives,

in their likings, in their ways of thinking and acting to such an extent that human society would at once come to an end were all others like any one of them. They are all in the highest degree "impracticable" and "unwise" in the conventional senses of those words. Some are abnormally sensitive and receptive, others abnormally reactive. Some are subject to influences and motives to a degree unfelt by ordinary men, such as hypnotism, sympathy with natural forces, with animals, &c. Most of the spiritualists, thought-readers, and clairvoyants who are honest, as well as many "Bohemians," are of this class. The actions of most of them may be described as instinctive. They do not find their way to lunatic asylums, but their friends often have to consult our profession about them, especially in youth. And fortunate would it be for many of them if the doctor had the direction of their upbringing on physiological and medico-psychological principles, instead of the schoolmaster on doctrinaire and purely mental ideas. How much unhappiness might have been saved in the world had this been done! For if there is any distinguishing feature of many of them it is the capacity to be miserable. Nothing reconciles one so to the abundance of commonplaceness and stupidity in the world as a study of the lives of some of these men. And surely our profession will in the future be able to apply its knowledge of brain function and development and the laws of heredity towards making the most of such lives, strengthening the weak points without forcing down the strong ones, saving from misery and ruin without depriving humanity of their originality and intenseness.

I have one case in the Asylum that may be counted as of the insane temperament. F. M., the son of an eccentric father, who could not get on as a student because he would insist on studying, not what was prescribed, but what he liked, whose knowledge is prodigious on all subjects—the only man whom I ever knew who had read through the *Encyclopædia Britannica* and lived—but whose common sense

is infinitesimal. I never saw any man, sane or insane, who could "make such a fool of himself" in an ordinary company of ladies and gentlemen. He has most original ideas as to the future politics of Europe, founded on a profound study of the mental characteristics and capacities of the races who inhabit it. Yet he will get up and sing "My pretty Jane," in a large company, out of tune and out of time, and so ridiculously that there is scarcely a dement in the Asylum who will not laugh at him and call him "daft." He is totally unfitted to "get on" in the world in any way. I presume it was this that drove his friends, after many trials elsewhere, to send him to a lunatic asylum, as the only place fitted to receive such a being.

Do not suppose for a moment that all persons of the insane diathesis are geniuses or talented. Nothing could be further from the truth. Most of them are, on the contrary, very poor creatures indeed, a nuisance to their friends, and no good to the world at large.

The insane diathesis differs from the German *Primäre Verrücktheit* or *Paranoia* when this is fully developed. But the one state often runs into the other. The late King Louis II. of Bavaria was by the highest German psychiatric authorities pronounced to be a typical paranoiac, and his career up to the time that he became manifestly insane was that of the insane diathesis. Before he became insane, his eccentricities; his impulsiveness; his utter want of the sense of fitness and proportion, or even of ordinary morality; his suspected unnatural sexual practices; his foolish and lavish expenditure; his appreciation of music, and his romantic friendship for Wagner; his sound judgment and prompt action in regard to Bavaria's course in the war of 1870, all combined, make up a vivid picture of a man of the insane diathesis, who became at last actually insane, and a paranoiac (see p. 278).

LECTURE X.

GENERAL PARALYSIS (*DEMENTIA PARALYTICA*), PARALYTIC INSANITY.

A true disease, a pathological entity ; not a mere group of symptoms ; its importance and interest. Definition : Three stages ; a typical case. *Etiology :* Temperament ; all causes of brain exhaustion and irritation ; excesses in drinking ; sexual excesses ; over-work ; over-anxiety ; syphilis ; injuries. Age at which it occurs from 25 to 50. *First Stage of a Typical Case :* Elevation : increase of sense of well-being ; constant motion ; loss of sleep ; exalted delusions ; "ambitious delirium ;" facility ; fibrillar tremblings of tongue ; pathognomonic speech ; slight inco-ordination of muscles of hands and legs ; extravagant conduct ; acutely maniacal state ; danger to patient's life ; difficulty of management ; increase of temperature, especially in evening. *Second Stage :* Acute excitement passing off ; greater facility and general silliness of mind ; speech, writing, and walking affected ; dilated pupils ; spurts of excitement ; progression of the paretic symptoms ; kleptomaniacal symptoms ; surplus stock of motor energy easily exhausted by walking ; fragility of bones ; epileptiform fits ; "congestive attacks." *Third Stage :* Paresis becomes paralysis ; inability to walk or speak ; occasional restlessness ; trophic lesions ; bed-sores ; swallowing impaired ; tendency to choke ; relaxation of sphincters ; sensibility deadened—Duration from 18 months to 3 or 4 years ; remarkable exceptions. Two Pathological varieties : 1. The cerebral or ordinary ; 2. The tabic or the eccentric by pathological propagation ; the cerebral by far the most numerous. Symptomatological varieties : 1. Epileptiform ; 2. Remissional where apparent recovery takes place for a time ; 3. Non-delusional simple progressive mental enfeeblement ; 4. Not occurring at the usual ages ; 5. The melancholic. Essential mental feature is progressive enfeeblement and facility. What do the grand delusions of the general paralytic mean ? Hereditary predisposition not so common as in other forms of insanity. *Chief Pathological Appearances :* Skull-cap thickened and hardened ; dura mater adherent ; general congestion ; thickening of pia mater ; adhesion of

pia mater to convolutions; atrophy, general and interstitial, with compensatory fluid; and tissues; lining membranes of ventricles granular; hardening of tissue; outer layer of grey substance diseased; proliferation of nuclei destruction of nerve cells; pachymeningitis hæmorrhagica. *Microscopic Appearances:* Lewis' researches; vascular lymphatic and neurine changes. Spider cells: Three stages; Lewis' explanation of the facts; the degeneration theory *v.* the inflammatory. Premonitory symptoms: "General Paralysis" well expresses the universality of the affection of the nervous centres in advanced cases; brain, cord, retina, sympathetic, and nerves affected. It is more especially than any other *the* disease of the mind tissue. Relation of Hitzig's and Ferrier's discoveries as to the motor functions of the brain cortex to the theories of general paralysis. Different groups of muscles affected in different cases. Are different brain "centres" affected in such cases? Diseases with which it may in some cases, or in some of its stages, be confounded: 1. Alcoholism; 2. Syphilis of brain; 3. Epilepsy; 4. Acute mania; 5. Tumours of brain; 6. Brain atrophy; 7. Chorea; 8. Partial aphasia; 9. Ramollissement; 10. Senility.

General Paralysis is not only a variety of insanity but a true cerebral disease, as distinct from any other disease as small-pox is from scarlatina. It is a disease of extraordinary interest physiologically, pathologically, and psychologically. Its study has somatised and definitised the study of all mental diseases, and has added, and will add still more, to our knowledge of the connection of mind with body, and of mental and motor disturbances. What we knew of its symptoms and pathology ought to have led to the conclusion that the cerebral convolutions have motor functions long before Hughlings Jackson, Hitzig, and Ferrier arrived at their generalisations on the subject. Being a distinct disease, clinically and pathologically, it can be defined or described definitely, and I should give its definition thus:—*An organic disease of the cortical part of the brain, characterised by progression, by the combined presence of mental and motor symptoms, the former always including mental enfeeblement and mental facility, and often delusions of grandeur and ideas of morbid expansion or self-satisfaction; the motor deficiencies always including a peculiar defective articulation of words, and always passing through the*

stages of fibrillar convulsion, inco-ordination, paresis, and paralysis; the diseased process spreading to the whole of the nerve tissues in the body; being as yet incurable, and fatal in a few years.

Three Stages.—The disease, for convenience sake, has been divided into three stages. In typical cases the first of these is that of fibrillar tremblings and slight inco-ordination of the muscles of speech and facial expression, and of mental exaltation with excitement; the second that of muscular inco-ordination and paresis, with mental enfeeblement; and the third that of advanced paresis, with little power of progression, almost inarticulate speech, and at last paralysis, with mental extinction. These stages form a convenient basis for the study of the disease, though there is no clear line of demarcation between them.

Let us look at a typical case in the first stage of the disease.

F. Y., a fine, strong, handsome man of thirty-five, without any known hereditary predisposition to insanity. He had enjoyed good health up to the time of his present attack. His temperament is sanguine, diathesis neuro-arthritic, and his disposition frank, unsuspicious, boastful, and hasty. He always had a high opinion of himself, and showed it; was of an imaginative turn; and had a physiological tendency to exaggeration. His feeling of *bien être* was always above the average; his habits had been industrious, and at times he had worked very hard indeed. He had not been dissipated in the worst sense, but he had lived freely, taking lots of alcoholic stimulants habitually, eating much, sleeping generally too little, and, above all, exceeding greatly in regard to sexual intercourse, both before his marriage and since—he had been married for three years. He had never had syphilis that I could make out, and certainly has no evidence of the disease on his body. For a few months his friends have noticed that he "has not been the same." Six months ago he was "not in good spirits," and complained of flying pains in the head; then he was a little forgetful, wanting in application to his

work, restless, doing some "unaccountable things" in business, *e.g.*, forgetting to claim money due to him. He was irritable at home, a thing unusual with him. A month ago he began to express an exaggerated sense of well-being, saying he never was so well in his life, that his strength was "something wonderful." He could not settle down to his daily work, his natural high opinion of himself was more openly expressed to comparative strangers, one of whom remarked after seeing him, "What a conceited fool that man is." This state went on without any other absolute signs of insanity, and without awakening the suspicions of his friends that he was mentally wrong—that is always about the last thing thought of,—until one morning he announced to his wife that he had the day before purchased several hundred pounds' worth of silver plate, and had ordered his coat-of-arms, with his name in full, to be engraved on each article. He added that he had lots of money, and had a scheme through which in a week he would be worth many hundreds of thousands of pounds. On inquiry it was found that he had ordered the plate; but the jeweller, being a man of sense and principle, having noticed some little thing in his manner that savoured of morbidness, had not taken any steps to execute the order till he made some inquiries. Many commencing general paralytics are not so lucky as this. I knew one who spent £1000, that had taken him ten years to make, in the week before his disease was discovered, and another who spent £7000 in a month. F. Y.'s wife found that he had been buying a quantity of perfectly useless things in addition to the plate, some of them in duplicate. He had in his pocket four gold pencil-cases, which he said he was to give away as presents to people to whom he was under no obligation, and did not know very well. She, of course, saw that something was wrong, and he was got off to the country. The restlessness by night and day increased; there was constant talking, almost complete sleeplessness; the boastfulness became in three or four days exaggerated delusions. He said he could lift 1000 lbs.; that he was the best

rider, swimmer, and jumper in the world. He wanted to buy every farmer's horse he met on the road, never offering less than £100 for any animal, and at once bidding another £100 if the first offer was jocularly refused. He wrote quantities of letters to all his friends, to all the noblemen in the district, and to the Queen, offering his services to make their fortunes and asking them to dinner. The only visible peculiarity of the writing was the omission of many single words. In a few more days he was maniacal, and so impatient of contradiction that he struck his wife, yet through all this he was in some respects facile and easily managed. He therefore had to be brought to the Asylum a week ago. When he saw me he offered to buy the institution for £100,000, and, on my saying that was too little, offered £200,000, and soon got up to £1,000,000. On my saying that we could not do without it, he said he would build another, the most magnificent in the world, and endow it with a million a year, and appoint me physician-in-chief with a salary of £10,000, first getting the Queen to create me a baronet and giving me a splendid uniform, chiefly made of gold cloth. He has been sleepless, destructive to his clothing, not cleanly in his habits or modes of eating, in constant motion, facile in most respects, but irritable and impulsively violent when his commands were not instantly obeyed, or when he was prevented from carrying out his grand schemes. He expressed no surprise at all at being brought here, and no resentment towards those who brought him.

Look at him now. He came into the room with a quick step. His attitudes and gestures follow and accentuate his speech. He talks rather quickly, and has the least slurring towards the end of long sentences and in articulating long and difficult words with many oft-repeated consonants. "Round about the rugged rock the ragged rascal ran" was got through fairly well the first time, but at the second attempt the "ragged rascal" got into a sort of inarticulate slur. This is accompanied by fibrillar twitching in the small muscles of the lips and

round the eyes, as if a sudden electric current had set these quivering. As he breaks into a smile this is very apt to happen. His tongue quivers in lines on its surface, single strands of muscles being affected. His pupils are contracted, irregular in outline, and the right is distinctly larger than the left, the latter being quite insensitive to light. Sometimes it is one pupil and sometimes the other that is small and insensitive, or large and insensitive, in different cases. The expression of his eyes is feverish and strange. His skin is moist and feels hot. His temperature is 99·6°, this rising to over 100° at night; his pulse is full and hard. He cannot rest nor sit still. There is clearly an abnormal generation of energy in his motor batteries. When we test his common sensation, it is found to be markedly diminished. His sense of smell is weakened, though it is not, as Voisin says, so blunted that he cannot smell pepper. I have seen only a few cases where smell was so anæsthetic as this. He tastes, though a little imperfectly; by and by he will not be able to distinguish a solution of quinine from milk. Shown a lot of coloured wools he could not tell the blue, calling it red. His patellar tendon reflex is very acute, and also the spinal and skin reflexes. You noticed how easily he was led off from one subject to another; this facility is one of the most characteristic of all the symptoms present in all stages of the disease. But he is irritable on contradiction, and resents thwarting, especially if it is done suddenly and imperiously. General paralytics at this stage are sometimes very dangerous, from their absolute fearlessness of consequences. This insane boldness gives much trouble. An ordinary insane patient, if not deliriously maniacal, will usually yield to the show of force, but a general paralytic will often try to fight and resist any number of men. When we try him to walk along a board of the floor he does so sprightly and well, but on telling him suddenly to turn round he could not do so sharply, but took a circle, and that waveringly.

This man is in the first stage of his disease. He will

steadily grow worse, losing bodily weight rapidly, his speech getting worse, more tremulous, and having more difficulty in articulating long words and sentences. His motor excitement will be shown probably by his tearing dozens of suits of clothes all to ribbons. I have a gentleman who tore one greatcoat into over a hundred pieces, saying—"I'm g-g-going to put it tog-g-ger again as soon as I g-g-get to Jeru-sh-lem. I've got a million coats there." His walking will become affected, and his mental power will become gradually more enfeebled. He will believe all the delusions of his fellow-patients. A general paralytic is about the only insane person, except a congenital imbecile, who cannot see that some of his fellow-patients in an asylum are insane. Their letters are usually characteristic. Here is one:—

"The . . . [1] of the Millenium. R. E. A. When I reach the elect. teleght. office will send a despatch the Times. Millenum begins. Yours in the Holy love of God and the Holy Trinity, Israel Jesu Christ."

Here is another, addressed "Countess of Elgin and Durham," but really to the Queen:—

"——— House, Royal National Lunatic Asylum.

"My Dear Wife,—I am very glad to say that I am up to the mark in every particular, and hope your system is up to the scratch. Has John Brown undergone any form of cremation? I am glad to . . . him adopting my style of shepherd checked trousers. I hope both Queens are well, with Princess Louise, Princess Beatrice . . . that I will give them all that is necessary in this world and the world to come. Compts. to darling 'Eugene.'—Your affct. husband."

The *nisus generativus* is usually not exalted except in the preliminary stage of general paralytics, but I have known exceptions to this. In fact, impotence is the rule during the latter end of the first stage, and ever after. I have, however, known cases where children were procreated in the beginning of the first stage, and I had one case who was impotent for over a year in the first stage, but whose sexual power returned in the second stage, with many other apparent signs of improve-

[1] Where words are omitted.

ment, and his wife had a child to him, begotten then. He again became impotent in the end of the second stage. I have known more than one case of general paralysis who was a masturbator during the early part of the first stage.

Let us now see a typical case in the second stage of the disease.

F. X., now 45, a clerk, with a history somewhat resembling F. Y. He became affected a year ago, and has gone through a first stage of exaltation and excitement, which for the past two months has been slowly passing off. Mark his facial expression, or I should rather say, his want of facial expression. His face looks fat, heavy, and dull, as if the expression had been wiped out of it, and this even when he speaks. There are no movements of the features corresponding with the emotions he is experiencing. There is a heavy flabbiness about him. After losing over two stone in the first stage of the disease, he has now made it up again in fat if not in muscle. There is a contented facile hebetude of mind in him. He expresses few wants, says he is quite well, and that he can walk, work, sing, or do business as well as he ever did, none of which are true, for he is very shaky on his legs, cannot walk a mile, his handwriting is tremulous, and he has no initiative mental power, no spontaneity, and no power of volition. He does not now obtrude his delusions, but when asked he still says in a facile way he is rich and strong. His pupils are widely dilated, and the left more so than the right; his pulse is 68, and easily compressible; his temperature 97°, but still a little higher at night; his tendon reflex is dull; his spinal reflexes dull too; his power of swallowing a little impaired. His speech is very markedly affected now, and the tone of his voice is quite changed. He cannot say "round about the rugged rock the ragged rascal ran" at all, nor such test words as "royal artillery," "hippopotamus," "British constitution," &c. There are still some tremblings about his face as he speaks, but they consist of the inco-ordination of whole groups of facial and articulatory

muscles. He is very kleptomaniacal, picking up and stuffing into his pockets any bit of trash he can lay hands on. The dorsum of his tongue presents a general undulatory surface when put out. He cannot turn round quickly without risk of falling, or stand on one leg; he straddles a little in walking, is apt to stumble over small obstacles, and the effort of a long walk so exhausts the energising power of his motor batteries that he gets almost paralysed, and is then unable to walk at all. There is no vigour in any muscular movement he performs. His urine often dribbles away. Occasionally he is noisy at night in an automatic, causeless way. He will become weaker steadily. His speech will soon become less articulate, until he reaches *the third stage, which this next patient has reached.*

F. W., æt. 40. Has had general paralysis for two years, and has passed through the first and second stages. He is now so paralysed that he cannot walk nor even stand steadily. He cannot write, and his mental state is that of a happy lethargy. When asked if he has a million of money his facial muscles begin to act in an inco-ordinated way, his eyelids half shutting, his mouth being drawn out, the lips moving spasmodically like a patient going into an epileptic fit, the whole effect being that of a contorted imitation of a smile, accompanied by a slow, prolonged, and jerky "Y-a-a-a"—which is all that he can articulate for "Yes." But he looks as if his subjective condition was one of perfect happiness. He asks for nothing, he complains of nothing; he is noisy at night often, but it is in an automatic way. He needs to sleep on a mattress on the floor in a room specially warmed by hot air, for he rolls about the room at night. He is quite unable to retain his urine and fæces by night or day. All his food has to be liquid or minced, for he would bolt it in solid masses and choke. He is greedy for his food when it is put into his mouth, though he is unable to feed himself. This man has had two "congestive attacks," to which most general paralytics are subject. One occurred about the end of the first stage

of the disease, and was accompanied by unconsciousness, a temperature of 103°, general convulsions which began and ended on the right side, but affected the whole body in the middle of the attack. They lasted for about four hours, and were succeeded by stupor, which lasted for forty-eight hours. He had *retention of urine* at that time as he slowly recovered consciousness; after each it was found that his speech and his walking were more paretic, and his mental power more enfeebled. Congestive attacks always leave the patients worse in these respects. The second attack was of the same character, but less severe, and occurred in the second stage.

Hæmatoma auris. — Soon after it a fellow-patient struck him on the side of the head, and the ear of that side began to swell in the centre of the helix, this swelling slowly increasing in size until the ear was painted with blistering fluid, as recommended by Dr Hearder, when it ceased to increase in size, and slowly shrank up, leaving that part of the ear hard and slightly shrivelled. If it had not been blistered the swelling would have increased until the whole ear would have looked like a bluish egg attached to the side of the head. This would have been found to consist of a bloody, gelatinous material if it had been opened—but this should not be done—apparently separating the outside skin of the ear from the cartilage. In time it would have shrunk up, leaving the outside ear a hard, shrivelled, cartilaginous-looking, ill-shapen mass. This is the "insane ear," or *hæmatoma auris*, which is very common in general paralysis, and is sometimes seen in bad cases of mania of the chronic variety, sometimes in chronic epileptics, occasionally in agitated and convulsive melancholia, and rarely in dementia. Its occurrence is always a bad sign for prognosis in any case of insanity. I have seen only four or five cases perfectly recover out of over eighty who had fully developed *hæmatoma auris*, and four others who made partial recoveries after slight threatenings of hæmatoma which might not have developed fully or were stopped

by blistering fluid. It results, according to Drs Middlemass and Robertson,[1] from a "peculiar degeneration in the cartilage of the ear," which Dr Ford Robertson finds is very common indeed in the initial stages in this disease and also in other forms of insanity. The real seat of the hæmorrhage is from the cartilage branches of the carotid artery. The gelatinous, bloody contents of a hæmatoma are like the extravasations under the dura mater in *pachymeningitis hæmorrhagica interna*, a disease that is liable to occur in precisely the same class of cases. *Hæmatoma auris* has been found in persons sane in mind, though very rarely. The exciting cause is often violence to the ear, but this is not necessary, and scarcely any violence will cause such a state of the ear where the morbid conditions for its formation do not exist. Blistering, if applied, in time, usually stops further growth, but I have met with cases where a hæmatoma began to grow after it had been thus stopped, was again blistered, again ceased to grow, then again enlarged, and finally swelled up to the size of an egg in spite of blistering.

F. W.'s common sensibility is much impaired, so that you can stick pins into him without his feeling it much. The reflex action of his cord is over-acute, and extends upwards from the section of cord irritated, for if you tickle one foot they are both drawn up with a jerk, and the two hands and the chest muscles are contracted likewise. The impression travels upwards more readily than downwards.

He will soon become so paralysed that voluntary motion of any kind in the legs will cease. He will have to be placed on a water mattress, and his trophic power will become so affected that his urine will irritate his skin and bed-sores will tend to form, and he will die of exhaustion probably within six months from this time, or within three years from the beginning of his disease.

Variations from the Typical Form.—The usual course of this disease is well illustrated by these three patients, but a

[1] *Edin. Med. Jour.*, Dec. 1894.

large number of the cases do not follow the typical course, and it is the non-typical cases that puzzle us in diagnosis, and about whom the most experienced of us have to suspend our judgment in the early stages. For the diagnosis of those exceptional cases, we require first to know clinically the varieties that are found, to understand and to take into account the true pathological nature of the disease, and to be able to separate the essential from the non-essential features of it. I shall instance a few such varieties of the disease.

The most marked variety is the peripheral form, where the pathological process does not begin in the cortex of the brain but in the cord (*the tabic form*), *or in the neurine portions of the organs of special sense* (*the sensory form*), *or in a peripheral nerve* (*the peripheral form*), spreading upwards by a pathological propagation along the connecting nerves in the lines of physiological function, till it reaches the brain cortex. These varieties are rare, but distinct enough when they occur, and very interesting. They would seem to imply that the pathological process of general paralysis resembles the progressive Wallerian atrophy of the nerve trunks, or the degeneration of the posterior median columns of the cord in locomotor ataxia. I am not quite prepared to accept this conclusion, for there are as yet many pathological differences between the appearances in both of these diseases and the brain cortex as affected by general paralysis. The essential structure and the functions of the brain cortex are so different from any other portion of the nervous system that it is quite possible to suppose a diseased process of one pathological nature slowly advancing along a peripheral nerve or along the cord, and, when it reaches the totally different and higher structure of the brain cortex, that it should assume a different nature, just as the process of inflammation spreading from the periosteum to the bone changes its character in some respects. And then it must be remembered that, in those rare cases of what appear to be pathological propagation, there may have been the ordinary causes of general paralysis operating in regard

to the cortex, and the peripheral disease may have been merely an extra cause at work. To show what I mean I shall refer to a few cases.

G. A., a man of 50, who had been affected with *ordinary typical locomotor ataxia for seven years*, began to be maniacal and sleepless, and to have delusions of grandeur, affirming he was an earl and possessed millions of money, and that he could ride, run, and swim better than any man in the world. He used to write about fifty letters a day, ordering every sort of thing imaginable, asking the Queen, the House of Lords, and the Cabinet to dinner, &c. His speech was markedly affected by the characteristic tremble of the lips, the shuffle and thickness in the articulation of long words and sentences. He passed through the second and third stages of the disease, and died in eighteen months from the time of the beginning of the mental symptoms. There was no *post-mortem* examination in that case, but I have examined the brain and cord in other similar cases, and have found that the disease could be traced up from the cord through the medulla and the lower ganglia into the brain cortex. I have always found in those tabic cases that the peculiar adhesion of the pia mater to the convolutions (see Plate I., Frontispiece) was most marked at the base of the brain and in the cerebellum instead of over the vertex, as in the typical case of general paralysis. In one such case, who died at Morningside Asylum, Dr J. J. Brown found the cord degenerated, not only in its posterior columns, but most markedly also in the anterior columns. In that case the medulla oblongata was more diseased than I ever saw in any other case of any kind. Scarcely a single nerve fibre or cell seemed to me normal.

The next case is the most typical of six cases I have met with, where there was first disease of the retina, and then, after some years, general paralysis.

G. B., having exposed his head to a hot sun while bathing, had hæmorrhage into both retinæ, causing complete blindness. After a few years he fell into general paralysis, and when he

died I found that the optic nerves were hard grey cords, with no nerve substance left, that the optic tracts were in the same condition, and the grey sclerotic degeneration could be traced backwards to the corpora quadrigemina, the posterior of which were grey and sclerotic. The evidences of cortical disease were strongest at the base of the brain, the convolutions of the anterior lobes over the orbital plates being specially affected, the pia mater being universally adherent there.

I knew a gentleman, G. B. A., *who became stone deaf in one ear several years before he developed general paralysis*, and though I had no pathological proof that the case was one of propagation, I had no doubt in my own mind on the subject. He was a medical man, and his deafness was of a peculiar character, so that it alarmed him very much; and when the first symptoms of general brain disease appeared he said he thought it was just the extension of the disease from his internal ear. Professor Laycock used to quote a case of his *where the disease had spread upwards from a Wallerian atrophy of one of the motor nerves of one of the fingers.* I had a case, G. D., a woman of 36, who *passed gradually into an attack of quiet non-delusional general paralysis after a small punctured wound in the top of her head penetrating for about an inch into the brain.* A pitchfork had fallen accidentally on the top of her head as she was loading a cart of wheat. After death the whole of the convolutions round the wound were found specially affected, though the cortex in most parts of the vertex and sides of the brain were affected as well.

Symptomatological Varieties.—There are many cases of paralysis where the course, and even the nature, of the symptoms vary, within limits, exceedingly from the typical symptoms and the typical course. They constitute *symptomatological varieties* of the disease. The most common and the most marked of these is the *non-delusional* variety, as seen in the following case, where there was no excitement, no delusions of grandeur and no congestive attacks, but

simply a gradual mental enfeeblement beginning with the volitional power, and a gradual paresis beginning with muscular weakness and fibrillar tremblings in the facial muscles and tongue, this gradually passing into complete incoordination.

G. C., æt. 50. A quiet-living man, who had married about three years before he became affected in mind, first showed mental defect by irresolution, want of keen interest in anything, forgetfulness, and the want of a realising sense of the necessity for his working in order to live. Soon he got a little irritable when pressed to work. Then his mind showed clear signs of enfeeblement and facility. He would believe silly stories, he could not carry on a connected conversation, he had few likes or dislikes. I saw him at this stage, and found his speech thick, his lips showing, as he began to speak, that fatal quiver that to a practised eye almost marks the disease from all others. His walk, too, was not firm, and in turning round sharply he did so uncertainly, and he could not walk along a chalk line on the floor or stand steadily on one leg. He gradually got more enfeebled and frail in mind, his speech became less articulate and his walk more paretic. Nearly all his symptoms were negative. He had a gentle kleptomania. He would pick up and fill his pockets with stray pocket-handkerchiefs, aprons, and rags in a sort of automatic way, not in the least caring or objecting when they were taken from him. He died in six years of pure exhaustion, absolutely paralysed, never having made a sound that could be called articulate for a year, or voluntarily moved a voluntary muscle during that time, lying on a water-bed, and leading a merely vegetative life. Such cases are apt to live a long time. They have not commonly lived dissipated lives, and they are usually of a calm phlegmatic temperament. *Nearly one-third of all the cases of the disease that I have seen were of this character, and nearly all the older medical officers of asylums say that this type is increasing, while the classical grandiose type is diminishing in*

frequency. This type is very common in the female sex; in fact, the majority of the female cases conform to it more or less. It is also the common type of the disease in those parts of the country where the people live unexciting lives.

Standing at the opposite point from this quiet form of the disease are the two varieties of which I shall now give examples. *The first is the specially convulsive form, as exhibited in the following two cases:—*

G. E., æt. about 40. A man who had been of an excitable disposition, and had led a dissipated life in regard to drink and women; of a fiery temper; who had suffered from syphilis; whose whole life had been a whirl of mental excitement. He had complained for some time of very severe headaches, had been off his sleep, had been unusually irritable and not fit to do a day's business. One day he suddenly fell down in a fit, and remained in general and severe convulsions with complete unconsciousness for about two hours, and died in them. After death I found all the pathological signs of general paralysis: especially the adherence of the pia mater to the convolutions of the vertex in patches was very marked. There was no local disease in the membranes or vessels that has been recognised as syphilitic, and he had not been drinking heavily before his death.

My conclusion was that it was a case of general paralysis with a strongly convulsive tendency, this killing the patient before the usual symptoms had time to develop. I do not know whether I should or not have been able to diagnose the case had I seen him before the convulsive attack, or whether there were any motor symptoms present before it occurred. But, it may be said—Is it possible for a man to have marked disease of the brain affecting the convolutions of the vertex without mental or motor symptoms? My experience of the cases of general paralysis, who died as G. E. did early in the first stage, would lead me to the conclusion that the recognisable pathological lesions of the convolutions precede the marked mental symptoms. They usually need to develop in some in-

tensity, and to *involve a certain number or kind of convolutions*, before mental or motor symptoms become very manifest.

I had a general paralytic in the Asylum, G. A., who took an epileptiform convulsion every day for months. The temperature rises often before, and always after, an epileptiform convulsion or a merely congestive attack in these cases. I had another patient who had many epileptic-looking fits for a year, and was treated for epilepsy by eminent physicians during that time, before the usual mental and motor signs of general paralysis appeared.

The convulsive tendency is best treated by the steady use of the bromides, which, however, always aggravate the incoordination. During a congestive attack with convulsions they can be stopped by large doses of chloral, or by putting the patient under chloroform; but I doubt whether consciousness is sooner regained thereby, or if life is prolonged.

The next marked departure from the normal type of general paralysis, such as I have described it, is where *the first stage consists of a maniacal exaltation alone, without any motor sign that one can recognise, for months, and even years.* I have had several cases now who had what appeared to be attacks of ordinary acute mania, and to all appearance had recovered, who had even second attacks and recovered, and then developed the motor symptoms of general paralysis. The following is one of them:—

G. G., æt. 36, an Irishman born—Irishmen often enough suffer from general paralysis here, if they do not at home—drunken and hard working; married. Had an attack of "acute mania" in 1876, and was sent to the Asylum, and "recovered" in five weeks. No motor signs nor evidences of general paralysis were noted by me or anyone else then. In 1878 he had another attack, and this time some suspicion of the disease was excited, but no diagnosis made. He was again discharged recovered, and it was only on his third admission, three years after his first, that the disease was manifest. He died of it in three years after his last admission.

In such a case as that of G. G. I have no doubt whatever that the first attack in 1876 was really a part of the general paralysis, but at that time the disease was probably superficial in the anterior cortex and confined to a limited area, and did not involve to any extent the motor centres in the convolutions, causing, no doubt, much congestion and much vascular overactivity in the cortex, but not inco-ordination of motion. The first attacks were brain-storms that passed away, so far as the active congestion and the vascular disturbance were concerned, leaving the incipient organic convolutional change there, but quiescent. I have also no doubt—in fact, I obtained clear evidences of it from his wife—that intellectually he was weakened after the first attack of "acute mania" in 1876. Such cases enable one to understand the "recoveries" and "cures" of general paralysis, not one of which, I believe, was ever real or lasting, if the diagnosis has been correct.

Do not diagnose from mental symptoms alone.—It is common to have in the beginning of the first stage very acutely maniacal mental symptoms, and no apparent motor signs discovered—and general paralysis should never be diagnosed from mental symptoms alone. But there is no doubt that the mania of general paralysis is the most intense—not to be incoherently delirious, — the most unreasoning, and the most exhausting we ever see; and to the experienced eye it has a certain character of its own in most cases which suggests the disease.

In certain cases we have a combination of the *non-delusional and the simply maniacal* or *partially maniacal* forms, the patients being simply irritable or semi-delirious at night. I had a case, G. H., who was acutely maniacal, very dangerous, very homicidal, very impulsive, and very strong-willed and unmanageable for twelve months before there were any motor symptoms that enabled me to diagnose general paralysis. From the state of his pupils, and the looks and expression of his face, I suspected it, but I could not have

said definitely there was any other condition than acute mania for the first twelve months.

It is very uncommon for a man who suffers from general paralysis to have been insane before, but I have met with a few examples. One, G. H. A., had an attack of mania in youth, recovered, kept well, and did his ordinary business for twenty years, and at the age of forty-four became a general paralytic.

We meet with certain *long-lived cases that do not die at the normal time, but live on for periods up to thirty years. The following is the most marked case of this kind on record:—*

G. J., æt. 35, admitted to the Royal Edinburgh Asylum 18th November 1860. Had led a somewhat rough life, and nine months before had an "epileptic fit." No heredity to insanity, but he had a very eccentric, somewhat silly sister. The attack had been preceded by a melancholic condition, and he had refused his food. His articulation was slurred, his pupils unequal, his walk slow and unsteady. He was unhesitatingly diagnosed as a general paralytic. After nine months he was taken out of the Asylum by his relatives, but had to be sent back again in eighteen months, having been, while outside, totally unable to do anything for his own livelihood, and having got gradually worse in mind and body. When admitted in 1863 he was "stout, stupid, and silent," had the "peculiar expression of face of general paralysis well marked, as well as its walk." Some days he was "quite well and happy." In a few months he was "uproariously happy," with the most exaggerated notions about his riches, strength, height, beauty, &c. He is 40 feet high, is God, is married to the Queen, is the strongest man in the world, and has a "damnable heap of money." All Leith Docks belonged to him, and most of the ships there. In December 1863 he had a series of epileptiform fits, which were ushered in by a regular congestive attack. He became very weak, and could with difficulty articulate or make his water. He got over this condition in a few weeks, and became facile and contented.

An assistant physician of the Asylum recorded, in the Case-Book in 1864,—"Is a magnificent specimen of a general paralytic." In June 1864 he had a congestive attack, succeeded by epileptiform fits, being maniacal and restless afterwards. In August 1864 he had another congestive attack, and one in January 1865, and got so frail in March that he had to be kept in bed. In March he had another congestive attack. He had no congestive or epileptiform attack again till December 1880. During all these years the symptoms remained the same, but the disease did not advance much till after the epileptiform attack in 1880. The period of general convulsion was short, only a few minutes, but he was confused and stupid afterwards for four hours, and was then excited and noisy. The paresis increased after this, and the general strength failed much. In February 1881 he had another severe attack of general convulsions, with several hours of unconsciousness following them, the temperature rising to 102·4° in three hours, and then falling to normal in two hours after that. He had two such attacks in April of that year. After the last the left side was found weaker than the right, and he was shaken generally. During the summer he could not walk far without becoming paralysed in his legs; he had incontinence of urine, his speech was thicker and less articulate, and mentally he was more facile and stupid.

In 1887, twenty-eight years after the commencement of his illness, his condition was as follows:—Facial expression vacant; pupils both contracted, but partially sensitive to light, the left being slightly the larger, outlines not regularly circular; tongue tremulous, and its muscles inco-ordinated over surface; articulation affected just like that of a typical general paralytic in end of second stage of the disease, difficult words being worse pronounced, and the ends of sentences worse than their beginning; walk uncertain, dragging, straddling; sensibility diminished, can smell pepper, but cannot be made to sneeze; spinal reflexes very acute, patellar tendon

reflex quite absent. Often has retention of urine. Cannot walk well; turns round with difficulty; cannot stand on one leg; whole nutrition flabby; mentally in a facile, morbidly contented, exalted state.

In 1889 he had an attack of unconsciousness, with a period of mental confusion afterwards. He retained his grandiose delusions, his irritability, and his kleptomaniacal tendencies. His articulation got more and more slurred, but had not then in any marked degree the shakiness and quavering of the typical general paralytic. In 1890 he became almost inarticulate; within eight days of his death he collected in his pockets leaves, flowers, dirty paper, rags, old iron, stones, broken plaster, and wood. He became feverish four days before his death, which took place on the 29th July 1891, *over thirty years since the commencement of his disease.*

The following *pathological report* of his case is by Dr Middlemass:—

"The skull-cap showed slight general thickening, especially of the inner table, but the bone was soft rather than dense. The dura mater was adherent to it over a small area in the region of the frontal eminences, and the whole membrane was thickened and rougher than normal. On its inner surface there was marked 'rusty staining,' but no membrane. The cerebro-spinal fluid was much increased both in the sub-dural and, to a greater degree, in the sub-arachnoid spaces. The pia-arachnoid was considerably thickened, and presented a milky appearance, but it was nowhere adherent to the grey matter of the cortex. There was very marked atrophy of the convolutions, especially of the frontal region. Instead of their usual rounded appearance, they were wedge-shaped, but flattened on the top, some even had a slight depression running along the outer surface. The sulci were wide and gaping, and the ventricles considerably dilated. There were numerous small granulations on the ependyma of the ventricles. The pia mater of the cerebellum was not apparently thickened nor adherent to the grey matter.

"*Microscopic Appearances.*—As regards the microscopic appearances of fresh sections of the cortex, those seen in one from the anterior part of the frontal region may be described first. The pia mater was considerably thickened, and in the cortical layer immediately subjacent to it there were numerous spider cells. These for the most part were small, not well stained, and nearly all exhibited signs of fatty degeneration. The vessels were prominent, partly from an increase of the adventitial nuclei, partly also from a deeper than usual staining of the material forming their walls. In the deeper and larger vessels there was a slight deposit of pigment and fatty particles in the perivascular spaces. The nerve-cells of the second and third layers showed evidences of marked granular and slight pigmentary degeneration, the protoplasm being irregularly stained and many of the processes gone. In many of the nuclei there were one or two small fatty globules, and in a few vacuolation even had occurred. The large pyramidal cells of the fourth layer showed decided pigmentary degeneration, and in many there were fatty granules. The cells of the remaining layers were not so much degenerated. In this region, however, there was an increase in the nuclei of the neuroglia cells, and a dense fibrillation of the neuroglia, due to the delicate processes of very numerous spider cells. These were small, and stained slightly. Many were fatty, and most of them showed signs of degeneration or feeble vitality.

"Sections from Broca's convolution indicated a greater degree of thickening of the pia, an increased number of spider cells subjacent to it, and more pronounced degeneration of the nerve cells.

"In the ascending frontal convolution the thickening of the pia mater was slight, but the cellular degeneration was still marked.

"In sections from the sensory regions the pial thickening was not appreciable, the nerve cells of the two deepest layers were only slightly degenerated, and the spider cells in this level almost absent."

So far as I am aware, no case with every mental and bodily symptom of general paralysis, and diagnosed by many competent and experienced specialists to be such, ever lived so long as thirty years. Dr Blandford[1] relates such a case who lived twenty-seven years. I have known many cases that lived over ten years; and, if ten years, why not thirty? Nature goes far in her exceptions to most pathological "rules" on a few rare occasions. It may be said—Was not this a case of alcoholic or syphilitic brain damage to the mental and motor constituents of the cortex that was not really progressive, which merely caused brain atrophy, and that the patient died of old age? If that is so, we are landed in the awkward dilemma that we may have every symptom of general paralysis during life, and every pathological change in the brain after death, except adhesion of the pia mater to the convolutions, and yet not the disease itself, because the patient lived beyond the hitherto recorded time. As our knowledge of the disease has advanced, we have seen that it is found at early ages and at late ages. I cannot see any valid reason why hitherto unprecedented duration should upset the conclusion founded on clinical and pathological evidence.

The non-adherence of the pia opens out very interesting pathological questions in regard to the disease. Had it so adhered in the early stages of the disease, but, through cortical shrinkage, absorption of pathological products, and fatty degeneration of spider cells during the long course of the case, had the adherence disappeared, leaving the other pathological changes still present? I believe this to have been the case. It is consistent with the experience of other cases, and with the known laws of the absorption of pathological products; and Bevan Lewis[2] thinks there is undoubted evidence that this process of disappearance of pial adhesions takes place.

Instead of the exalted condition of mind, or the merely enfeebled and facile one, we have a few cases—from 3 to 4 per

[1] *Insanity and its Treatment*, 3rd ed., p. 299.
[2] *Op. cit.*, p. 488.

cent. in my experience—with *melancholic* symptoms. My belief and experience is that in almost all these there is some organic visceral disease or disturbance which transmits to the convolutions sensations that are disagreeable and depressing. On examination of our pathological register, I found that nearly all the cases that had tubercular disease had been melancholic. I had a man, G. K., who had the fixed melancholic delusion that a man was inside him who annoyed him constantly, and this made him depressed. After death we found a tubercular disease of the intestines. I have a most instructive case now showing the influence of visceral disease on the mental condition of a general paralytic, G. L., a cabman, who thought on admission he had £30,000, and got £1000 from Queen Victoria for driving her along Princes Street. Suddenly one day he became melancholic, saying he was a beggar, and crying bitterly. We examined his chest and found he had bronchitis. The reflex action was so dulled, as in most cases of the disease, that he had no cough, felt no pain, and made no complaint. As his bronchitis improved, his mental elevation and delusions of grandeur returned. He had a relapse, and the melancholic state at once came back. For a week or so he was elevated one day and depressed the next. At last the bronchitis was recovered from, and he is the happy imaginary possessor of his thousands. Whenever I see a general paralytic dull now, I always search for an organic visceral cause, and usually find it.

I had one case of the disease, G. M., that *began with aphasia*, and was treated for several months for this. As he began to speak the peculiar articulation was noticed, and he died in about two years. In his case, the motor reflex excitability of the brain and cord was greater than I ever saw in any case whatever. A very slight tap on the toe would set up a convulsion first in that leg, and then in the next; a slight puff suddenly into his face would make him jump off his seat with his whole body. I have many times seen general paralytics aphasic after congestive attacks. In such

cases, and in all cases where the speech was specially affected during the disease, I have always found after death that the third frontal convolution of the left side and the region of the brain round it had the pia mater especially adherent to the cortex.

I have lately seen several cases of what I have called "*developmental general paralysis.*"[1] The disease is very rare before the age of twenty-five, but a few cases had been reported—one by myself in 1877—at ages from twelve to twenty. Two such cases were placed under my care in 1890, in both of whom the first symptoms of this disease had shown themselves at fifteen, and in both followed a typical course till they died, the one at the age of seventeen and the other at twenty. Both were girls who had never menstruated, and were undeveloped and girlish in form and appearance. Both had a neurotic heredity, and both had hereditary syphilis. The pathological appearances—naked eye and microscopic—found in the brains of both were typical, and taken along with the symptoms during life left no doubt whatever as to the nature of the disease. My conclusion is that the disease may occur as one of the great and varied groups of the neuroses of development in subjects with a strong neurotic heredity.

The special senses are always more or less affected sooner or later, but commonly later. Many cases cannot distinguish between substances having different tastes when the disease is advanced. Some become blind, some are deaf, and many lose the sense of smell. This is caused, I believe, by a primary degeneration in the cortical centres of special sense, and a secondary degeneration in the nerves of special sense and their terminal nerve apparatus. These latter can be demonstrated in many cases, the optic nerves in some being like grey fibrous cords. The eye symptoms generally are most important in this disease. They are chiefly oculo-motor, but the expression of the eye is entirely changed, there being an expression difficult to describe which is very pathognomonic of the disease. The patient lacks vivacity

[1] The author's *Neuroses of Development.*

of look, and the cornea is dull and lifeless, in this respect being entirely different from acute mania. The changes in the pupils are marked in most cases. There is commonly contraction, sometimes up to pin-point condition, in the first stage. This sometimes lasts all through the disease. There is in by far the majority of cases inequality of the pupils, one of which does not react either to light or to accommodation so well as the other. In many cases there is dilatation, and this is the more common condition in the second stage and in the quiet gradual class of cases. Then the outline of the pupil is commonly irregular in contour from irregular motor innervation.

Bevan Lewis points out *the delayed reaction-time* in the disease. This together with the dulled reflexes is, in my opinion, the reason why so large a proportion of the cases of broken ribs in asylums are general paralytics. When the chest is struck or the weight of another patient or an attendant is thrown on it, the laryngeal muscles do not act in time to close the chest and make it resistive, through its being filled with air that cannot be driven out.

I have only seen one patient in whom long-continued *ordinary insanity became changed into general paralysis.* It was a case of dementia of twelve years' standing. It was an exception that proves the rule that general paralysis and ordinary insanity have little in common pathologically.

The conditions that are most apt to be mistaken for general paralysis are alcoholism, syphilitic insanity, paralytic insanity, certain cases of epileptic insanity, certain cases of brain tumour, acute mania with ambitious delusions, choreic insanity, some senile conditions, some traumatic cases, and some cases of imbecility with stuttering speech. It is quite impossible to diagnose correctly at once some cases of alcoholism from general paralysis. We must wait in such cases. Never diagnose general paralysis till you are sure. I have met with two cases of traumatism where the symptoms were chiefly those of general paralysis, but the cases lived on and died of diseases not cerebral.

Inception.—General paralysis does not commonly begin by a sudden appearance of any of those motor or marked mental symptoms. If a correct history of the patient's mental state for two or three years before the "insanity" openly showed itself can be obtained, we will usually find premonitory symptoms in the shape of sensory neuroses, diminished energy, changed disposition, lack of enjoyment of life, depression, or some other mental change indicating weakened nervous energising. In many cases I think the middle-aged general paralytic is suffering for the sins of his youth.

Causation.—There are two causes that, singly or combined, above all others, cause the disease, viz., sexual excess, especially if indulged in at or after middle life, and alcoholic intemperance, especially if impure and bad drinks are used. If hard work, muscular or mental, with a stimulating diet of flesh, are combined with these, then we have an additional liability. Some recent continental authors assign syphilis as the real cause of the disease, and Dr Drummond of Newcastle homologates this view.[1] I cannot agree with it because I have had many cases in which the existence of personal syphilis was excluded by every sort of reliable evidence. But mental shocks and strains of all sorts will of themselves cause the disease. There is a certain temperament that predisposes to it—the intensely sanguine. Dr G. R. Wilson contends that there is a "diathesis of general paralysis," and adduces very many pertinent facts in favour of this view. "General intelligence," "ambition and energy, sociability and a large capacity for enjoyment, a firm belief in oneself, and a preference for handsome women," are the good and sane characteristics of this diathesis, while a lack of the higher control, tendencies to excess, especially sexual excess, selfishness, vanity and restlessness, are its weak points.[2] This accentuates the above causes of brain irritation and exhaustion.

[1] *Brit. Med. Jour.*, 5th August 1893.

[2] *Jour. Men. Sci.*, Jan. 1892, "The Diathesis of General Paralysis," by G. R. Wilson, M.B.

Hereditary predisposition to insanity or to the neuroses is less common in this disease than in the ordinary forms of insanity. But lately I had a general paralytic patient, and Dr Savage had his twin brother,[1] there being a strong family history of insanity, both men being of the same temperament and disposition, viz., sanguine and keen, both being of very active habits, both indulging to great excess in wine and women, both following a similar occupation, an exciting one, and both being affected by the disease within a year of one another. Such a clinical history has never been put on record before, and it shows conclusively that heredity may predispose to the disease. The idea is gaining ground, however, that heredity, either mental or neurotic, has more to do with the development of the disease than was formerly supposed.

Age.—The common age for the occurrence of the disease is between 25 and 50. The chart in Plate V. shows its prevalence in 104 cases admitted to this Asylum as compared with mania and melancholia, and the ages at which it occurred. The greatest number of cases occurred between 40 and 45 years. But there are a few exceptional patients. I have referred to the "developmental" cases (p. 403), and I have lately had a case beginning at 66 years of age, the diagnosis being confirmed by *post-mortem* examination.

Pathological Appearances in the Brain in General Paralysis.—At this point I think it is better to supplement the clinical history of the disease by describing very shortly the pathological appearances met with in the brain. It is a subject of supreme importance and interest not only for the psychiatric department of medicine, but for every branch. When we know fully the pathology of this disease and that of epilepsy, we shall be very near the solution of the chief problems of mental disease and of many social facts now very obscure. The encasings and supports of the brain are all found to be affected, and the longer the patient has lived the more marked are the changes met with. The bone of the calvarium is

[1] *Jour. Ment. Science*, vol. xxxiv. p. 65.

denser and harder, in many cases the diploë being obliterated and in many others there is a distinct layering and deposit of new bone on the inside of the inner table of the skull-cap, this being usually confined to the frontal and parietal bones. The dura mater is thickened, adheres more or less morbidly, and frequently leaves shreds attached to the bone. In many cases I have seen spicula of bone growing in at the junction of the falx, which is always much thickened. When the dura mater is reflected, the most characteristic morbid appearances of the disease are seen. I have endeavoured to depict some of them, as seen in a very advanced case, in Plate I. (see Frontispiece).

In a number of the cases we find, under the dura mater, and attached to it, lying between it and the arachnoid, a new substance of a morbid and peculiar kind, commonly called a false membrane. It varies in consistence from a hard fibrous texture to a jelly, in colour from a dull greyish-white to that of blood clot, in thickness from a film to a quarter of an inch, in extent from a small patch or two to a covering of both hemispheres above and below. It is usually thickest over the vertex. In some cases it looks like a clot, in others like an extra layer of dura mater, but it can always be easily scraped away. When it is removed from the dura mater that membrane is commonly not congested nor inflamed looking. It always contains new blood-vessels, and nearly always blood-corpuscles or blood-colouring matter. Drs Middlemass and Robertson[1] have devoted much attention to the investigation of this condition. They conclude that it is not inflammatory and not hæmorrhagic in the ordinary sense, but that for its formation we must previously have "a hyaline degeneration of the vessels and their perivascular canals which leads to the obliteration of both. While the vessels are undergoing this morbid change small hæmorrhages frequently occur from them. Their obliteration is followed by the formation of new capillaries which are, doubtless, required to maintain the nutrition

[1] *Edin. Med. Jour.*, February 1895.

of the fibrous tissue. From these new vessels, the formation of which is necessarily accompanied by the development of a certain amount of granulation tissue, further minute hæmorrhages occur. The extravasated blood becomes the basis of more granulation tissue. These changes are at first subendothelial, but the extending granulation tissue soon breaks its way through this barrier, and a membrane becomes developed." But I must refer to the full and elaborate description by those gentlemen. This is the so-called *pachymeningitis hæmorrhagica interna* of the Germans, a ridiculous and misleading name, for it is not the result of inflammation at all. The formation of the substance is, to my mind, full of interest and instructiveness. Its formation implies, I believe, a very great intensity of morbid action in the convolutions, vascular disease, and above all, great and sudden changes in the blood-pressure within the cranium.

Under the membrane if present, and under the dura mater if not present, we see in very well marked advanced cases the appearance presented in Plate I. *b*. on the anterior lobe. The arachnoid is immensely thickened, and either mottled with white spots or striated along the sulci with white fibrous-looking bands.[1] Under it there is what looks like a dull opaque jelly, through which the convolutions dimly appear, and under which great tortuous congested veins meander, some of these being, perhaps, if the case has died during or after a congestive attack, obstructed by little white masses of hard *ante-mortem* clot. But this is not really a jelly, for if the arachnoid is pricked it nearly all oozes out as a dirty opaque fluid, that amounts to from 2 to 10 ounces in quantity. This is, in my opinion, a compensatory fluid, filling up the space left vacant by the atrophy of the convolutions and brain generally. It does not nearly represent the whole

[1] For a full and accurate description of the pathological process that takes place in the pia-arachnoid in such cases I must refer to Drs Middlemass and Robertson's original investigations as described in the *Edin. Med. Jour.* for April and May 1895.

of the brain atrophy, for we have, in addition, enlarged ventricles and dilated perivascular spaces, which often contain 6 ounces more of fluid. But the advocates of the theory that this disease is an inflammation in its essence, look on this fluid as an inflammatory product, and consider that its presence causes pressure within the cranium, and this again causes irritative maniacal symptoms, and ultimately atrophy of the convolutions. To relieve this hypothetical pressure Drs Clay Shaw and Batty Tuke have trephined the skulls of patients labouring under the disease, and opened the dural space. After the fluid has drained off, the pia mater and the convolutions are better seen. Both are strikingly abnormal. The pia mater is thickened, vascular, and tough to an enormous extent. The convolutions are atrophied, especially over the vertex of the anterior and middle lobes and in some localised places elsewhere, and generally tend to be wedge-shaped, and lie loosely together. When the pia mater is removed from the convolutions—do this in every case of mental disease you examine,—it is found to adhere to and raise up portions of the outer layer of the grey substance on the ridges of the convolutions—seldom in the sulci—which stick to the pia mater, are removed with it, and appear as irregular patches over the membrane that has been detached from the brain (see lower part of Plate I.). The convolutions from which those patches have been removed look eroded, like the surface of a cheese where a mouse has been (see middle portion of Plate). Now, this adhesion of the pia mater to the convolutions is a very morbid phenomenon. It has never been found to any extent in any patient whose mind was sound and strong before death. It is, in different cases, confined to a few convolutions, or general over all the brain. It is by far most frequently confined to the vertex and to the anterior and middle lobes, to the convolutions of the hemispheres lying in contact with each other above, below, and in front of the anterior part of the corpus callosum, and to the gyri round the olfactory bulbs at the base. Its greatest intensity

is evidently different in different cases, so that it affects different areas. This corresponds to the clinical fact that in one general paralytic the speech will be found most affected, in another the writing, in another the walking, and in another the trophic power. I have seen two cases in which gangrene of the limbs occurred from pure trophic nerve failure. The two hemispheres usually adhere anteriorly, and in the attempt to separate them some of the substance of the convolutions will be torn away. In some cases we find this adhesion of the pia mater at the base, over the orbital convolutions and the middle lobes. I have seldom seen the tips of the posterior lobes much affected. They are usually healthy-looking. Though the adhesion is only partial in most cases, I have seen it almost universal. It merely represents, in my opinion, the acme of a pathological process that is very general in the convolutions. In examining the different convolutions of the brain of a general paralytic microscopically, and the different parts of one convolution, we find that, though the morbid appearances are in greater intensity in one place than another, they by no means coincide in absolute intensity with the parts to which the pia mater has adhered. I have seen as much disease microscopically in a convolution to which it did not adhere as in those to which it did. There is rarely or ever much adherence of the pia mater that dips down into the sulci, and I have never seen one convolution adhering to the next. This fact has always, in my judgment, gone to prove that the disease is not of inflammatory origin, using that word in its ordinary sense. The fact is, that the pia mater that dips in and separates adjoining convolutions is different in composition and use from that portion that overlies the whole brain. The former contains fewer lymphatics, and is a mere fine network of fibres to hold the vessels, while the latter is full of lymphatic spaces.

On section the grey matter of the convolutions affected is often divided into two distinct layers, the outer being grey and opaque-looking, and there is often a line of red congestion

as the demarcation between those two. Along this line the brain tissue seems softer and more pultaceous. There is no real sclerosis, though, on the whole, the outer layer of the grey substance may be slightly harder in texture than normal. In some cases, however, it is distinctly softer. The whole grey matter is thinner, especially in the cases that have lasted long. The white substance is often very congested, especially in irregular patches (as seen in Plate IV.), its perivascular pieces are always enlarged, and the small vessels tough and their coats thickened.

On opening into the ventricles they are nearly always found enlarged, but the most striking peculiarity is, that their normally delicate epithelial linings are toughened and roughened in an extraordinary degree. Their surfaces look in the less marked cases like frosted glass, in the more marked cases they are granular, and even minutely nodular, feeling rough to the touch. They are leathery, too, when torn. This condition is usually most marked in the floor of the fourth ventricle, and the covering of the calamus scriptorius is always a greyish, gelatinous-looking, but really tough membrane. The microscopic examination of a section of such a granulation at once shows what has taken place (see Plate II. fig. 3). The single normal layer of delicate epithelium has become enormously hypertrophied, and in addition, the neuroglia underneath it, and for a short distance down into the nerve fibres, or cells, has become hypertrophied in limited areas, throwing itself up in masses, thus constituting the bulk of the granulations.

Microscopic Appearances.—The microscopic appearances in the brain in general paralysis have been the subject of the most careful examination by some of the best modern histologists. Meynert, Mendel, V. Gudden, Voisin, and many others abroad, and Batty Tuke and Mickle in this country, have all greatly advanced our knowledge; but it was not until Bevan Lewis devised his method of examining and staining fresh sections of brain that the morbid changes could

be followed in each constituent tissue of the diseased cortex and through the various stages of the disease. In the chapter on the "Pathological Anatomy of General Paralysis," in his *Text-Book of Mental Diseases*, we, for the first time, have opened out to us the main facts on which a pathology of the disease can be based. Most of Lewis' facts are indisputable and of supreme importance. His interpretation of some of them admits, perhaps, of difference of opinion, at all events on some points.

I shall first shortly summarise Lewis' facts, almost all of which I may say we have been able to confirm in the pathological laboratory of the Royal Edinburgh Asylum through Drs Middlemass and Robertson, the pathologists here, using Lewis' methods. During the first stage of the disease, in acute cases, there is great "turgescence of the vessels of the pia," and "great distension and engorgement of the cortical arterioles." "The perivascular lymph channels are the site of a nuclear proliferation and segmentation of protoplasm, often so enormous as to entirely conceal the inclosed vessel from view." Lewis has thrown an entirely new light on the lymphatic system of the cortex, both in its histological, physiological, and pathological aspects. In the first stage of the disease, which he calls that of "inflammatory engorgement," he says little about the condition of the nerve-cells, which after all constitute the tissue for which everything else in the cortex exists. Next, there is a "notable increase in the nucleated protoplasmic cells of the *adventitia* of the vessels of the pia, together with a general though slight proliferation of the most superficial flask-shaped cells of the peripheral zone of the cortex and the vessels of the *intima pia* resting upon it." From these cells of the pia long delicate processes are sent out extending deeply into this layer. Next, there is "a very free exudation into the meshes of the pia." The vessels lose their support through atrophy of the cortex, and there is in consequence a "strong tendency to hæmorrhagic transudation or to actual rupture and hæmorrhage."

The second stage is characterised by a further enormous production of protoplasmic masses on the walls of the lymph channels in the perivascular canals within the substance of the cortex, by a granular change in the nerve-cells, which is succeeded by a fuscous degeneration and breaking down into granular debris. Then comes the most striking of all the marked changes. The ultimate cells of the lymph connective system which have direct connection with the walls of the capillaries and minute vessels by means of fine processes, become enormously enlarged and developed. Instead of being fine spider-like cells (Deiter's cells) they become the "phagocytes" or scavengers of the tissue, because the usual lymph *channels* have become blocked up, and they enlarge accordingly both in cell and cell process until in a section they seem to be the dominating element of the cortex (see Plate VIII. fig. 1 *a.a.*). "Occasionally several of these active elements are seen completely covering a large nerve-cell which is in an advanced stage of decay," removing its disintegrating substance filled with its molecular debris. "They are usually noted in great abundance in the deeper half of the peripheral or outermost layer of the cortex." The medullated nerve-fibres of the cortex are found to be undergoing absorption as well as the cells, as had been previously clearly described and figured by Tuczek.

In the third stage these proliferated spider-cells throw out innumerable fine processes that form a fibrillar meshwork, and the nerve-cells further degenerate and atrophy. In fact a sclerosis and general atrophy take place.[2]

Lewis' explanation of those morbid changes in the cortex is that we have a true inflammatory process arising first in the vascular tissues of the pia, through which the blood-vessels are damaged, the lymph channels are obstructed,

[1] *Beiträge zur Path. Anatomie u. zur Pathologie de Dementia Paralytica.*

[2] The appearances of the diseased cells and vessels will be seen in Plates XIII., XIV., and XV.

all the tissues undergo mechanical and vital changes, the nerve-cells suffering in nutrition through those changes in the vessels which bring them pabulum, and in the lymphatics that remove the products of metabolism in their texture. He contends against Mierzejewski's view that the morbid process in the cells is "inflammatory in its intrinsic nature." He "wholly fails to recognise an inflammatory condition in the cells themselves, but sees the evidence of a true degeneration due to acute nutritional anomalies," and he "fails to observe any notable difference between the changes through which these cells pass, and those of the cortex in senile atrophy, except in the greater tendency to a true steatosis in the latter state." It is always an invidious thing, that should never be lightly done, to put a different interpretation on the facts discovered by a competent and acute investigator. But the physiology and the pathology of the brain cortex is as yet so backward that it cannot injure the ultimate truth to put forward a different explanation of Lewis' facts. My view is that general paralysis is not essentially an inflammation of the pia, extending to the cortex, through which the brain cells are secondarily disturbed and ultimately killed, but that it is a special and distinctive disease of the mind cortex primarily, the cells of which take on a morbid nutrition and energising, and secondarily cause the vascular and lymphatic changes. My reasons for this view are the following, which, it must be understood, are put as succinctly as possible.

1. The chief causes of the disease are nervous and mental, so far as we can assign them, *e.g.*, sexual excess, alcoholic poisoning, bodily and mental strain and exhaustion, &c.

2. The course of the disease is that of a typical nerve degeneration in the highest and dominating centre of all, it is steadily progressive, and affects all the lower and subsidiary centres in a steadily progressive way, the cord, the retina, the peripheral nerves, the sympathetic ganglia, and the whole trophic system.

3. At the beginning of many other nervous degenerations and dissolutions there is a preliminary stage of irritation and quasi-inflammatory symptoms, *e.g.*, locomotor ataxia; and even senility often has such a stage.

4. The occasional high temperature in the first stage of general paralysis can be explained by its being a maniacal temperature, and is often equalled in uncomplicated acute mania. It seldom—apart from congestive attacks—rises to a true inflammatory temperature.

5. The vascular congestion and subsequent lymphatic changes can be satisfactorily explained through the vaso-motor and trophic centres in the cortex being affected. The cortex is now generally recognised to regulate its own blood-supply through the vaso-motor centres which exist throughout its substance. It is well known that mental exertion, mental irritation and excitement determine blood to the cortex. No one thinks of such congestions as being inflammation.

6. The morbid process never, in any one case, goes on to form ordinary inflammatory products such as pus.

7. There are many cases of the disease—one-third—in which there is no first stage of mental excitement or irritability, or high temperature, or headache, or any symptom pointing even to congestion of the membranes or cortex. The clinical aspect of such cases is that of a slowly advancing loss of function of the cortex.

8. Looking to the history of the examination of the brain cortex, it seems a far more reasonable assumption that by our present methods of examination we are not yet able to demonstrate the changes in the cells in the earliest stages of the disease, while the changes in the coarser tissues, such as the blood-vessels and lymphatic system, being far easier seen, seem to be the first pathological changes, when in reality they are secondary and resultant.

9. Every individual pathological change described by Bevan Lewis can be seen in other varieties of brain disease, *e.g.*, brain syphilis, softenings, alcoholic damage, senile changes,

traumatic injuries, yet these are admittedly distinct from general paralysis in their nature and course.

10. If it was an inflammation there would surely be some exceptional cases that would recover. Its universal incurability agrees with the theory of its being a specific degeneration or disease of the special cortical tissue, that is, the vehicle of mind, which brings mind into relationship with motion, but does not agree with the inflammatory theory.

11. The universal vascular and trophic changes throughout the course of both carotids, as evidenced by the liability to hæmatoma, by the "false membranes," by the nutritive changes in the ear cartilages, the skull bones, in the dura, in the epithelial linings of the brain, are best explained by a morbid action of the vaso-motor centres in the cortex which control both carotids rather than by a local inflammatory action arising in the pia.

12. This is not a question of terms merely. The advocates of the view that the disease is in its essence a degeneration of the highest cortical centre admit that the lymphatic and vascular changes are indistinguishable from inflammation in the appearances seen, but contend that these are secondary and non-essential. The advocates of the inflammatory theory admit the degeneration and atrophy of the nerve-cells of the cortex, but contend that those are secondary. The degeneration theory is based on the whole etiological, clinical, and pathological history of the disease; the inflammatory theory is based almost exclusively on visible pathological changes in the vascular and lymphatic elements of the cortex.

There is no nervous tissue that is not found diseased and degenerate in advanced cases of the disease,—the cord, the retina, the peripheral nerves, the sympathetic ganglia, &c. Dr Greenlees has shown that hypertrophy of the heart is frequent in this disease, no doubt caused by the disturbed innervation of the organ and the blood-vessels. As I first demonstrated many years ago, the bones are friable, and altered in texture and composition from the same cause.

Nature and Causes of the Disease.—What, then, is general paralysis? There are few diseases whose essential nature we as yet know. But we know that the special trophic energy and inherent physiological qualities of different tissues become perverted in special ways, so that most tissues have their own special types of disease. There can be no doubt that the grey substance of the convolutions of the brain of man is the highest in quality and function of any organic product yet known in nature. That substance reaches its highest development in the male sex between adolescence and middle life. Its uses are called forth in the highest degree in the European races who live in towns. Its physiological abuses by alcoholic and other poisoning, by over-strain, through violent energising stimulated by continuous strong mental and other stimuli up to the point of exhaustion, are also most common under those circumstances. Its cortex is most delicately constituted, has far more blood, more fine fibres and more minute cells than any other portion of the brain, and, on the whole, may be regarded as the most important factor in mentalisation, being in fact the mind tissue. Immediately underlying the smaller cells in the convolutions, in certain parts of the brain, we have what are probably the motor cells. This outer rind of grey matter, to which trend fibrils from every neuron, is precisely that affected first in general paralysis. The proof goes to show that all the other nervous degenerations which finally affect the whole nervous system are subsequent and sequential. Granted a progressive and incurable disease of this mind tissue, towards which the whole of the rest of the nervous system tends and in which it ends, which controls and regulates it all, and which is its crown and highest development, being in fact the highest and dominating centre of the organism, it is quite explicable that all the rest of the nervous system should degenerate in structure and function, and in fact die slowly and progressively. It is a quality of nerve tissue to degenerate in the lines of physiological activity, and in this disease we have a good illustration of the law. It is *the* great descending de-

generation. General paralysis is in fact a special and absolutely distinctive disease of the cortex, and peculiar to it. In many other diseases we have adhesion of the pia mater to the convolutions, but in none the element of certain progression of neurine degeneration. It is essentially a death of that tissue. I look on it as being equivalent to a premature and sudden senile condition, senility being the slow physiological process of ending, general paralysis the quick pathological one. The causes of it are causes that have exhausted trophic energy by over-stimulation. Its first stage is accompanied by undoubted morbid vaso-motor dilatation, so that all the tissues enveloping the brain, and holding its elements together, receive an abnormal supply of blood, and thereby acquire tissue hypertrophy—the bones of the skull-cap, the membranes, the neuroglia, the lymphatics, the epithelium, and the vessels. Just as the tissue degenerations, especially the brain degenerations of old age, cannot be arrested, and are necessarily progressive, so is general paralysis. Those high nerve cells have lost their once inherent power of self-restoration, and so they degenerate and atrophy. The diseased process is peculiar because the tissue in which it originates is peculiar. It is admitted by those who put down the disease to syphilis, that it is a lesion entirely different from any other syphilitic lesion, except it is conceded that locomotor ataxia is syphilitic in origin. Anti-syphilitic treatment admittedly has no curative affect on it.

Treatment of General Paralysis.—The disease being as yet incurable, treatment can only be directed towards relief of symptoms. But considering that in the early stage of many cases it is impossible to make the diagnosis certainly as between this disease and brain syphilis or alcoholism, I would in all such cases give large doses of the iodide of potassium with about $\frac{1}{12}$ grain of bichloride of mercury, with blisters or other counter-irritation to the scalp, keeping the patients on the medicine for six weeks or so. I have now met with many cases who had almost all the early symptoms of the disease

and recovered. I have no doubt they were cases of brain syphilis. To subdue or modify the acute and dangerous maniacal excitement of the first stage, I have found no drug equal to sulphonal in doses of from 20 to 45 grains repeated thrice daily till the patient was got under the influence of the drug, and then the doses diminished in number sufficiently to keep the patient under the influence of the drug. If for the first week or so of treatment the patient is mostly kept in a quiet darkened room the effect will be all the better. I have had many cases in which, after a few weeks of this treatment, the patients passed into a more quiet state and remained so. Lately Drs Clay Shaw, Batty Tuke, and Macpherson have reported great improvement after trephining, and the first reports a virtual cure. Of the cure I am most sceptical, but the operation can now be done with little risk and seems worth trying further. I have tried it with no success. Almost anything is worth trying in this *bête noir* of the mental physician. For the treatment of the epileptiform attacks a smart purge and a few doses of the bromide of potassium seem to me the best to stop the convulsions when they are very severe and long continued. I have tried large doses of chloral and putting the patients under chloroform, with the result usually of temporarily stopping the convulsions, but I noticed that several of the patients seemed none the better of having the convulsions stopped, and died very soon. In the third stage bedsores are the great risk and trouble in nursing the disease. Keeping the skin dry, hardening it, frequent changes of position to change the points of pressure, keeping the patients sitting during the day in easy invalid chairs instead of keeping them in bed, and finally the use of water-beds are the chief means now used. Most general paralytics need asylum treatment, but there are a few who get through the various stages of their disease at their homes, and die comfortably there.

Local Distribution.—General paralysis prevails in some places and in some races, and is almost unknown in others.

As yet the Asiatic is not subject to it, the savage in the savage state is free from it, and the Irishman and Scotch Highlander need to come to the big towns or to go to America to have the distinction of being able to acquire it. The female sex is very unsusceptible to it, but if women drink much bad liquor and live riotous excited lives, as in the cotton and manufacturing districts of England, they too will become general paralytics. I have only seen four females in the rank of ladies suffering from general paralysis. In this country the Durham miner, when earning good wages, fulfils the most perfect conditions yet known for the production of general paralysis. Every sixth lunatic admitted to the Durham County Asylum is a general paralytic. In the Royal Edinburgh Asylum, which draws its pauper inmates from the city of Edinburgh, and its private patients from all classes and all districts, every seventeenth admission during ten years has been a general paralytic; and in the Invernes and Irish District Asylums the admission of a case is a rare event.

PARALYTIC INSANITY—ORGANIC DEMENTIA.

From "Softenings" in 83 per cent., causing direct cortical damage, destruction of "Association fibres," or reflex irritation, or all three —also from Apoplexies, Tumours, Atrophies, Chronic Degenerations, &c.; Heredity—Symptoms vary, but always Dementia—Motor Restlessness, analogy to Senile Insanity, Speech—*Tumours* may cause irritability, hallucinations, suspicions, dementia, stupor, speech affected like General Paralysis in some cases; paralytic, congestive, and epileptiform attacks—Paralytic Insanity 3 per cent. in Royal Edinburgh Asylum—19 per cent. recover.

Paralytic Insanity, or Organic Dementia, is that form of mental disturbance that accompanies and results from such gross brain lesions as apoplexies, ramollissements, tumours, atrophies, and chronic degenerations of the brain, affecting

the convolutions and their functions either primarily or secondarily. It has nothing whatever to do with general paralysis. Its symptoms vary according to the position, kind, and intensity of the pathological process, and the age and heredity of the patient. But it is typically a dementia, an enfeeblement, a lessening of the mental power, usually superadded to some sort of motor paralysis. Preceding this enfeeblement there may be, and there usually is, a certain amount of depression, excitement, or impulsiveness at first, followed afterwards by a mild exaltation and emotionalism of a childish kind, and loss of control, this gradually passing off and leaving the patient, if he lives long enough, forgetful, helpless, and torpid. Paralytic insanity, like general paralysis, has a gross and demonstrable pathological basis, but it differs widely and essentially from it in not being a specific disease of the brain convolutions, in not running a progressive course, in the mental symptoms not being necessarily incurable, in the irregularity and variety of the mental symptoms present, and of the pathological lesions. It is best and most commonly seen in a case where there has been apoplexy from rupture of a blood-vessel in one of the great basal ganglia, or embolism, or thrombosis, followed by local starvations of brain tissue and ramollissement; those destructive processes cutting off areas of the convolutions by destroying part of the projection and association systems of fibres by which the convolutions are brought into connection with the basal ganglia, the cerebellum, the cord, and the muscles, or with each other. This interruption may of itself sensibly affect the mental power, and those pathological processes tend to advance up into the convolutions, so destroying the sources of mental energy directly. A brain affected by apoplexy or embolism, and in that case probably having its blood-vessels generally diseased, is an organ on the verge of dissolution. Such processes are the beginning of the end in most cases, and the mental symptoms are often the most prominent and by far the most troublesome. Yet, after all, they are not

the essential part of the disease. This disease is often not an insanity in the popular acceptation. In many cases the gradual mental decay is never thought of as a mental disease at all. It is rather looked on as a necessary and natural accompaniment of the bodily disease. In most cases it is not at all beyond the ordinary nursing capacity and management available in the patient's home, if he has any money or relatives at all. The very poor in the great towns, when affected by it, are sent to workhouses, and not usually to asylums for the insane. It is only the worst and most troublesome cases that it is necessary to send there—the noisy, the restless at night, the very dirty, the troublesome. Motor restlessness, and noise, especially at night, is a special characteristic of the worst class of cases, and this often needs, for the protection of the patient, special nursing and special rooms. But there is no essential difference between the helpless hemiplegic whose memory is gone, his energy impaired, his thinking capacity paralysed, and his affective power deadened, who sits in his easy-chair at home, and the restless, shouting, sleepless paralytic insane man in the hospital ward of an asylum.

Heredity.—The heredity of the patient plays an important part in the origination of paralytic insanity of the more marked kind. While a man with no nervous heredity may have a large spot of softening in one of his corpora striata, he yet may be calm, reasonable, and quite manageable, though forgetful, torpid, and emotional, while the man with a bad nervous heredity will become, under the same conditions, restless, depressed, noisy, and sleepless. There is no doubt that apoplexies and all sorts of other gross limited lesions produce, in unstable brains, great convolutional disturbance through reflex excitation. If such brains are unstable in their motor centres we have convulsions, local or general; if there is hereditary mental instability, then we have the ordinary symptoms of mania or melancholia. I had once as a patient a young woman (G. N.) under 30,

who, having heart disease, became hemiplegic on her right side, and aphasic after the birth of a child. Immediately after this great mental depression came on, with suicidal tendencies, for which she had to be sent to the Asylum. The hemiplegia soon passed quite away, but the aphasia remained all her life; and when the mental depression passed off in a few months she gradually became exalted, and remained so for some months. Then she again became depressed, and was mentally a typical case of alternating insanity (*folie circulaire*) for the seven years she lived after this. She at last died of the heart disease, and I found Broca's convolution almost destroyed by an old embolism, but the rest of the brain showed only the results of repeated excitations and congestions. In this case, which I mention as being a very rare and most unusual kind of paralytic insanity, the embolism and its consequences no doubt excited into pathological activity a previously existing hereditary weakness of the mental portions of the convolutions which had before that been stable in their working. In the more typical cases of paralytic insanity the same thing occurs in old and partially worn-out brains.

Relationship of Paralytic and Senile Insanities.—There is a close analogy in symptoms, pathology, and course between paralytic and senile insanity. In fact, the majority of paralytic cases are also senile, and in many cases we are at a loss to say whether they are senile or paralytic. In a brain with general senile degeneration and diseased vessels, a local lesion occurs, and we have it exciting and lighting up a general convolutional flame. I have had many cases where there was a family tendency to mental disease, but it had never shown itself in any actual symptoms till the very end of life, when an attack of paralysis occurred, and this was followed by melancholic or maniacal symptoms and subsequent dementia. I have had several such patients whose children had become insane at an early age long before them, they themselves remaining well till they became hemiplegic. One such

case was G. O., æt. 67, who remained quite well mentally, and did his work till he had a slight attack of left hemiplegia. Then he became melancholic, sleepless, and suicidal, and had to be sent to the Asylum, where his daughter, G. P., had been a patient for thirteen years, suffering from essential paralysis of infancy on the right side, epilepsy, and dementia.

Motor Symptoms.—The motor symptoms in paralytic insanity must be regarded as integral parts of the disease. The speech is the most characteristic of these in the ordinary hemiplegic cases. It is a thick or paretic articulation, not commonly a tremulous speech. Every word from the beginning of a sentence to the end is imperfectly pronounced. The labial and facial muscles do not quiver before or during the articulatory process, as in general paralysis, though the tongue usually trembles when put out. It is a simple paretic, not a convulsive speech. Long difficult words and sentences are attempted, and got through in a way, but are not found impossible of attempt, or end in a mere inarticulate quavering vowel sound, as often occurs in general paralysis. In the latter disease it is essentially a convolutional-lesion speech; in the former it is the speech of a lesion in the basal motor ganglia, or of gross limited lesion in the cortex. In the former it is the originating motor speech co-ordinations of the convolutions that are affected, in the latter the secondary co-ordinations lower down. In very many of the paralytic cases we have apoplexies and similar lesions of the convolutions themselves, and in such the speech symptoms are always more like those of general paralysis. In such patients, too, we are apt to have epileptiform, epileptic, and congestive attacks. In many instances, even when the original lesion has been in the corpora striata or in the motor fibres of conduction near it, destruction of tissue or atrophy will go on up to the convolutions; in fact, if the patient lives long enough it is sure to do so, and the speech will become more like that of the second stage of general paralysis.

I need hardly say that if the lesion affects the posterior portion of the third frontal convolution of the left side, or the Island of Reil on that side, or the fibres of communication inwards from those parts, or certain portions of the extra-ventricular nucleus of the corpus striatum of that side —in such cases we will have aphasic speech symptoms. It is a disputed question whether complete aphasia can coexist with perfect integrity of the intellectual faculties. If the lesion be strictly limited to the speech centre, which it very rarely is, the loss of mental power may be slight, but whether we can with any kind of aphasia have mental completeness according to the previous standard of perfect health of the individual is another matter. I do not believe we can have such completeness if we could apply proper tests. I have never seen a case where it existed.

Here is a case of paralytic insanity, very common indeed, where extreme bodily helplessness coexisted with such mental symptoms as made the patient's presence almost intolerable in a private house, and even to the neighbours who lived near.

G. Q., æt. 64. Had an attack of apoplexy with left hemiplegia four months before it was necessary to send her to the Asylum. Her mother died of apoplexy at the age of 84. There was no other neurotic heredity discoverable. During the first month after the apoplexy she was stupid and half comatose. Then she began to have hallucinations of sight, and to be fanciful, irritable, and very unreasonable, to sleep badly, and to have a morbid craving for food with no sense of satiety. The mental symptoms got gradually worse, while the hemiplegia remained complete. She became subject to periodic fits of depression, lasting whole days and nights, during which she would cry and scream loudly without intermission in a peculiar baby-like voice that penetrated through the house and into the street, and was most annoying to the neighbours, especially at night. There was no reasoning with nor soothing her. It was evident that she had a sense of extreme organic discomfort, and that she probably

had pain. Her delusions all took their origin from her sensations. She affirmed that her left leg and arm did not belong to her, and would order that they should be taken away. She affirmed her food was poisoned, and she said the people near her were going to kill her. She could not attend to the calls of nature, and when moved to be dressed and washed screamed at the pitch of her voice. She had no memory at all for recent events, but lived in the past. She was very emotional, crying nearly every time she was spoken to, but her appearances of emotion, like the rest of her mental life, were merely automatic. She showed no real affection for her family. She constantly threatened suicide. She mistook the identity of those about her, calling strangers by the names of old friends. With the hand she could move she would try to tear and destroy and break things. After about three months of this state she had to be sent to the Asylum, chiefly on account of the noise she made.

She was fed and nursed and cared for, placed on a water-bed, and kept warm, and placed in a room where her noise did not disturb others. Sedatives and soporifics, such as the bromides and chloral, were tried in moderate doses. They usually did not act in producing quiet or sleep till twelve hours after they were given. This is not uncommon in maniacal conditions. An old night attendant I once had pointed it out first to me. He divided his noisy people into two classes—those in whom the night draughts produced sleep the night they were given, and those in whom they produced sleep only on the following night. The advanced and advancing brain disease being destructive and irritative in its character, evidently involving the convolutions to a serious extent, seemed capable of no alleviation. She steadily got weaker, and died in about four months from the beginning of the attack. No *post-mortem* examination was permitted. The case, looked at from the point of view of mental symptoms, was one of melancholia of the excited variety; but the whole of the mental symptoms were so secondary,

in a clinical point of view, to the attack of apoplexy and hemiplegia, that it is evident the appropriate name for such a case is that of paralytic insanity. The irregular periodicity in the symptoms, and the days of quiet she had, seemed to me —and this is markedly the case in many senile cases too—to be merely the stupor and inaction of a spent organ, that through sheer exhaustion could no longer evolve energy till an accumulation of energy again took place.

The following is an example of the kind of recovery that sometimes takes place in paralytic insanity :—

G. S., æt. 62, a steady temperate man. His sister was a patient in the Asylum once. Two years before admission he had had two shocks of paralysis on the left side. Since then he has got more and more "nervous," and at times noisy and violent. For six weeks before admission he had been distinctly insane. He was poor, and poorly attended to at home. On admission he was childish, facile, suspicious, and talkative. He thinks the house is coming down on him, that a surgical operation was performed on him yesterday, and that people are watching him to do him harm, and many other changing fancies. He could walk, but dragged slightly the left leg. He had a paralytic thick articulation. His heart was diseased. He steadily improved under a good diet, regulated exercise, and work, and general supervision, till in three months he left the Asylum quite sane, and able to earn his own livelihood, though not strong-minded. He worked as a gardener for two years, and then was sent back to the Asylum with much the same symptoms as at first. The mental symptoms and the hemiplegia again disappeared almost entirely, and in seven months he was able to leave the Asylum. Though not able to work much, he stayed quietly at home with his son while he lived.

Brain Tumours.—Among the causes of paralysis and paralytic insanity, other than apoplexies and ramollissements, the most interesting in relation to the mental symptoms they produce are brain tumours. Such tumours being various

in kind, position, and mode of growth, those conditions all affect the symptoms bodily and mental. Some tumours grow slowly, and their effects can be traced to intracranial pressure alone. In many such cases no symptoms have been present during life at all, or no symptoms that could lead to a correct diagnosis. Other tumours cause violent irritation, direct and reflex, in the brain tissues near and distant. Others cause destructive lesions, and especially ramollissements in the brain tissue near them. Others set up slow progressive changes both in near and distant parts of the brain and the organs of special sense. Intense cephalalgia is undoubtedly the most common sensory symptom. There are no headaches like those caused by tumours of the brain. They sometimes stupefy and "drive the patient mad." Next to those, optic neuritis and blindness are the most common symptoms. The motor signs are paresis and paralysis local and general, convulsions local and general, and congestive attacks, — in those, as in other respects, mentally and bodily, imitating general paralysis. The mental symptoms most common in cases with brain tumour are, first, irritability and loss of self-control, and "change of disposition," then depression, with or without excitement, then confusion, loss of memory, muttering to self, loss of interest in all things, perhaps delirious attacks, then drowsy half-consciousness, ending in coma and death. Such cases may die in a month, or may run on to twenty years from the beginning of the symptoms. Different authors have had extraordinarily different experiences as to the frequency of brain tumours, from 2 per 1000 up to 28 per 1000 deaths among the insane, which latter has been my own experience.

The following is an interesting and very typical case[1] *of insanity from tumour, which illustrates nearly all the common mental and bodily symptoms of that disease:—*

[1] For this, along with other cases of mine, and more full observations on the mental accompaniments of brain tumours, see *Journal of Mental Science*, July 1872.

G. T., æt. 30. First attack of insanity; no hereditary predisposition so far as can be ascertained; was intemperate in his habits, which is given as the predisposing cause of his insanity, the exciting cause being evidently organic disease of brain. Has shown symptoms of insanity for four years. His first mental symptoms seem to have consisted in a change of temper, great irritability, and an altered affection for his wife and family. His first bodily symptoms were intense cephalalgia and a gradually increasing blindness, this last preceding by some time the mental alienation. He has been getting much worse mentally of late — being excessively irritable, violent to his wife and daughters, very abusive and foul in his language, and then would accuse his wife of all the violence. He still drank hard when he could get whisky, and all his mental symptoms were very much worse after drinking. He professed to be sorry for his violence and bad temper afterwards. The blindness became complete, and he also became slightly deaf shortly before his admission. During the twelve months before admission he had several "epileptic" attacks. He wished to go to the Asylum, and walked there with a friend.

On admission he showed slight signs of excitement and confusion of mind, but his memory was good. He was quite coherent, and, on the whole, sharp and intelligent. Could answer questions correctly, and had no delusions. He was a heavy-looking man, with the blind expression of face, his features combining the expression of an advanced general paralytic and a man who is drunk. His gait was affected like that of a tipsy man. His speech was thick and rather indistinct. He was quite blind, and was deaf in his right ear. He said he had at times cramp in his legs. Reflex action in legs normal. Right pupil more dilated than left, and both nearly insensible to light. Lungs and heart normal. Appetite good; tongue very white; bowels costive. Temperature, 97·8°; pulse, 72, good.

He remained in the state described for the first fortnight,

except that on the very slightest provocation he became wild with passion,—completely losing control over himself, and capable of doing any violence to those about him. In a fortnight he had a severe epileptiform fit, and was quite unconscious after it, but he was as usual next morning. He had such attacks frequently ever afterwards. For the first six months there was little change in him. After that he got more obtuse in mind, weaker and more paralysed in his legs, his articulation thicker and more indistinct, his pharnyx more insensible and paralysed, so that he would have choked himself on any solid food. In nine months his legs were quite paralysed, and his conjunctivæ became at first injected and then ulcerated, with ulcers of the cornea. During the whole time he suffered from his disease an excessive irritability with violent paroxysms of passion, often coming on without any cause, were his chief mental characteristics. Towards the end of his life a clouding of his faculties took place, he slept much, and immediately before death he was semi-comatose. Reflex action in his legs continued very acute to the last. He died in ten months after his admission, and about five years from the beginning of his disease.

At the *post-mortem* examination the following appearances were found :—

Head.—Calvarium hard and heavy, but not very thick. When it was removed a very curious appearance was presented. Over the surface of the dura mater there were a great many little cauliflower-like excrescences scattered irregularly, being most numerous near the middle line, and the largest in the locality of the Pacchionian bodies. The base of each was surrounded by a bulging of the dura mater, and where attached to this each was quite small, forming a short pedicle. They varied in size from a pea to a bean; they looked like little projections of brain that had been made to squirt out through small holes in the dura mater by slow steady pressure from within—little herniæ of the brain. Each had a very thin fibrous covering continuous with the

dura mater. In colour they resembled a mixture of grey and white substance: in consistence they seemed to be nearly that of ordinary brain convolution. Each had a clearly cut bed absorbed out of the bony skull-cap, only leaving a transparent plate of bone. There was a large one over the right orbital plate, the size of a bean, causing complete absorption of the bone, so that it projected into the fat behind the eye. On attempting to raise the dura mater, it was found that this could not be done without tearing the connection of these herniæ with the convolutions. At the narrowest part of the neck of each, as it passed through the dura mater, evidently through the gradual enlargement of a vascular opening, it consisted of both white and grey matter, so that when torn off there was a small white spot like a pin's head in the convolution from which it sprung. On section it was seen that this white substance passed through the grey matter of the convolution like a stalk, and was continuous with the ordinary white brain substance; and outside of the dura mater it extended into each hernia, swelling out and forming its centre, with a thin covering of grey substance. By gentle pressure from without a considerable part of some of the excrescences could be pressed back; the hernia, could as it were, be partially reduced, but this broke up to a greater extent what was evidently slightly softened brain substance already.

When the brain was lifted up a large tumour was found attached to the right side of the cerebellum and along part of the right crus cerebri, pressing on, and causing partial absorption of that part of the pons Varolii and cerebellum. It was firmly attached to the fibrous portion of the temporal bone, causing absorption of the bone, and entering into and disorganising the internal ear of that side. It pressed on the lower portion of the middle lobe of the cerebrum, causing complete ramollissement there, so that the fluid in the ventricle ran out at that part. The tumour was hard and fibrous in some parts, soft and cystic in others, grey in colour, and somewhat irregular in outline, being altogether about as large as a hen's egg.

The ventricles were much enlarged, and contained much fluid. On section there were spots of ramollissement over right orbit, at base of middle lobe of right side, and in corpus striatum of right side, the white substance being generally doughy. Optic nerves and tracts grey and fibrous.

Microscopic Examination.—On a microscopic examination of the brain substance in the fresh state, the covering of each excrescence was found to consist of fibrous tissue, being thinned dura mater. The inside consisted of masses of granules, and in some places there was a striated appearance, being the remains of white nerve fibres. The arteries were coated in most places with granular matter. On examination of the pedicles of the excrescences, the granular cells were not so numerous, and the white fibres were perfectly normal. At the surface of the brain the appearance was that of healthy white brain substance. Altogether the morbid appearances were more marked at the outside of each hernia. On examining sections of convolutions, hardened in chromic acid, and cut and prepared by Stirling's method, it was found that the blood-vessels were very much enlarged and tortuous, and surrounded by granular matter and a great number of round vacant spaces in each section. Probably these had contained some morbid product, such as masses of granular matter, which had fallen out, or been dissolved by the turpentine and spirit in the process of preparation. I could scarcely have believed, had I not seen this case, that convolutional brain tissue, grey or white, could have been pressed out through holes in the dura mater and yet have retained any normal structure at all.

Statistics of Paralytic Insanity.—In the nine years, 1874–82, we have had, out of our 3145 admissions to the Royal Asylum, Edinburgh, 91 cases diagnosed as paralytic insanity. That is nearly 3 per cent. Of those 91 cases, 17, or almost 19 per cent., recovered mentally. This was one of the results of statistical inquiry into special forms of insanity that surprised me. Had I been asked before, I should have said that

it was quite a rare thing for a case of paralytic insanity to recover. But this shows that when a gross lesion of the brain first occurs, it often sets up a convolutional storm of mania or melancholia, which is temporary and curable. The immediate mental effect is of the nature of a reflex irritation, with temporary vascular congestion, which subsides like any other maniacal or melancholic attack. Ten cases were discharged more or less improved, in addition to the seventeen recoveries. Forty-six of the patients have died up to this time, in thirty-six of whom *post-mortem* examinations were performed.

Pathology of Paralytic Insanity.—Looking at the pathology of paralytic insanity, as disclosed in the records of the pathological appearances found in those thirty-six cases, one sees that ordinary brain disintegrations ("white and yellow softenings") from embolism and thrombosis stand as the most frequent lesion. These "softenings" existed in 83 per cent. of the cases. Their most frequent original seat was in the basal ganglia, but in most of the cases the disintegration had extended into the white substance round those ganglia more or less. In only about 20 per cent. of the whole number was there manifest disintegration of the convolutions. In four of the patients the lesion was confined to the convolutions,—was, in fact, a true disease of the convolutions alone. These had been epileptiform. In five cases only were there adhesions of the pia mater to the convolutions, and in two of these the whole pathological appearances so resembled those of general paralysis that I think they had been instances of that disease, complicated by ordinary softenings in the basal ganglia. There was very marked atrophy, with or without softenings of the convolutions in twelve cases, or one-third of the whole number. Through atrophy, or adhesion of the pia mater, or disintegration, or the pressure of tumours, the convolutions were manifestly diseased in twenty-seven of the thirty-six cases, or 75 per cent. This gives so far a definite pathology to paralytic insanity, by showing that it is not merely through lesions of the basal ganglia and their reflex convolutional dis-

turbances that it occurs, but through appreciable disease of the convolutions themselves, in three-fourths of the patients that die. Microscopic examination shows that scavenger cells abound in the cortex in most cases near the local softenings, and degenerations and atrophies of the lymphatic structures are very common indeed.

The frequency of tumours or new growths was surprising. They were found in seven of the thirty-six cases. In most of them there was manifest secondary convolutional lesion, through pressure or irritation, in addition to the tumours. In one case a spiculum of bone projected into the pons from the base of the calvarium, setting up thickening and inflammatory action. The atrophy in two cases was of that kind that affected chiefly the white substance in the centre of one hemisphere, leaving the grey substance of the convolutions like a crust round a hollow space (like the case figured in Plate VII.). There were recent hæmorrhages in only three of the cases; and there were purulent deposits in one.

It may be concluded, therefore, that gross brain lesions, wherever situated, tend to cause mental disease in two ways —first, by reflex or other irritation, or excitation of morbid convolutional action; and, secondly, by actual destruction, primary or secondary, of convolutional structure.

LECTURE XI.

EPILEPTIC INSANITY.

Very important; epilepsy may coexist with perfect sanity, but it tends always to enfeeblement of mind—Effects of epilepsy on development of brain in childhood; stunting; enfeebling—the insanity in relation to the Fits occurs; 1. After; 2. Before; 3. Instead of (Masked Epilepsy); 4. Chronic Dementia from continued epilepsy; 5. Epilepsy ceases and mania takes its place; 6. Occurs in rare cases in the course of chronic insanity—Typical epileptic insanity; irritability; impulsiveness; want of inhibitory power; tendency to violence; hallucinations; homicidal impulses; perverted religious emotionalism—Prevalence of epilepsy and epileptic insanity in different parts of the country, and in the two sexes; 4 per cent. here; 20 per cent. in Cheshire; less common in women—Prognosis bad; tends to dementia—*Pathology: Treatment:* Precautions against violence; an asylum diet; the bromides; counter-irritation.

Whether we hold epilepsy to comprise every motor spasm, even the slightest, or restrict it to the periodic recurrence of general convulsions begun and accompanied by unconsciousness, it may exist without insanity. But, on the other hand, in a very considerable proportion of cases, epilepsy has as its accompaniment mental disturbances, amounting often to insanity. And a very important form of insanity it is. Long before Dr Skae classified mental diseases clinically, epileptic insanity was recognised and named. From the earliest times its mental accompaniments have increased the mystery and terror of epilepsy. When, added to the contortions and unconsciousness of that disease during a fit, there were afterwards developed strange hallucinations, terrible acts of impulsive violence, and striking religious delusions, we cannot wonder that a supernatural cause was almost universally believed in

of old. No demon could by any possibility produce more fearful effects by entering into a man than I have often seen result from epilepsy.

The first great fact to be kept in mind, in regard to epilepsy in its mental relations, is that the frequent recurrence of epileptic fits for many years tends in some degree to impair the mental faculties, to dim the reasoning power, to twist or take the fine edge off the feelings, emotions, and sensibilities, to affect the memory, to lessen the self-control, and to change the "character," even where there is no actual insanity. If a man only takes a few fits in his lifetime, and they are far between, there may be no mental accompaniment whatever except the unconsciousness at the time and the transient confusion after each fit. And, beyond a doubt, the occurrence of such rare fits is compatible with great mental power. Julius Cæsar, Mahomet, and Napoleon are said to have had such occasional attacks of epilepsy.

When I speak of epilepsy causing insanity and mental symptoms, you must clearly understand that the whole series of symptoms, bodily and mental, may in some cases be the combined result of a general disturbance of function or of disease in the brain, neither the convulsions being the primary disease, nor the mania, but both being equally effects of the same cause. It is usual for the epileptic insanity not to follow at once the first appearance of the fits. Most commonly years elapse before it comes on. No doubt the more severe and the more frequent the fits, the greater is the risk of insanity, but certain epileptics suffer merely a gradual mental clouding and diminution after years of epilepsy, while others have furious mania very soon after the first fits have appeared. It would seem as if certain cases of epilepsy from the beginning consisted essentially in their nature quite as much of a mental as of a motor instability and explosiveness. I do not agree with Hughlings Jackson that, in cases of *petit mal* and slight convulsions, the explosion, not finding vent in a motor form, is more apt to extend up into mental

centres. There are some few such cases, but in my experience only a few. The theory is fascinating, but there is danger in making too close an analogy between a mental disturbance and an ordinary motor convulsion, and in regarding them as virtually the same thing, the one being an "explosion" in a "mental centre" and the other in a motor centre. I admit that such a view is most instructive as a hypothesis and help in making definite one's ideas, and in some rare cases of epileptic insanity seems to fit the facts exactly, and explain the apparently substitutionary character of the convulsion and the psychosis. But in a very large number of cases of epileptic insanity the mental symptoms are not of the *sudden* explosive character at all, as we shall see, and they are by no means always attended with unconsciousness or false consciousness, loss of memory, and want of power of attention. The theory of explosion assumes that you have a morbid energy developed in such brains which when not inhibited will out in some form, just like gunpowder, which, if you obstruct the muzzle, will blow out the breach of your gun.

Relationship of Epilepsy to Mental Symptoms.—Epileptic insanity, and by this I mean all the morbid mental effects associated with the disease, occurs in relation to the fits in six chief ways:—(1) After them. This is on the whole the most common, and the mental symptoms then seen are essentially periodic and paroxysmal, like the motor convulsions. They follow usually within twenty-four hours of the fit or fits. If there have been a series of fits, they are much more apt to occur than after one fit only. (2) Before the fits. They usually show themselves a day or two, rarely three or four, before a fit is coming on. And in some such cases, when the fit occurs, the mental irritability, suspicions, impulsiveness, or confusion usually disappear at once, their place being taken by stupidity, or in some cases by normal mentalisation. This is undoubtedly a strange fact, but is abundantly seen. Our attendants in asylums can tell in this way when a fit is coming on in many of the epileptics under their care. The

fit, like a thunderstorm, seems to clear the air. (3) Mental disturbance may occur instead of the fits, taking their place, apparently coming on at the period when the fits might have been expected. This is rare, but very instructive. It is the *épilepsie larvée*, or masked epilepsy, of the French. (4) A slow, steadily progressing loss of memory and change of affection, a blunting of the finer feelings, and a permanent mental obscuration or twisting, those being often the very first symptoms present, growing more intense the longer the patient lives and takes the fits. This is, in fact, a dementia either from brain injury by the fits or from the natural advance through prolongation of the morbid brain state that caused the epilepsy. Most epileptics tend to become demented if they live long enough. The arrest of mental development, and the degeneration towards idiotic conditions seen in nearly all cases where epilepsy occurs early in life, come under this heading. (5) Some forms of chronic insanity take the place of the fits, which cease altogether. I have seen only four or five cases where this took place, and they all occurred at the termination of the reproductive period of life. (6) Epilepsy may begin in the course of chronic insanity of many years' duration, apparently through advance of disease from the mental into the motor centres of the brain. I do not mean a mere sporadic convulsion or series of convulsions, in the course of a case of recent or chronic insanity, such as I have described in that form of melancholia which I have called convulsive, or as in the case of prolonged folie circulaire, D. B., p. 229, or like those cases of alcoholic or syphilitic insanity in which convulsions play a part. I refer to those cases of chronic insanity, usually dements, who become epileptic, beginning to take periodic fits after being many years insane, and then going on taking them regularly. I have seen about a dozen such cases, and now have five such under my care.

It will be observed that all those relationships point to a close connection between the *locus in quo* of epilepsy in the

brain and the seat of mental disturbance. The fact that they are related to each other in such various ways is the strongest proof of the nearness of their pathological seat. The experimental demonstration of a motor function in the convolutions seems to be strongly confirmed by all the clinical facts of epileptic insanity.

Heredity.—Hereditarily, ordinary insanity and epilepsy are more closely allied than any other two of the neuroses. The son or daughter of an epileptic is just as likely to be weak-minded, drunken, or insane as to be epileptic; and certainly epilepsy occurs frequently in the children of families with a strongly insane heredity.

Mental Symptoms.—The actual mental symptoms caused by, or associated with, epileptic fits vary considerably, as we shall see from the cases that will be related; but there is a certain type of psychosis so common as to be almost characteristic. Two words express its most marked characteristics—irritability and impulsiveness. I suppose one may look on these as representing an abnormal state of nutrition and energising of the brain convolutions, and a dynamical instability, whereby there is a morbid energy evolved and a want of inhibition to control it. The epileptic psychosis may exist in every degree, from the merest excess of irritable temper up to the most dangerous homicidal impulses and acts. I have seen epileptic insanity take the form of a more acute maniacal condition than almost any other insanity. Before the days of the bromide of potassium, and its regular use in the cases of most epileptics in asylums, no patients were so troublesome or dangerous. There is no form of insanity that, outside asylums, is more frequently the cause of murders, except, perhaps, the alcoholic. Hence its medico-legal importance to medical men and jurists. It depends much on the strength and intelligence of the medical evidence whether an epileptic murderer is hanged or sent to a Criminal Lunatic Asylum. If a man has been subject to regular epileptic fits, and commits a murder in an impulsive or motiveless way,

then I think the presumption would be very strong that he was not fully responsible for his actions. No prejudice or want of knowledge on the part of judges or juries should prevent a medical man from giving clear evidence on this point. A murder by an epileptic should usually be looked on as being as much a symptom of his disease as larceny by a general paralytic. Certainly the *onus probandi* as to his responsibility should rest on the prosecution.

A certain *religious emotionalism* of a strong and usually perverted kind is often present in epileptics, as pointed out by Dr Howden. We had a lad (G. W.) in whose ante-bromide, and therefore natural, epileptic clinical history it was a sure prelude to a fit, or series of fits, that he took his Bible, read it continuously, and when spoken to would answer fiercely—"Don't trouble me, I'm a good man. I'm a servant of God." The day after, he would be walking up and down, striking any patient or any one else who ventured to speak to him, replying maniacally—"You're a d——d liar! Don't insult me!" if one remarked to him it was a fine day. That night he would have one or two fits, and would be stupid and much inclined to masturbation. Next day he would keep his bed, and after a day or two would get up and go about as usual. The bromide treatment, in doses of 20 grains three times a day, utterly destroyed the typical psychosis as well as diminished the number of fits for twelve years, he being nearly all the time a mild, industrious, slightly weak-minded young man, who did what he was told and only took a fit every six months instead of a series of them every month. But at the end of the twelve years the old irritability returned, and he died in the thirteenth year. Epileptics rarely live long lives.

As illustrating epileptic irritability not reaching the maniacal stage, look at those two women, G. X. and G. Y. The one, G. X., rages at her nurse, calls her a murderess, affirms that she has given her no food to-day—she has just had her dinner, eating half of it and throwing the remainder at the

nurse—and that she has tried to poison her often. Nothing you can say to her but will rouse anger. No remark, however mild, but will excite a storm of scolding. No soothing influence will mollify her in the least degree. She tries to imitate your voice. She is sarcastic, abusive, and threatening by turns, as I demonstrate the failure in this case of the psychological experiment of a soft answer being able to turn away wrath. By the way, that psychological aphorism is more applicable in dealing with the insane than almost any other class of human beings. It stands me in good stead many times every day; and if I could only practise it always myself, and get my attendants to practise it, we should save many rows, and avoid on many occasions the use of physical force. But I am bound to say it altogether fails sometimes, and notably in this patient and in other epileptics. But just try the opposite tack, and contradict her and tell her sharply that she is an unreasonable woman, who is talking nonsense and acting like a fool. How this aggravates all her symptoms! She shouts, and at once threatens personal violence. "Never contradict or attempt to reason with an epileptic when excited," is an axiom in asylums. Now, this woman had a fit two days ago, and by to-morrow her irritability will have passed off, and she will be a quiet, civil, and agreeable woman.

The next patient, G. Y., is in much the same general condition of morbid irritability. She sings a psalm tune in a *noli me tangere* tone of voice. When I ask her mildly what tune that is, she denounces me as a hypocrite and a scoundrel, says I am of the seed of the devil, and that she is one of God's people and of the seed of Israel. This delusion recurs whenever she has fits. She describes visions she has, when she sees Jesus Christ and the prophets. At times she has the hallucination that she is surrounded by flames, and sees eyes like fiery balls glaring at her. She is almost never amiable, is subject to morbid suspicions and aversions to certain people. Her social instincts have been almost uprooted by her disease.

In both those cases the bromide has been tried, and failed to do good. This has partly resulted from the fact that the trial was imperfect, for they both believed it was poison given to do them harm, resisting and refusing it, and partly because the epilepsy they are both subject to is nocturnal. This is never so subdued by the bromides as the fits taken by day, and the epileptic psychosis associated with nocturnal epilepsy is also less amenable to the good effects of the drug. Epileptic insanity is not nearly so common among women as men, whatever may be the case with uncomplicated epilepsy; and when it occurs it is less benefited by the bromides in most cases.[1]

Next, let us take a case of typical epilepsy and typical epileptic insanity in a man, a patient that illustrates a great many clinical facts of an instructive kind:—

H. A. was said to have been thrown from his palanquin in India at the age of 17, and to have alighted on the left side of his head. He did not suffer much at the time, and had no epileptic fits till seven years afterwards, when home on furlough. Yet on this slight *post hoc* the epilepsy was put down to the fall in India. Relatives will always assign some cause for such a disease. There have been neuroses and mental disease, but no epilepsy, in the family. The fits began in March one year, and were numerous and severe. They usually came on about every month, but sometimes every day or two. In September following he had a severe maniacal attack, for which he was sent to the Asylum. It was accompanied by unconsciousness, and a constant rotating motion from left to right, the eyes staring in a fixed, glassy way. His condition was, in fact, more a stupor with motor restlessness. This is not an uncommon kind of epileptic psychosis. This lasted for ten days, and he then got well. He had a pain in the left side of his head, especially before the fits; and his left arm in the fits, especially in the clonic spasm,

[1] For the exact statistics, see the author's paper on this subject in the *Journal of Mental Science* for October 1868.

twitched more than the right. It was thought that those things pointed to a depression of bone, or some such local irritation, at the part where he fell. The late Mr Syme trephined the bone at the spot, taking out a circle about the size of a halfpenny. A "very questionable alteration" in the bone was thought to be detected. "No alteration was detected on microscopic examination." In a week he had a maniacal attack, without having any fits, during which he was most violent—shouting, struggling, recognising no one. To prevent him injuring the wound he was kept in bed by a number of sheets and skeins of worsted. This lasted for a fortnight, when he got well again. For three months he kept well, and was discharged from the Asylum "relieved," having no fits for four months after the operation. He then became depressed in mind and emotional, weeping much. This, as a temporary phase of epileptic psychosis, is not uncommon. He then had several fits, which were followed within two days by an acute attack of mania, with frenzied violence. He was put in restraint in the sheets again, as his scalp was tender, and he threw himself against the walls of the room. As he got out of the unconscious maniacal state he was irritable, unreasonable, and complained of everything. Nothing or nobody could please him. This was the very opposite of his natural disposition, which was most considerate and gentlemanly. In four months after this he had a recurrence of the fits and a maniacal attack. He then took the fits occasionally during the next six months, without there being any mania. But he was liable to sudden short attacks of epileptic psychosis, during which he would suddenly strike out at those near him, or his expression of face would change and become furious, while he would stare at any one beside him, and shout fiercely—"What the devil do you mean, sir?" This state would occasionally come on of itself without any exciting cause, but would sometimes be set up by contradiction, or when he saw anything done that he disapproved of. I remember being one of a party of four playing whist, he

being one. We were playing quietly, not a word being said, when he suddenly let go his cards, stared at his partner with his eyes "rolling out of his head," and, with a damnatory exclamation, sprang at his throat over the table. He was seized, held gently on the sofa for a few minutes, came to himself, asked what had been up, and went on with the game. He remembered nothing about what had occurred. This was a true attack of "mental epilepsy." He then began to take the fits, about one every week, nearly always during the day. He was subject to various sensory neuroses, as most epileptics are, such as sensations of pins and needles in his limbs, a feeling as if there were twitchings in his head especially after going to bed and before going to sleep, numbness in his left thumb, and tic in his right eye and temple.

All sorts of treatment were tried for the disease—morphia by mouth and subcutaneously, sulphates of zinc and copper, severe purgation, counter-irritation, colchicum, and alkalies, but, while he seemed to be a little better for each drug, he soon became as bad as ever. Occasionally he would pass two months without a fit, except perhaps a few attacks of *petit mal*. In 1865 he was put on the bromide of potassium, in 10-grain doses three times a day. In a month he said he felt much better in health, had no nervousness, and little of the twitching feeling. His general health became better. For five months he took this, and had five fits in that time, only one of them being severe, and he had no maniacal excitement. The dose was then doubled, that is, he took 20 grains thrice a day. For one hundred days after that he had only two attacks of *petit mal*, then he had a slight fit. He kept so well in mind that, after a year of the bromide treatment, he left the Asylum on probation, being charged to go on with the medicine. He stayed at home for six months, and did well. Then he began to take the fits rather more frequently, taking about two or three in the month of a slighter character. He then came back to the Asylum voluntarily, not being maniacal. The fits almost always came on

just after waking, or during sleep about 5 A.M., thus changing their character from day to night fits. Bromide acne used to trouble him, and he would on that account stop the medicine, but he always had a fit within three days after this.

For the next two years he continued to take fits about every month or six weeks, but was never maniacal, and during the day he entered into the amusements of the Asylum, playing billiards and cricket, dancing, &c. Of one thing he never could be made to realise the importance, and that was the risk he ran in dangerous places on account of a fit suddenly coming on, in this being like most epileptics. He would constantly stand near the fire, or walk near steep places. When at a picnic at the Falls of the Clyde once, he went quite near one of them to look over. When warned of the risk, he coolly remarked that life would not be worth having if he were always thinking of the risks from a fit. It seemed to me the bromide treatment not only lessened the irritability of temper and the number of maniacal attacks, but that in this case it prevented the mental degeneration in feelings and manners that long-continued epilepsy is apt to cause.

In September 1872 he took a fit by day when standing with his back to an open fire, fell backwards, and burned himself most severely in the gluteal region, causing a sore of 9 inches in diameter. *For nine months after this, while the sore was discharging much pus, he had no fits, though taking no bromide.* This I have seen very frequently in epileptics. Then his fits began again, but were very infrequent. His lungs then began to be affected. In about a year the wound healed, and for the first time since the burn he had a mild maniacal attack. The lung disease gradually progressed, and he died in two years and a half after the burn. He had not a trace of mania, and very few fits, for the last nine months of his life, during which his lungs were very far gone.

On *post-mortem* examination, the dura mater was found

adherent to the lower surface of the circular hole made in trephining the skull-cap, and was adherent below to the arachnoid and pia mater. There were no spiculæ nor thickenings of the bone towards the brain anywhere. On the left side of the spot operated on the pia mater was adherent to a brain convolution. The arachnoid was slightly milky, and there was considerable vascularity in the brain substance, with some little perivascular atrophy. Otherwise the brain was normal, and the medulla was not congested, though the vessels were enlarged.

The condition of the brain did not confirm the idea of an injury from the original fall, and threw no light on the cause of the epilepsy.

Variety of Symptoms.—In this one case you see there existed at different times, and under different circumstances, epileptic irritability; epileptic mania with and without consciousness, the latter at times being wildly delirious and in the highest degree dangerous to the patient and those near him; epileptic impulsiveness of action and violence; epileptic stupor; epileptic depression; epileptic false consciousness; epileptic automatism; the characteristic epileptic want of realisation of the dangers to which the liability to take the fits any moment exposes the patients; epileptic sensory neuroses; the temporary improvements that counter-irritation and new modes of treatment are apt to produce in epilepsy; the decided relief of many of the symptoms by the use of the bromide of potassium, which yet did not cure, and acted best at first; the cessation of the fits and of the tendency to maniacal outbursts when serious bodily diseases came on; lastly, the present unsatisfactory pathology of the disease was also illustrated.

Epileptic Insanity and Insane Impulses.—Epileptic insanity should be studied along with the symptomatological class of impulsive insanity, with which it is very nearly allied in symptoms and heredity. I have already alluded to the case of E. T. (p. 342), so many of whose children died of convul-

sions, and whose brother is an epileptic patient in the Asylum. It is also closely allied to somnambulism. Epileptic insanity proper is accompanied by, and complicated with, some of the most extraordinary and irregular mental phenomena. I have a man, H. B., who at times has hallucinations of smell, fancying the air is polluted round him by putrid meat; another, H. C., who affirms that we cause itching and formication of his skin, he scratching himself violently after fits sometimes. I have known a "fit of itching" come on in him instead of an epileptic fit. We have several epileptics who receive messages from the Deity after fits. I had a woman, H. D., who, before and after a fit, and while she is taking it, for she does not lose her consciousness, imagines she has two heads, and that one is under her own control and the other under the control of an enemy. In her case the fits are unilateral at first. I have a man, H. E., in whom an aphasic attack comes on and lasts for periods from one hour to three days, instead of epilepsy, he being meanwhile rational, cheerful, and industrious, and writing on paper anything he has to say or answers to questions. I had at the Carlisle Asylum an epileptic idiot whose muscles seemed to be in constant action when he was awake. He was never quiet, and most of his actions were purposive for mischief. He was the pest of the ward where he lived. He would kick, bite, scratch, and annoy his fellow-patients on all occasions, but especially when they were asleep or quiet. No imp of Satan could have been more ingeniously tormenting.

Suicidal impulses are not common in epileptic insanity. When present, they usually result from hallucinations of hearing voices telling the patient to commit the act. I had lately a well-marked case of this sort, H. F., a man aged 39 when he was sent to the Asylum, who had been subject to epilepsy for several years, and had often been maniacal. During one of his attacks he had bitten off his father's nose, under the delusion that he was calling him bad names. When well he was attached to him. He had exposed himself to some of the

strongest causes of brain disease, for he had drunk hard—epileptics very often do, and alcohol always makes them irritable or maniacal—had contracted syphilis, and exceeded with women, and, when a soldier in India, had been exposed to the sun and had sunstroke. When admitted he was very violent and homicidal. He heard voices, as if it were his fellow-patients calling him foul and offensive names, such as "thief," "scoundrel," "beggar," &c. He would often assault savagely men who were not speaking to him at all. He took the fits, which were of the ordinary character, about every fortnight. The hallucinations and homicidal tendency were usually worst before the fits, but he was always irritable, sullen, and unsocial, and had a very strong and uncontrollable craving for drink and tobacco. He was put on the bromide of potassium in 25-grain doses three times a day. At first it seemed to have no effect, but after about six months he became mentally changed for the better. He got chatty, amiable, and industrious. He had occasional outbursts of sullenness and irritability, but seldom was violent. He had the hallucinations of hearing very often, but he said he disregarded them, and latterly said he had got himself to believe by reasoning that they were "voices" only, and not the words of actual men. If he took liquor he was always worse in temper and conduct, and was apt to have morbid suspicions and hallucinations badly afterwards. At times he would request to be put into his bedroom alone, to be quiet and out of the way of the temptation of assaulting his fellow-patients. After being in the Asylum two years he had a short paroxysm of mania, and broke open his room shutter and got out, but was recaptured before he went away. He afterwards said that the voices had been telling him to go and throw himself over the Dean Bridge, which is the chief temptation to dramatic suicide in Edinburgh. He improved much after that, and took no epileptic fits on one occasion for eighteen months, never needed seclusion, got the parole of the grounds, and went into Edinburgh to see his relations occasionally. No

suicidal attempt was ever thought of by me then. The fits had become slightly more frequent, however, in spite of the bromide. When out one day he went into town for a walk with two fellow-patients, was perfectly cheerful, and even jovial; met his brother, and chatted pleasantly with him, saying he would be out again "next Saturday." On his way home he said to his companions that he was going to a urinal, went down a bye street, and then as straight as he could go, he made for the Dean Bridge and threw himself over, killing himself instantly. This was two years after the time he said the voices told him to do so; and for twelve months before he might have gone and done so any day, so far as any restraint in the Asylum was concerned. On *post-mortem* examination, I found the pia mater over the whole vertex of the brain strongly adherent to the convolutions, and the ventricles granular, just like a typical case of general paralysis. In fact, I never saw any case of that disease with those pathological appearances much more marked, and no one could have told from the naked-eye appearances that it was not a case of general paralysis.

Homicidal Tendencies.—The homicidal acts of epileptics are done under the most various circumstances, are widely different in character in different cases, and even in the same case at different times, sometimes are done reasoningly from conscious insane motives, sometimes apparently, but not really reasoningly, because without consciousness or memory. An epileptic may scheme to do an act of insane violence and try to conceal it carefully afterwards. They are very apt to take unfounded dislikes, especially to their relations and those near them. The conscious anger will pass into the epileptic unconscious mania in a moment sometimes. One of the most extraordinary things I ever knew was this:—A young epileptic, H. G., who was very friendly with me when he was well, used to dislike me very much when excited after fits. On one occasion the attendant found him and another patient contriving to make up a weapon, with which to assault me or

the chief attendant, out of a stocking which the epileptic had taken off, put a stone in the toe of it, tied a string about this, and had then slipped it up his sleeve till he should have a chance of using it. When he got out of the epileptic mental condition he was astonished when told about this, and said he had no recollection of it whatever, which I believed to be true. The combination with another patient, and the purposive combined preparation of a lethal weapon, all in a state of epileptic altered consciousness, I could not have believed possible had I not seen them in that patient. Supposing this man had not been in the Asylum and had combined with another in preparing a weapon, waiting for an opportunity, and had committed murder; and then supposing a doctor had gone into the witness-box and given evidence that the murderer was quite irresponsible on account of his being in a state of epileptic insanity, and quite unconscious of his acts at the time, with what lofty scorn would the judge have put aside such evidence as being inherently incredible! With what dogmatic assertion the newspapers would point to such an example of a medical man trying to defeat justice and screen a criminal! What lively ridicule the journals would have poured upon evidence so "opposed to common sense and to law"! And all this because a fact of nature and of disease had been brought out!

Pathology.—As regards the pathology of epileptic insanity, it is, like the pathology of epilepsy, as yet very obscure. I have met with innumerable brain lesions of almost every kind in different cases, and, on the other hand, I have most carefully examined the brains of many epileptic insane persons, and have found no naked-eye lesion or abnormality. I have found the following amongst other lesions, viz., spicula of bone from the skull-cap and membranes pressing into the convolutions, apoplexies, destructive lesions of the brain of all kinds and in all places, embolisms, fatty and otherwise, adhesions of the pia mater to the convolutions, the marks of traumatic injuries of all kinds and in all places of the brain, unequal hemispheres, and congestions of all sorts and in all

places. I have failed to confirm Shrœder van der Kolk's observations as to the medulla and pons being always congested or diseased in epileptics. The general result of my pathological observations is, that any source of irritation in a brain *of a certain unstable quality* may cause epilepsy, but that an irritation to the motor area of the convolutions is far more apt to cause it than one anywhere else. The co-ordination of the convulsions, and the breathing difficulties of the actual fit, may arise in the medulla, but the real origin of the convulsions is usually higher up in the brain. To have epilepsy we must have an inherent motor instability in the convolutions, just as we must have essential mental instability in the convolutions in order to have insanity in most cases. The epilepsy is an *occasional* dynamical disturbance, that may be the result of a *constant* pathological lesion, or of an inherently morbid brain constitution. It is a remarkable fact in epilepsy that one hemisphere of the brain is in nearly all cases found considerably heavier than the other, and that in by far the majority of the cases of infantile paralysis or unilateral development, where one hemisphere of the brain is larger and more perfect than the other, such patients are subject to epileptic fits.

Microscopic Appearances.—Dr Bevan Lewis dissents from the view I have stated above, that we must look for the pathology to a morbid quality of energising in the motor cortex. He says that he has demonstrated that in epileptics he finds that the small irregularly shaped nerve-cells occupying the position of the second layer of the cortex, exhibit a degenerative change, which is so far peculiar that the nucleus of the cell is the earliest portion affected, the cell protoplasm being apparently secondarily involved. The centre of the nucleus is occupied by an extremely bright, highly refractile spherical body, obviously of a fatty nature. This enlarges until we have vacuolation of the nucleus to a very marked, and Dr Lewis implies, "universal" extent. The cells in the other layers do not "escape a similar implication"; but it

may only "be detected here and there in the small and large pyramidal cells." He draws attention to "the persistence shown by the nerve-cell despite the degenerative change in its nucleus, and it is only later on, in the stage of dissolution, that the cell protoplasm betrays evidence of degeneration." He believes that the layer of cells is of the "sensory type of nerve element, and that an organic connection exists between them and the large motor elements distributed at a lower level." He believes that these sensory cells "have an inhibitory control over the subjacent elements, and that lacking such control, their discharge will be disturbed from its normal condition," hence the epileptic fits. He believes that morbid changes in the cell nucleus "are constant accompaniments of cerebral disturbances characterised by loss of inhibitory control." He thinks, also, that through heredity, there exist in the cortex of epileptics "inflated spheroidal" cells, which show a reversion and "a more primitive type" of brain such as we find in the ape. Lewis does not confine the vacuolated cells to epileptics, however, but says they occur in other diseases, and especially alcoholic brain disease, but never to so marked a degree, and limited to such special cortical areas as in epileptic insanity.

Other observers, working by his methods, have not been able to confirm Lewis' observations on this most important point. He does not say whether the cases he examined and in which he found those vacuolated layers of cells were chronic or recent epileptics, or both. Drs Middlemass and W. F. Robertson have, in the laboratory of the Royal Edinburgh Asylum, carefully examined the brain by Lewis' method in many cases of epilepsy, and have not been able to make out in every case the vacuolation and nuclear degeneration with protoplasmic soundness as described by him. In one case, a developmental epileptic, on the contrary they found the nuclei of the cells in the second and third layers intact, while the cell protoplasm had undergone most marked changes.[1] (Plate

[1] *The Neuroses of Development*, by the author, p. 104.

IX. figs. 2 and 3.) On the other hand, they have found a nuclear vacuolation in many other chronic varieties of insanity. Of four epileptics whose brains Dr Middlemass carefully examined, the motor cortex was almost normal in two, the cortex in frontal lobes containing a few cells slightly granular in second layer, but in one of those some of the large cells in the medulla were markedly vacuolated in their nuclei. In the third case, a very advanced one, in whom the speech was almost lost, there was very marked fatty degeneration of second and third layers in the cell protoplasm, which was also much atrophied in many cells, while the nuclei seemed quite normal all over. In the fourth case there was universal vacuolation of all the cells of every layer of the cortex. It was almost impossible to find a normal cell. (Plate IX. fig. 1.)

Epilepsy a Developmental Neurosis.—By far the majority of cases of true epilepsy first arise during the growth period from birth up to 14, or in the developmental period (from 13 to 25) of life. Gowers found that of his 1450 cases 340 or 23 per cent. arose before the age of 7; other 28 per cent. arose from 7 to 13; then 444 cases or 31 per cent. arose from 13 to 20; and 195 or 13 per cent. of them from 20 to 25. There are, therefore, two great epilepto-genetic periods, the first during the period of fastest brain growth from birth to 7, and the next during the last period of slow growth but rapid development of new and important functions, the period of puberty and early reproduction, from 13 to 18. It is a strongly hereditary disease, like all the other neuroses of development.

Treatment.—As to the general treatment of epileptic insanity, it is that of epilepsy with that of mania superadded; and with special precautions to combat the special dangers I have described. Give the bromides regularly and steadily as you give food to your epileptics. Find out the dose for each case that will saturate but will not bromise, which will be from 40 to 70 grains a day in different cases. Half bromide of potassium and half of sodium, with one or two minims of liquor

arsenicalis to each dose, makes a capital combination. In some cases a little iron added will do good. It can be given for years. I have known the bromide of potassium continued now for eighteen years in a case with immense benefit and no harm all that time. Dr Macphail found that in epileptics "the quality of the blood improves during treatment with bromide of potassium, and the prolonged use of the drug exercises no deteriorating influence in decreasing the percentages of hæmoglobin and of hæmocytes."[1] Some few cases will not be benefited at all, but four-fifths will be so more or less, and one-half will be benefited very much, while one-fourth will be so much benefited as to be practically cured, so long as they are kept under treatment. Its use will very often save epileptics being sent to asylums. Any physician to an asylum who does not keep most of his epileptic patients continuously under the influence of the bromides deliberately disregards one of the best-proved of therapeutic facts, for I have proved by experiment that he can reduce the fits to one-sixth, taking all the epileptics in an asylum together, and practically cure some cases, while most are improved mentally.[2] Any physician out of an asylum who has an epileptic to treat, and sends him into an asylum, except for acute dangerous symptoms, without trying the effect of the bromides, does not, I think, give his patient the best chance known to science. Many patients will at times become bromised, but the white tongue, mental hebetude, and slow muscular movements of this condition can be easily seen in time before much brain harm is done. Intermittent bromide treatment is of little or no use. It must be continuous to do much good. Why the bromide does good to epileptics is as yet not ascertained in an absolutely definite scientific way; but my belief, founded on a very extensive experience of its use, is that its therapeutic effects are closely connected with its physiological actions of —(1) diminishing the irritability of nervous tissue; (2) lessen-

[1] *Journal of Mental Science*, January 1885.

[2] *Ibid.*, October 1868.

ing the blood-pressure in the capillaries; (3) diminishing the sexual desire and the reproductive power; (4) producing a slowness in the mental operations allied to the phlegmatic temperament. In addition to the bromide treatment, dietetic regulation, not too much animal food, the avoidance of surfeits, plenty but not too much exercise, life in the fresh air, no excitement that can be avoided, and no alcohol, are all useful. I have several epileptics who will almost certainly take fits or become irritable if they either go to a dance or get two glasses of whisky. Blisterings and setons do good in some cases, while ergot and conium, especially if combined with chloral, sulphonal, and the bromides, will control outbursts of excitement. Dr Lewis Bruce uses here a dose of croton oil in almost every case where an attack of epileptic mania is showing itself, and I must say the effect seems wonderfully good.

When epileptics take many fits in succession the brain functions are apt to get more and more retarded, till the patient becomes comatose, the breathing stertorous, and the heart's action impeded from asphyxia. This is the *Status Epilepticus*, for which chloral is strongly recommended by Lewis. Dr Wallis recommends bleeding from the arm for this state when the patient's life seems in immediate danger.

The moral treatment must be soothing but firm, with no arguing, sharpness, imperiousness, nor useless verbal contradiction. There is a procedure in the management of cases of epilepsy subject to maniacal attacks that I look on as of the greatest importance as tending to prevent attacks of mania coming on. It is founded on the natural history of the disease. After an epileptic fit of the graver kind, a patient is always necessarily unconscious at first, then stupid and confused, and then sleepy, and if he is favourably situated he goes off into a very sound sleep. This seems to me nature's mode of restoring the disturbed cerebral circulation and recuperating the exhausted organ. Even after the sleep most epileptics feel tired for a time. Now, by carefully giving an epileptic the chance of sleeping after his fits, by putting him

on a sofa and darkening the room, we aid nature in her efforts to get over these effects. When the patient will not sleep, but shows signs of being restless and excitable, give him 20 or 30 grains of chloral, with a drachm of the bromide, and put him to bed in a dark room. The chances are he will sleep soundly and long, and will wake up all right. I have seen this plan succeed in apparently averting outbursts of epileptic mania many times.

As regards the results of treatment, they are in one way unsatisfactory, from the risk of relapse, and in another way satisfactory, because the patients may go home from asylums and earn their livelihood, and enjoy their liberty for long periods, often for life, if they will persevere in suitable treatment. Our results in the Morningside Asylum for the ten years 1873–82 have been, that out of 128 cases admitted, 31, or 24 per cent., have been discharged recovered of their epileptic insanity, and with the epilepsy itself greatly modified. Many of these have been able to remain at home. And it must be remembered that the cases sent to asylums are the worst cases of the disease. The milder cases, with infrequent attacks, are often treated at home very satisfactorily.

Epileptic Colonies.—The latest idea about the treatment of epileptics is to provide for them on farms with suitable buildings, where their food and lives generally are regulated. This system of "epileptic colonies" is stated to have been very successful in Germany, and is being tried in this country.

Local Prevalence. — Epileptic insanity prevails very differently in different parts of this country. In the southern agricultural counties of England, where wages are low, life is stagnant, food is not too abundant, and beer is almost universally used as a part of the dietary, epileptic insanity is unusually common—standing over 11 per cent. of all the admissions, and in some of them forming about one-fourth of all the inmates in the county asylums of those districts. This includes epileptic idiocy and imbecility, as well as the cases where the epilepsy arose later in life. In such

parts of the country the former kind of epileptic psychasis prevails much more than the latter. In the better-off mining and manufacturing counties, such as Durham, Glamorgan, Stafford, &c., and in some counties of mixed population such as Sussex, the proportion of epileptic insanity in the admissions is only about 5 per cent. Clinically, epileptic insanity is more acute and typical in those districts. In the large cities of England it holds an intermediate place, forming about 8 per cent. of the admissions to the asylums of those cities. In Scotland it prevails to a less extent than in England. In the admissions to the Royal Edinburgh Asylum, whose pauper patients are drawn entirely from a city population, only 4 per cent. have laboured under epileptic insanity during the past nine years, and only 7 per cent. of our present inmates are of this class. It is a curious fact that in our department for the richer classes, to which about 800 cases have been admitted in the past nineteen years, only one epileptic has been sent. In other parts of Scotland it is still more infrequent.

(The following is the general summary and conclusions of my experiments made in 1867 to determine the precise effects of the bromide of potassium in epilepsy and epileptic insanity.)

Twenty-nine cases of epilepsy of old standing, all having the same diet, and subject to the same conditions, were subjected to systematic treatment by bromide of potassium, after their normal condition as to fits, weight, temperature, general health, and mental state had been ascertained and noted. I gave them gradually increasing doses of the medicine from 5 grains up to 50 grains three times a day, and the treatment was continued for thirty-eight weeks, every essential particular in regard to the disease and their bodily and mental condition being noted every week during that time.

The total number of fits taken by the patients fell gradually under the use of the medicine to one-sixth of their average number without medicine.

The fits taken during the day were lessened to about one-twelfth, and those taken during the night to about one-third of the previous number.

The reduction in the fits was not uniform in all the cases. In one case it amounted to their abolition, in one-half of them to less than half, and in five cases—one-sixth—there was no reduction at all.

In one-fourth of the cases the fits were much less severe, in some being less severe while as frequent as before.

In one-fourth of the cases the patient's mental state was very greatly improved. Nervous and mental irritability and tendency to sudden violence were wonderfully diminished in those cases, and they were the worst of the patients in those respects.

Attacks of epileptic mania were diminished. In some cases the mental state was improved, while the fits remained as frequent as ever.

The majority of the patients gained considerably in weight while the doses were under 35 grains three times a day. Their aggregate weight was greater at the end of the thirty-eight weeks than it had been to begin with, though it began to fall after 35-grain doses had been reached.

The patients' average temperature fell somewhat until they got to 50-grain doses thrice a day.

The pulse gradually fell about seven beats up to 40-grain doses. After that it rose, but not up to its usual standard without medicine.

None of the patients suffered in their general health except five. All the others were benefited in some way.

The ill effects produced by the medicine in those five cases were torpor of mind and body, drowsiness, increase of temperature, loss of weight, loss of appetite, and in three of them slight double pneumonia.

The cases most benefited by the drug were very various as to the causes, number, and character of the fits, age, and in every other respect. On the whole, the cases who took most fits benefited most.

The cases in whom the medicine had ill effects had all taken fits from childhood, were all very demented in mind, and took more than one fit per week, but seemed to have nothing else in common.

The diminution of the fits and all the other good effects of the medicine reached their maximum in adults at 30-grain doses three times a day, while ill effects were manifested when 35-grain doses three times a day were reached.

There seemed to be no seriously ill effects produced in twenty of the cases by 50-grain doses of the medicine thrice a day continued for ten weeks.

When the medicine was entirely discontinued for a month in all the cases, the average number of fits increased in five of the cases benefited to or beyond their original number, in thirteen cases they remained considerably less.

The average number during that time was a little more than one-half the number of fits taken before the medicine was given, and the greatest number of fits occurred in the second week after the medicine was discontinued.

TRAUMATIC INSANITY.

Definition—Sunstroke—Symptoms—Motor symptoms, two kinds—Case of Traumatic Insanity, cured by Trephining—Traumatism acting as exciting cause of ordinary insanity—Prevalence.

A few cases of mental disease are caused by blows on the head, falls, and other traumatic injuries to the brain. Sunstroke also causes insanity, and the general mental symptoms of traumatism and sunstroke are apt to be alike. No doubt sunstroke gets the credit of far more insanity than it produces. Few Britons become insane in hot climates in whom that cause is not assigned. My experience is that traumatic insanity is to be found in two forms. The first form is the more characteristic type of the disease. It is accompanied by motor symptoms, in the shape of speech difficulties, slight hemiplegia, general muscular weakness, or convulsions. Usually in such cases there are, in addition, sensory symptoms, such as cephalalgia, vertigo, hallucinations, a feeling of confusion and incapacity for exertion of any kind, mental or bodily. The mental symptoms are usually a form of melancholia at first, tending in time towards an irritable and sometimes impulsive and dangerous dementia or delusional insanity. In my experience such cases are all absolutely intolerant of alcoholic stimulants, a very little of which will always make them maniacal, and often very dangerous and even homicidal. Many of them have a craving for stimulants, too, which they indulge, and which aggravates all their symptoms. It is surprising what a number of the traumatic cases are complicated with alcohol, in having been addicted to drink before these accidents, or taking to it after. Over one-half of my cases were so complicated. In either case, whether a drunkard falls and injures his brain and becomes insane, or whether a man takes to drink and becomes insane after an injury, the alcohol aggravates the mental symptoms, and

tends more strongly towards incurability than mere uncomplicated traumatism.

Motor Symptoms.—A few cases become ordinary epileptics. I have two epileptics in the Royal Asylum now who have large depressed fractures, and I have seen several more on the *post-mortem* table. In one there had been a fracture above the ear, where the bone, membranes, and brain all adhered by an old inflammation. I have seen three patients now, in whom the motor symptoms were so exactly those of general paralysis that I diagnosed them as such, but they turned out to be non-progressive, though not curable paralytic cases; and now, after over ten years, they are alive, and no worse than at first. One man, H. H., fell off a ladder, and fractured the base of his skull, was unconscious for long, and seemed afterwards to become a true general paralytic from this cause, but his symptoms did not progress. Another, H. I., a drunkard, received an injury to his head, was unconscious, and seemed to become mentally and bodily a typical general paralytic, but the motor symptoms never progressed. As I mentioned, traumatism is one of the rare causes of true general paralysis. I had one such case that was caused by a railway collision, but then the man, after the accident, attempted to study and enter a profession with a weakened brain and an impaired memory. Within three years he became a general paralytic, and died of the disease.

Usually the motor symptoms of traumatic insanity are non-progressive, or very slowly so. But they do not always manifest themselves at once after the injury. I had one patient, H. L., who was not made unconscious at all by the blow of a piece of wood falling on his head, but who gradually in three months got weaker on one side, as well as being muscularly weak all over, and also mentally impaired in memory, energy, and volitional power. He was also very irritable.

Certain very interesting cases have been recorded of insanity directly following fractures of the skull, with consequent pressure on the brain, which were cured by trephining or raising

the depressed bone. One of the most striking of these was published by Dr Charles H. Skae.[1] It was that of a miner who received a depressed fracture of the skull about three inches above the left extremity of the left eyelid, was unconscious for four days afterwards, then went to work, but within a fortnight exhibited a change of disposition and habit. Instead of being a sociable, merry, good-natured man, fond of his wife and children, he became at first irritable, moody, unsocial, and suspicious, then excited and dangerous, and then acutely maniacal. He was sent to the Ayr Asylum, and two months after admission, during which time he had not improved, an operation was performed by Dr Clarke Wilson, by which the depressed portion of bone was removed. A gradual improvement in mind took place week by week after this, until in a short time he was as sociable, lively, and cheerful as ever, and has continued so ever since.

Such cases are very suggestive of thought and inquiry as to the possible reflex and direct irritations that may be the causes of mental disease in many cases, and they clearly show that the general dynamical brain disturbance that we call insanity may sometimes originate in special points of local brain irritation.

The condition of the urine as to sugar and albumen should be carefully tested in all traumatic cases. Where sugar exists there is room for grave suspicion of mischief to the pons near the floor of the fourth ventricle, though this can scarcely be diagnosed with certainty in this way.

Some cases of idiocy result from injury to the brain by the forceps during delivery, and I have two now in the Royal Asylum resulting from falls on the head in early childhood.

The other and less distinct class of traumatic cases are those in whom an injury to the brain acts as an exciting cause of an ordinary attack of insanity in a person predisposed to the disease—in fact where traumatism acts like a moral shock,

[1] *Journal of Mental Science*, vol. xix. p. 552.

As the result of a bout of drinking or some such disturbing cause of brain action after traumatism, I have seen attacks of mania and melancholia in patients, from which they recovered perfectly; and, on the other hand, I have now under my care several cases of ordinary dementia, and one of chronic mania, and one of delusional insanity, all incurable, and originating in traumatism, but without any motor or sensory signs, and without progression of symptoms. I once saw a young man, H. M., of 19, who had an attack of ordinary acute mania just after being in a railway accident, and presumably caused by it, but by which he had not been made unconscious, or even stunned.

I have now a Traumatic case of suicidal melancholia, H. M. A., *æt.* 46, *resulting directly from an injury to his head through a piece of stone falling on it from a height of* 10 *feet, and then his falling* 20 *feet on the back of his head off the scaffold on which he was working, cutting the skin over the occiput, but neither injury causing prolonged unconsciousness.* This occurred three months ago, and ever since he has been able to do no work, has suffered from a dull feeling in his head and much pain in his back. His mental condition became gradually depressed. His attention was concentrated on his ailments, until he was quite melancholic. He became suicidal, fancied he passed only blood from his bowels, which was a delusion, and that his food did him no good, he being fairly nourished. There were no motor signs, and his temperature was normal, the reflexes being also normal, but he did not sleep. He gradually improved under treatment, until he became well in mind and body and able for his work. In the case of insanity coming on after railway accidents, or of mental symptoms short of "technical insanity" appearing or being simulated, we need to be very careful indeed in our conclusions as to causation. Especially if the mental symptoms are chiefly subjective, we must remember there is a motive to exaggerate them till the damages are paid by the company.

Prevalence of Traumatic Insanity.—We have had twelve

cases of traumatic insanity and the insanity of sunstroke sent to the Royal Edinburgh Asylum in the past nine years, which is only one-third per cent. of the admissions. Accidents to the head do not seem to loom largely therefore in the production of the insanity of the world.

LECTURE XII.

SYPHILITIC INSANITY.

Syphilis of brain not common ; often no syphilitic affections elsewhere, and few secondary symptoms ; often lies long dormant ; effect of hereditary predisposition to the neuroses in determining the occurrence of brain syphilis ; no syphilis of neurine but of fibrous tissues, neuroglia, and blood-vessels, &c.—Syphilitic insanity : four chief forms—1. Short maniacal attack during secondary stage. 2. The Delusional. 3. That dependent on arteritis in brain ; change of character ; irritability ; immorality ; speech difficulties ; dementia ; paralysis ; convulsions ; neuro-retinitis. 4. Syphilomatous mass growing in convolutions causing acute mania ; convulsions ; intense cephalalgia ; fever ; speedy death. Syphilitic deposits and inflammations in membranes, bones, &c., affecting convolutions secondarily ; symptoms various as the *locus in quo* ; partial paralysis ; *Mono*-spasms ; neuroses of sensibility ; neuro-retinitis ; speech troubles ; mania ; gradual dementia — *Prognosis :* In 1st form good ; 2nd, bad ; 3rd, depends on stage ; 4th, bad, but may be good if treatment early—*Treatment :* that of secondary and tertiary syphilis ; immense value of the iodide of potassium in large doses long continued—Differential diagnosis from general paralysis and ordinary epilepsy.

The mental as well as the bodily symptoms of brain syphilis have attracted more attention on the continent than in this country, though of late years a greater medical interest has been awakened here in regard to this subject by the writings of Reade, Buzzard, Broadhurst, and Dowse, but above all by those of Hutchinson and Hughlings Jackson. It is a large subject, because the functions affected are numerous ; an obscure subject, because the effects of the disease are often very slight and slow in development, and are multifarious in kind ; and is an interesting subject to the alienist, because it

is a disease in which the mental and bodily symptoms can after death be often directly connected with the pathological lesions present, and because in some cases the resources of therapeutics are most powerful and direct in curing the disease. In regard to the frequency of syphilitic affections, there is the most extraordinary difference of experience among different authors. Dowse makes the astounding statement that, of 10,000 patients under his treatment at the Central London Sick Asylum, three-fourths were the subjects of acquired or hereditary syphilis. That statement is enough to make one shudder. Its import, if a fact, to the mental and bodily future of London is appalling. Whatever may be the frequency of ordinary syphilitic affections, all authors agree that brain syphilis is rare, absolutely and relatively. Dr Wilks first pointed out "that when the primary and secondary manifestations of syphilis are least marked, the viscera and nervous system are affected in an inverse ratio"; that is, we find that in a large number of cases of brain syphilis there had been few primary or secondary symptoms, and no trace of the effects of the disease in the viscera. My own observation confirms that of others, that the syphilis which ultimately attacks the brain or its membranes has often lain for many years entirely latent, or apparently so, before it produced any symptoms at all. I think there is no doubt that a hereditary predisposition towards the neuroses largely determines the effects of the poison towards the brain. In addition, previous disease, alcoholic or venereal excesses, over-study, mental anxiety or worry, and even fright, may all act as determining causes of brain syphilis. Lancereaux states that the learned professions are especially liable to it.

Looking at the matter from a purely pathological point of view, "syphilis of the nervous system," though a term often used, is strictly speaking a misnomer, for Hughlings Jackson has shown that the poison never really attacks the nerve tissue proper at all, but only its neuroglia, fibrous tissue, blood-vessels, lymphatics, membranes, or bony coverings, involving the nerve tissue and its functions secondarily, by pressure, so

causing irritation, inflammation, and ramollissement, or by starvation from deficient blood-supply, and so causing degeneration and atrophy.

Brain syphilis with mental symptoms is in this unique position, that in the most characteristic cases its pathology is much more definite than its symptoms. The pathological changes may involve any and every part of the brain, and in any and every degree. The symptoms therefore, mental and bodily, depend on the position and on the intensity of the morbid processes. We may have the most acute and delirious mania caused by a rapidly growing destructive syphiloma in the convolutions, or we may have a mental enfeeblement so slowly progressing that it takes twenty years to run its course, caused by an obstructive arteritis gradually closing up the lumen of a few of the cerebral blood-vessels.

Four Forms.—My own experience would lead me to classify syphilitic insanity into four chief forms; and here I am conscious of the disadvantage I am under in having chiefly to do with the mental symptoms of brain syphilis, instead of having to treat of the whole subject with its whole bodily and mental symptoms. The brain syphilis that has bodily symptoms only I see little of, though its pathology and treatment may be precisely the same as the mental cases, the only difference being the *locus in quo*. The mere sketch I am able to give here of the mental symptoms will by no means exhaust the great variety of psychological phenomena met with in this disease.

The first form may be called secondary syphilitic insanity. It occurs during the second stage of the disease, is coincident with the eruption, is curable and rare. Dr Cadell[1] has described a typical case. A gentleman contracted an infecting chancre in January. A squamous syphilide appeared in April, and, along with it, marked mental excitement and an extreme amount of motor restlessness, this maniacal state reaching its height in August and September, and then almost

[1] *Journal of Mental Science*, vol. xx. p. 564.

amounting to delirium. "The patient took no rest in bed, was in the habit of riding and driving about recklessly during the night." This maniacal excitement gradually diminished, until in December the patient appeared to be in his normal mental state, this being coincident with the gradual disappearance of the syphilide. In the following April, an attack of mild suicidal melancholia with "paralysis of energy" came on, and lasted for over a year, this being coincident with the falling out of the hair of the head, eyebrows, and beard. With the disappearance of all traces of the syphilis, and the restoration to bodily health, the mental state also became normal, and remained so.

I had a case, H. O., a young woman of 20, who seemed to have contracted syphilis either just before or just after her recent marriage, and on admission to the Asylum showed the characteristic eruption of the second stage, with sore throat and reduced condition. For eight days before admission she had been maniacal, and when sent here was almost incoherent, very uncivil, and foul in her language, being especially erotic and nasty in her ideas. She had, as well as the syphilitic eruption, bronchitis with some amount of pleurisy. She was put on iodide of potassium, with a little mercury, and tonics and nutrients. She gradually improved in mind, the syphilitic eruption passed away, but her lung disease went on, and of that she died within six months.

Now, such cases might be thought to be mere coincidences of an attack of mania with one of syphilis, were the beginning and termination of both diseases not so contemporaneous. I presume such moral causes of insanity as fear, remorse, and shame come in and help the blood poison to start the psychosis in such cases sometimes. But it would be strange if the infection of the system and of the blood with such a virulent and vile poison did not sometimes derange the functions of the convolutions in persons predisposed to insanity. This form of syphilitic insanity has no known pathology. Its treatment is that of secondary syphilis, and its prognosis is good.

The second form, the *delusional syphilitic insanity*, is one due, in my opinion, to slight brain starvation from an obscure syphilitic irritation that has become arrested. It consists of a monomania of suspicion or of unseen agency, with hallucinations of the senses, and sensory perversions, but without motor symptoms, following at some distance of time an attack of syphilis in persons strongly predisposed to insanity. It seems as if, in fact, the syphilitic poison had produced a subtle dynamical change in the brain convolutions and their trophic energy as well as slight arteritis, manifesting itself in unreason, hallucinations, and an organic feeling of ill-being. Dr Hugh Grainger Stewart published several graphic cases of this kind. One of them imagined he underwent a kind of nightly torture, called by him the "cylinder finish"; another said that most ingenious machines were introduced into her brain to torture her; another that people shot vitriol, ammonia, and "black poison" at him all night, to avoid which he wedged his bedroom doors, covered the keyholes with blankets, stuffed his ears and nostrils with cotton-wool and his mouth with a pocket handkerchief, all these defensive measures against his imaginary bombardment taking him an hour to carry out before he went to bed. I have several cases of the same kind under my care just now. One is a woman, H. P., a prostitute, who thinks there is a network of wires in her brain, put there by me. Another, a gentleman, H. Q., strongly predisposed to insanity, his only sister being insane, who, a year or two after a bad attack of syphilis, and while some of its constitutional effects still remained, developed delusions of a conspiracy against him, and that people affected him sexually at night. Under the influence of these delusions he became dangerous. Such cases are, in my experience, almost always incurable. They are liable to be complicated by alcoholic and phthisical causes of brain disturbance. I admit that it may fairly be asked about such cases — can we not have those symptoms, without the occurrence of syphilis at all? I think we can. Or is there

such proof in any of those patients that have been syphilitic that this poison or its trophic effects were really the causes of the mental derangement? In many of them certainly the time between the supposed cause and its effects was long, and altogether the scientific proof of their connection is weak. Still the coincidence of this type of case with previous severe attacks of syphilis is certainly very marked in a large number of cases. There is a general resemblance between the mental symptoms of such cases and those of the case of the "*vascular syphilitic insanity*" where marked disease is found in the arteries of the brain.

The next two forms have a very definite pathology. One, *the third* on the list, may be called the *vascular syphilitic insanity*, and *the fourth*, the "*syphilomatous insanity.*"[1] The one depends on the tendency of the poison to affect the blood-vessels of the brain and cause slow arteritis, with diminished blood-carrying capacity and consequent slow starvation of the cerebral tissue. The other depends on the tendency of the poison to affect the connective tissue, membranes, and bones, and cause pressure, irritation direct and reflex, and inflammation in the convolutions. Any causes of arteritis or tumour or pressure or irritation other than syphilis would probably produce somewhat the same mental symptoms; and, as a matter of fact, some of those mental symptoms follow non-specific arteritis and tumours, and also traumatic lesions of the brain. Yet the syphilitic cases, though not absolutely pathognomonic, are nearly so in most instances.

Vascular Syphilitic Insanity.—Of the vascular syphilitic insanity I give the two following cases out of many I have met with, because they are very typical:—H. R., when he was a student, was infected with syphilis, which ran a bad course, and many of its somatic effects never left him, *e.g.*, copper-coloured spots and baldness, and, as we shall see, his liver was the seat of an old gummatous deposit. He entered

[1] Mr Hayes Newington, *Journal of Mental Science*, vol. xii. p. 555.

the church, married, and procreated several unhealthy children, one of whom became insane, suffering from repeated attacks of mania. In twelve years after his attack of syphilis he became changed mentally and morally, showing a morbid irritability, threatening violence to his wife and children, disregarding the decencies of life and the proprieties of his social station and profession, going about his parish telling improper stories, and not conducting himself rightly in regard to some of the female members of his congregation. On admission to the Asylum, his mental symptoms were those of simple coherent "reasoning mania." He had stricture, copper-coloured blotches on his skin, and irregular baldness. After being in the Asylum for a month he affirmed he had several "fits," but there was no proof then of convulsions. He was untruthful, malicious, showed no natural feeling and no self-respect. He was a year in this Asylum, was then transferred to another, and then back to this where he died. His mental power steadily deteriorated; he became subject to regularly recurring convulsive seizures; after some years he had, along with general weakness, a partial paralysis of the left side, with incontinence of urine, thickness but not tremulousness of speech. Mentally he passed from irritability into enfeeblement and loss of memory, from that into stupor, in which state he died, thirteen years after he first showed mental symptoms, and twenty-five years after he had contracted the attack of syphilis which had been at the root of all his ills.

On *post-mortem* examination the calvarium was found condensed, and the right side of the frontal bone thicker than the left. The dura mater was much thickened, congested, and in some places adherent to the bone and to the pia mater, and this last to the brain convolutions, so that the dura mater could not be removed without lacerating the convolutions. This was particularly the case over the parietal and frontal lobes. On section a great part of the centre of the anterior lobe of the right hemisphere, and many of its convolutions, were found to

be atrophied, the place of the neurine, white and grey, being taken by a flocculent gelatinous fibrous material. The outer layer of the grey matter of those convolutions was found to be normal-looking, like the appearances in Plate VII. but not so advanced. On the left side of the brain the white matter was generally lacking in consistence—pale in some places and congested in others. The lining membranes of all the ventricles were very granular. The basal ganglia on the right side were softened and congested in spots.

An examination of the arteries of the brain showed a hypertrophy of all the coats, causing obliterations of the lumen in places, irregular contractions, and nodulated thickenings (Plate I. fig. 4). Every form of irregular local arteritis was found, all the vessels being more or less affected, but especially the branches of the middle and anterior cerebral passing to the atrophied part of the right hemisphere.

The spinal cord was found to have undergone general atrophy, with anæmic and softened portions in the dorsal region, and intensely congested portions in the lumbar region. The dura mater, pia mater, arachnoid, and cord were all matted together in some places. The liver was found to be puckered with cicatrices, and to have a small gummatous tumour the size of a bean in one portion of it.

It was evident that here there had been a syphilitic inflammation of the membranes; but the great bulk of the mental and bodily symptoms could be traced to the effects of the arteritis, which had caused, first, irritation in the brain convolutions, and then a slow process of blood starvation. The real character of the case was never diagnosed during life.

In the following case the arteritis seems to have ceased to progress at a very early period of the disease, and its effects, mental and bodily, were therefore almost stationary for thirty-five years:—H. S.,[1] æt. 30 on admission. Patient had a

[1] This case was more fully reported by the late Dr J. J. Brown, then assistant physician, Royal Edinburgh Asylum, in the *Journal of Mental Science*, July 1875.

severe attack of syphilis at 17, for which he was treated with mercury. After this he was always irritable, and sometimes violent. On one occasion he attacked his mother, and smashed the door of a neighbour's house with a poker, and, when taken to the police office that night, had a partial hemiplegic attack. He was for ten years in a private asylum at Musselburgh, and then was taken to Morningside. On admission he had delusions of suspicion, impulsiveness, violence, and also hallucinations of hearing, fancying he heard voices calling him "low," "mean," and seeing figures that he imagined jumped down his throat. He was taciturn and melancholic too.

In three years his delusions were worse. He seemed to have had a slight difficulty of speech, and he imagined a woman had located herself in his mouth and was the cause of this, as well as of a bitter taste in his mouth. His gait was a little unsteady, straddling, and ataxic, and he dragged one leg a little. His bodily condition was never strong, he looked weary and pale, and he always suffered more or less from dyspepsia. His delusions, impulsiveness, and excessive irritability of temper continued for the twenty-six years he lived in the Asylum; and superadded to these there was considerable general enfeeblement of mind. His legs got weaker before death in 1875. He died of diarrhœa. The brain membranes were thickened, a thin layer of blood-clot was found under the pia mater, and the convolutions were much atrophied. There was a small cyst in the pons. The *microscopic appearances* were very striking (see Plate I. fig. 4). The arteries in the pons were thickened, the muscular coats being hypertrophied to an enormous extent, the outer coat being also much thickened, and in and around this coat was a molecular deposit containing also granular masses, this deposit in many instances filling up the perivascular space. At some parts the vessels were patent, at others completely occluded and the lumen absent, the artery presenting the appearance of concentric rings in the centre of a granular deposit. The grey

matter of the convolutions was found to be degenerated, the cells being atrophied, and their spaces in many instances being occupied by a few granules (like those shown in Plate XIII. fig. 6). The spinal cord was also affected in the same way in its arteries, and in its grey and white substance. There were many microscopic apoplexies in the white substance of the cord.

No better demonstration of chronic vascular disease of syphilitic origin, and its effects of brain starvation, degeneration, and atrophy, with the resulting mental suspicions, hallucinations of hearing, and lack of self-control, could have been afforded than this case, and it illustrates, too, the stationary character of many syphilitic brain lesions for many years.

Death of the White Substance with Survival of the Grey.—I have seen some very extraordinary pathological effects in the brain from slow syphilitic arteritis. I have several specimens of brains in which the whole of the white substance in the inside of the anterior and middle lobes, lying between the outside convolutions and the central ganglia, had gradually and entirely disappeared, leaving a vacant space filled with fluid and a few fibrous flocculi. The grey substance of the convolutions, looked at from the inside in an antero-posterior section of a hemisphere, presents the most extraordinarily defined appearance, just as much so as when looked at from the outside (see Plate VII.). They looked as if the white substance had been carefully pared off them, leaving the grey matter intact. The effect was exactly what would have resulted had that portion of brain been steeped in a fluid which had the power of dissolving away the white substance and leaving the grey entire. The cause of this is no doubt the histological facts that—(1) the grey substance of the convolutions has five times the amount of capillary blood supply of the white; and (2) the source and mode of supply are different, the grey substance getting it from the already divided and anastomosing network forming the pia mater, and the white substance getting its supply from

single vessels, which in dividing form only an infrequent anastomosis, and a network with large long meshes. The white substance, in fact, dies, and disappears through an arteritis which only causes partial atrophy, anæmia, and lessened mental function in the grey convolutions. Looking at such a brain, many questions suggest themselves. How do the convolutions act whose projection and association systems of white fibres have quite disappeared? Why do they not undergo degeneration? Is there a general power of conduction in the convolutions from one through the next, and so on till it reaches one whose ingoing fibres are intact?

Most of the vascular cases have the general course of H. R. Mentally a change of character, morbid suspicions, loss of self-control and of the moral feelings, a disregard of the decencies of life, then an intense irritability, often with violence and a loss of memory, then an enfeeblement of the mental power, ending in dementia. Bodily, an unhealthy and cachectic general state, a lack of trophic power, no cephalalgia necessarily, then a general failure of muscular power and a tendency to partial paralysis, but never more localised than a motor paralysis that advances and recedes in a puzzling way, then occasional epileptiform fits, sometimes unilateral, then loss of power over the sphincters, loss of trophic power, and then death, if that has not occurred at a previous stage through an attack of convulsions. The duration is very different in different cases, but in my experience it is never less than five years, and may be twenty-five. If one was fortunate enough to be able to diagnose a case in the earliest stages, no doubt the iodide of potassium, with mercury, nerve tonics, nutrients, and brain rest, should be prescribed, and I think I had a case where those measures saved the patient from going further than mild and manageable childishness, without tendency to convulsion. But if the lumen of an artery has been lessened by slow syphilitic arteritis, we have little reason to think it

can, by any therapeutic means, be made more patent; and if some of the brain tissue has already been starved into atrophy, most certainly it would be a groundless hopefulness to think of its possible restoration.

Looked at purely from the pathological point of view, the arteritis may affect vessels of any and every size down to capillaries, may be inside (endarteritis) or outside (periarteritis) of the arterial wall. It is usually irregular and local, and often nodular. I do not know any more instructive demonstration of the visible effects of a lack of blood supply to brain cells and fibres than may be found in sections from different parts of a brain affected by syphilitic arteritis.

Syphilomatous Insanity.—The fourth or syphilomatous form is so exceedingly various in its symptoms, mental and bodily, that I really do not know where to begin. It may consist of a syphilitic meningitis attended with general convulsions, a temporary stupor and delirium, which is very curable by the iodide of potassium. Or it may consist of a quick-growing syphiloma within a convolution, that causes in a few weeks extensive softening, wild maniacal excitement, general convulsions and paralysis, and speedy death, the whole process being from the beginning absolutely beyond the reach of cure, or even of alleviation. Or it may consist of local gummata, causing pressure, local convulsions, mental irritability, and very slowly progressive dementia. Or it may consist of great cakes of syphilitic inflammation and gummatous or semipurulent deposit over one or both hemispheres, causing gradual dementia, and at last coma. Or it may be a membranous or bony tertiary lesion that has been quite arrested in its growth, but has set up what is practically epilepsy and ordinary epileptic insanity. I shall attempt to give an idea of the disease by referring to a few cases. I shall first illustrate the more acute forms by the following *case of syphilitic tumour of rapid growth within the substance of the brain.*

H. T., æt. 26, a prostitute, whose history was not known except that she had been deliriously maniacal, cephalalgic, and

had taken convulsive attacks. On admission to the Asylum she was vacuous and taciturn, and almost in a condition of stupor. Her pupils were unequal, but there was no motor paralysis visible. She partly wakened up, and spoke in a slow, hesitating way. After being in the Asylum for a month, and taking many convulsive attacks during that time, she died suddenly one day after such an attack. A small gummatous tumour was found in the centre of the anterior lobe of the right side, involving one of the frontal convolutions, and this was surrounded by a great ring of white softening and brain anæmia, and that again by an outer ring of congestion. I had lately another case very similar to this, H. U., æt. 41, with no ascertainable history of syphilis, but who had had several miscarriages. Uncle had been a patient in the Asylum. For a year she had suffered from intense cephalalgia, mostly on the right side, passing to the forehead and affecting her sight. For six months she had had fainting turns, and for three weeks convulsive attacks. On admission she was mentally confused, complained of voices round her bed, and talked wildly and incoherently about things that had no connection with the questions asked her. She began to take convulsions a fortnight after admission, and died of these in three weeks. I had during life diagnosed brain tumour, probably syphilitic. After death we found under the dura mater several hæmorrhagic patches. The convolutions presented a flattened "glazed" appearance. Section of the brain showed great pallor of the white substance of the left hemisphere. In the lower and middle part of the left internal capsule there were two small gummatous tumours, one the size of a big bean, the other the size of a filbert. They were surrounded by an area of loose, disorganised, softened brain substance, involving the anterior third of the corpus striatum, spreading through the temporo-sphenoidal lobe, the whole of which was pulpy. The softening extended also along the posterior horn of the lateral ventricle. In the right hemisphere there was also an

abnormal pallor, but there was no softening except in the posterior lateral ventricle, which presented much the same appearance in a less degree as on the left side. There was no tumour or deposit on the right side.

Symmetrical Brain Lesions.—This exemplified what is very commonly found in the brain, viz., *a symmetrical lesion in exactly the same place on both sides of the brain.* My experience is that vascular and trophic lesions of the brain, such as apoplexies, large or capillary softenings, and thrombosis, are exceedingly apt to occur in both hemispheres in the same places and almost at the same time. *This vascular and trophic sympathy of the two hemispheres, extending to diseased conditions, is a most important fact little noticed in pathological works, but physiologically and pathologically it must ever be kept in mind in brain study.*

In both the above cases the cerebral blood-vessels seemed normal. A small local quick-growing syphiloma in the brain substance had caused surrounding destruction by pressure and irritation, setting up an inflammatory process, and causing tissue death. The symptoms had been cephalalgia, convulsions, mania, confusion, loss of attention and memory, and sudden death within a short time. I have since met with two cases of the same kind of much slower course and without convulsions.

The next example I shall take of brain syphilis is one that most physicians would not be inclined to regard as one of "insanity" at all, though, as a matter of fact, the patient was incapacitated for work, confused and stupid in mind and at times delirious. But, being a clear case of brain syphilis of a common type, with mental symptoms cured at home by appropriate treatment, it is more important to the practising physician than cases with more decided mental symptoms.

H. V., æt. 33. Patient's mother had been insane for a year, "after a fall on the head." He had syphilis six or seven years ago, with few secondary symptoms. He had not been feeling well for six or seven weeks, suffering from very severe

headaches. Three weeks ago he took suddenly a very severe attack of general convulsions with unconsciousness. Before that he had on several occasions a rather pleasant momentary feeling of "being in a trance," and this sensation preceded the fit. When taken home after the fit, he was confused and had severe cephalalgia, and had slight left hemiparesis. He went to the late Dr Begbie, who prescribed iodide of potassium in 5-grain doses. Since then he had travelled about a little, and tried to do business, but could not do so properly on account of loss of memory, lack of power of attention, general confusion of mind, and severe cephalalgia. When I first saw him he was considerably paralysed in the left side; he had double vision, and a loud noise in his right ear; he was confused, mentally depressed, his memory very poor; he was irritable, wayward, tending to be violent, and difficult to manage. If he had been a poor man he would probably have been sent to an asylum at once. He suffered the most fearful cephalalgia, especially at night, and the slightest tap, especially over the right side of his brow, greatly increased his sufferings. The skin of the right side of his head and face was hyperæsthetic, and his right conjunctiva injected. He could not read nor write. Pulse, 80; temperature, 98·4°. Appetite gone, tongue much furred. I put him at once on 10-grain doses of the iodide of potassium, with 15 grains of the bromide, and $\frac{1}{12}$th of a grain of the bichloride of mercury thrice a day, with milk and potass-water alone for diet. For about a week he got no better, suffering the most fearful agony in his head at night, becoming delirious, and wanting to go out at the window. I tried chloral in 25-grain doses repeated every two hours, as well as the bromides and tincture of cannabis indica, in large and repeated doses, to dull the night pain and procure sleep, but with only very temporary relief. In the mornings, after those medicines, he was always more confused and irritable, and had no appetite. By far the best thing I found for easing the night cephalalgia and procuring sleep was to make him lay his head on a rubber bag of almost unbear-

ably hot water. After a week the cephalalgia abated, he got a little more sleep, and he became less irritable and confused and less frequently delirious, and he looked better, but the paralysis did not improve for a fortnight, and then I raised the dose of the iodide to 15 grains three times a day. In three weeks the double vision ceased, and he began to walk and grasp better. The cephalalgia became nearly paroxysmal, and took the form of neuralgia of the supraorbital branches of the fifth nerve. He became less sensitive to tapping his head, his tongue got clean, and his appetite so ravenous that I had much difficulty in keeping him from eating flesh diet. In a month he was still further improved, could walk, read, and dictate a little, and was able to be out in the open air, though any exertion, mental or physical, produced a sense of intense exhaustion. The noise he had in his right ear disappeared about that time, and also a feeling of cold on that side of the face. In five weeks he was almost convalescent, and mentally normal, though he had on two occasions the "trance" feeling that preceded the convulsions. In two months he had what was evidently a syphilitic inflammation of the periosteum over the mastoid process of the right temporal bone. He omitted the iodide for a week at my advice, but at once he began to feel worse in all respects mentally and bodily. I then increased the dose to 20 grains three times a day. This he took steadily for two years without showing a trace of iodism; on the contrary, getting fat and strong, and mentally vigorous. A dimness of vision in the left eye, and a tendency to pains and slight weakness in his left side on damp days, were the last of the symptoms to disappear. After two years I finally stopped the iodide, after having several times tried to do so before with bad results, and he keeps well and fit for business, with just a trace of head symptoms at times.

This was no doubt a case of syphilitic inflammation and thickening of the membranes of the brain over the right hemisphere, affecting the cortex of the organ and its functions, mental and bodily, by pressure and inflammatory irritation.

There was no doubt a gummatous deposit there. The beneficial effects of large doses of the iodide, and the tolerance of those doses for so long after the symptoms had apparently disappeared, is the common experience in those cases. The mental symptoms were characteristic in all respects. I have had other cases of this kind, not put under treatment so soon, which have gone on for years partially paralysed, subject to the convulsions, and at last dying.

Frequency.—Out of 3145 cases of insanity of all classes of society admitted into the Royal Edinburgh Asylum during the past nine years, 16 have been cases of syphilitic insanity, or about $\frac{1}{2}$ per cent. Few of these recovered, or are likely to recover, the majority of the patients being far advanced in their disease before admission, with serious involvement of the structure of the brain.

ALCOHOLIC INSANITY.

Alcohol as a cause of insanity ; over 20 per cent. ; as a cause of human degeneration—*Real Alcoholic Insanity:* Five forms—1. *Delirium tremens* often has a preliminary stage of suicidal and homicidal impulse ; importance of this ; often leaves, after many attacks, an insanity with hallucinations of hearing and morbid suspicions ; treatment. 2. *Chronic alcoholism:* Motor symptoms ; suspicions ; hallucinations ; impulsiveness ; dangers ; reflex function of cord often abolished ; likeness of speech to general paralysis ; suspicions of poisoning ; tends to end in dementia or delusional insanity ; first attacks curable ; treatment. 3. *Mania a Potu:* Symptoms ; acute delirious mania ; duration short ; kind of brain in which this occurs ; general want of control ; hereditary predisposition. 4. *Alcoholic dementia:* The end of many chronic drinkers ; likeness in symptoms and pathology to ordinary secondary dementia after mania. 5. *Dipsomania:* A psychokinesia ; diagnosis ; prognosis, bad ; treatment, an island where whisky is unknown, work, supervision, redevelop the conscience ; hereditary connections. Impure alcoholic drinks are most apt to cause alcoholic insanity. Pathological appearances found in brains of drunkards like those found among the insane.

Different Relationships of Alcohol to Insanity.—I do not speak here of the use of alcohol as a general cause of all kinds of insanity. It is unfortunately the most common of all the causes of the disease, in some cases producing it *de novo*, in others bringing into activity hereditary and acquired brain weaknesses. From 15 to 20 per cent. of the cases of mental disease may, taking the country through, be put down to alcohol as a cause, wholly or in part. As a cause of insanity it is not followed by constant results. Conditions of mental depression, of exaltation, of enfeeblement, of stupor, of morbid impulsiveness, may all be caused by it. General paralysis, paralytic insanity, epileptic insanity, adolescent insanity, climacteric and senile insanities may be due to alcohol as exciting causes of the attacks. When so caused, we do not call these alcoholic insanity. I have no time to speak here of those most interesting degenerations of individuals and of races that follow the excessive use of alcohol. Two great French alienists, Morel[1] and Moreau de Tours,[2] have told us nearly all we know of that subject. They looked at the insanity as one of the effects of evil conditions of life, of bad and insufficient foods, of the use of all sorts of neurotics in changing for the worse the type of human being in the first and in succeeding generations. There are few of the unfavourable conditions of life that by themselves cause more human degeneration than the excessive use of alcohol. Many of the American Indian tribes, fine races to begin with, have been simply killed off by it in a generation or two, degenerating in body and mind all the time. You are aware of the pathological tissue degenerations that are caused or promoted by it, the atheromatous, the fatty, the cirrhotic, changes that take place in the vascular, the renal, the hepatic, the glandular, the fibrous, and the nervous tissues. Those are the individual-tissue and single-organ damages. The whole organism suffers somatic and mental lowering,

[1] *Traité des Dégénérescences de l'Espèce Humaine.*

[2] *La Psychologie Morbide.*

alteration of function and of energising. Morbid cravings for alcohol, or diminished self-control in regard to its use, or human degeneration in various forms are transmitted from generation to generation, in the same or other forms, by hereditary laws, if not corrected by new and improved conditions of life. In some individuals they are mere potentialities and tendencies, in others they have assumed definite forms, and become insanity, idiocy, stuntedness of growth, ugliness, deformity, deaf-mutism, sterility, incapacity for high kinds of education, and immorality. Those are large general questions, of the highest interest socially and physiologically. They often become very practical questions to medical men. Alcoholic degenerations influence the types of all ordinary diseases, and they interfere much with the treatment adopted for their cure. When our profession becomes, as it should be, and as I have no doubt it will in time become, the guardian—by prophylaxis—of the physical and mental well-being of the people, and the high priest of authority for the regulation of the conditions of life, such questions will come far more to the front than they are at present, and they will then, no doubt, form an important part of medical study.

Forms of Alcoholic Insanity.—Meantime I have merely to describe and illustrate those forms of mental disease in which alcohol has not only been the cause, but has so influenced the symptoms that they are in some way special or peculiar, so that the mental and bodily results are as it were specific, and may be called alcoholic insanity. Few agents have such different results on different brains as alcohol. For that reason alcoholic insanity is not in all cases of the same kind. The following are the five chief forms:—1. *Acute Alcoholism;* 2. *Chronic Alcoholism;* 3. *Mania a Potu;* 4. *Dipsomania;* 5. *Alcoholic Dementia and Degeneration.*

Acute Alcoholism.—The most typical alcoholic insanity is delirium tremens, or acute alcoholism. That this is described in ordinary text-books on general medicine, and is treated usually at home or in general hospitals, and is of short dura-

tion, does not make it the less a true insanity. From a symptomatological point of view it is a typical excited or motor melancholia, characterised especially by hallucinations of sight, fleeting delusions of all kinds, but especially delusions of suspicion, depressed and suicidal feelings, partial or complete incoherence, failure of memory, impulsiveness, tendency to mistake identities; in some cases by unconsciousness, and by loss of power of attention. It is the bodily symptoms that give it its most characteristic features. The motor restlessness and the motor tremulousness combined are excessive and constant. In addition, the temperature is usually above 100°, there is paralysis of the appetite for food, often sickness, generally lack of digestive power and of assimilation, a rapid loss of body-weight, and absolute sleeplessness. The typical cases—and in first or second attacks, it runs a somewhat definite course—have a short duration measured by days or weeks. Such cases are now often certified as insane, and sent to asylums for treatment, and but for the ideas connected with a lunatic asylum they are often best treated there. We have the means of treating them more satisfactorily there, according to the present ideas of treatment, than in an hospital. We have trained attendants, suitable rooms, grounds for exercise in the later stages of treatment, and no necessity for the use of narcotics used merely to keep the patients quiet and manageable. The patients often recover sooner with us than in hospitals, chiefly because we can keep them after the first few days in the open air. I do not recommend patients suffering from acute alcoholic insanity to be sent to asylums if they have money enough to have good skilled attendance, and can be sent to a lodging in the country or outskirts of a town after the first few days, simply because the notion of having been in a lunatic asylum is repugnant to most men's feelings, and it may be more injurious to a patient afterwards than if he had been treated in an hospital or at home. It would be easy enough for all large general hospitals to have some rooms and

an exercise ground for the treatment of such cases. The chief difficulty is the expense of keeping a permanent staff of good trained attendants for work that would be only occasional.

Here is a good case of acute alcoholism sent to an asylum, J. A., æt. 34. Has had several attacks of the same kind before. Drinks in bouts, not steadily. Is of an excitable, sensitive disposition naturally. Has been ill for about a week, during which he has not slept. Is chattering incoherent nonsense, addressing imaginary persons in short snatchy semi-delirious sentences. His attention cannot be roused to attend to the questions put to him; evidently has hallucinations of hearing and of sight. He looks up at the ceiling and round the walls as if following some object with his eyes, and turns and says, "Yes," "What is it?" &c., as if in answer to questions or remarks. He is very restless and tremulous, so that he cannot hold a cup to his lips and drink out of it without spilling. The temperature is 101°, pulse weak and quick, skin perspiring, eyes sunk, expression of face haggard and almost vacant, pupils dilated but sensitive, tongue tremulous and coated. His articulation is markedly tremulous, like that of a general paralytic, only thicker. The reflexes are dull, and the spinal reflex action almost gone—in this last respect differing from the greater number of general paralytics. His general strength is very low. He was put to bed and fed with milk and effervescing potass-water, alternated with beef-tea. He was made to take those things by attendants, contrary to his inclination. He was sent out to walk assisted by an attendant for an hour the first day, and that night he was fed every hour irrespectively of his inclination. He scarcely slept. Next day he was fed regularly, and was out in the open air most of the day. His pulse got stronger and he slept two hours that night, and his temperament fell to 100°. The same treatment was adopted day by day, and no medicine was given him but quinine and nitro-muriatic acid, which were prescribed after the first two days. In four days he

was coherent and less tremulous, and could sit still. In a week he was rational, and in ten days he was well, all but the sense of exhaustion.

Risks.—Some cases do not turn out so well. There are five chief risks from the alienist's point of view that I have met with. The *first* is that of the brain passing into a condition of stupor and coma, with sudden death. This takes place in very bad cases that have soaked and lived on alcohol for years. I once had a great stout flabby-looking woman, J. B., whose case took this course, and she died in ten days. She had been dosed with opium, and had had alcoholic convulsions before admission. We found intense brain congestion, thickening of the membranes, and the outer layer of the grey matter of the convolutions diseased microscopically, being full of proliferated nuclei. The *second risk* is the persistence of the hallucinations of hearing after most of the other symptoms have gone. This is apt to occur where there have been many previous attacks and a neurotic heredity. The treatment is exercise in the open air and mental distraction from the morbid fancies. Most of them will soon recover in a month or two. The *third risk* is the persistence or aggravation of the insane suspicions of poisoning, of conspiracy, or of being worked on by electricity and unseen agency, such delusions leading to suicide or homicide. In fact, the case becomes one of delusional insanity. This is very common, especially the delusion of poisoning. This arises out of a misinterpreted sensation. There is chronic gastritis or indigestion from alcoholic irritation of the mucous membrane of the stomach, and the patient attributes his bad sensations to poison. I had one man, J. C., who retained for years the delusion that I had put rats inside him, but he recovered through proper regimen and abstinence. Such cases, as well as those with the persistent hallucinations of hearing, are frequently very suicidal, and need care and watching on that account. The subject of the danger of suicide in all kinds of alcoholic insanity has not been at all sufficiently dwelt on. I believe

that more suicides, and combined suicides and homicides, result in this country from alcoholism in its early stages than from any other cause whatsoever. The *fourth risk* is that the man's brain and the man himself get out of the attack with the finer points of moral character and feeling rubbed off. He is mentally different from his former self, though not insane. He is more untruthful and unfeeling, coarser in the grain, more lazy, and less honourable. His brain has undergone an organic change to some extent. Instead of delicate membranes, they are milky and thickened; instead of sound brain substance, it is mixed with the proliferated and matted lymph connective processes, neuroglia and adventitious tissue. The *fifth risk* is run in patients who have a heredity to insanity, and who have frequently had alcoholic insanity. Instead of the attack resolving itself in the natural way, it runs into an attack of ordinary melancholia or mania, which ends in dementia. In fact, there are a few cases that pass into dementia at once out of the attack of acute alcoholic insanity, or even without this —a dementia characterised chiefly by a loss of memory, a listlessness and inaction, and yet a coherence and apparent power of reasoning not seen to be unreal till you test them. Such cases have been "soakers" for years. I have one such gentleman now, J. D., who once had a powerful intellectual brain, well stored with literature and professional knowledge. He drank steadily for over twenty years, and then had an attack of alcoholism, with symptoms of kidney degeneration and hepatic cirrhosis. He now talks very rationally, dilates on the cruelty of his living in an asylum, and on his ruin by being kept from his business. He has no delusions, and if you give him the cue will repeat half a play of Shakespeare's, and tell you all that occurred to him twenty years ago; but when you ask him the day of the week, or what he had for breakfast, he cannot tell you in the least. When I say to him—and this has been my stock answer to his complaints of improper detention for ten years—"Well, Mr ———, write

to the commissioners and state your case," he will reply, "I'll do so at once; there never was such an outrage committed on a man before." Yet, in ten years, he has never written to the commissioners, though a lawyer. He wanders lazily about our grounds, of which he has the parole, day by day, and is always happy in a negative way, except during the few minutes he dilates to me on the frightful cruelty of his being in an asylum. I had another such case who could not, for a long time, remember his own name. His brain had to be re-educated in this simple act of memory. Such patients are usually fat and torpid in movement. They have lost the fine lines and movements of facial expression. Their affective nature is dulled or twisted. They often lose the craving for stimulants in this state.

Chronic Alcoholism.—The next form of alcoholic insanity is that condition commonly known as chronic alcoholism. This also is always accompanied by motor signs, many cases indeed not being technically "insane." It is often ushered in by alcoholic convulsions. A long-continued, steady soaking in alcohol is, I believe, much more damaging to the brain in its mental, motor, and trophic functions than bouts of heavy drinking with intermissions of sobriety. In chronic alcoholism, looked at, as I am doing, chiefly from the mental point of view, all the symptoms are less acute and last longer than those of acute alcoholic insanity. The suspicions and fears of the latter become a chronic symptom, the delusions are less numerous and more apt to become fixed. The hallucinations of sight are absent, but we are far more apt to have hallucinations of hearing. There are morbid suspicions and loss of inhibitory power, and therefore tendencies to impulsive acts and even to homicide. There is sleeplessness, but it is not so absolute. There is motor inco-ordination, but not so much restlessness. The speech is thick and often tremulous; the tongue very quivering and inco-ordinated in its movements. The functions of the cord are affected, causing a slightly ataxic walk, and a diminution or an abolition of the spinal reflexes,

and sometimes of the tendon reflex. There is often peripheral neuritis. The temperature is often normal, and seldom over 99°. The appetite is never keen, and the taste often perverted, so that the patient complains of food not being what it professes to be.

Here is a typical case, J. E., æt. 41, an innkeeper, whose brother committed suicide, and who has drank hard for many years—whisky being his liquor. His present attack began by sleeplessness, restlessness, insane suspicions, and hallucinations of hearing. He thought his wife poisoned his food, and kept men in the house, whom he would go and seek at all hours of the day and night in cupboards. When sent to the asylum — he attempted suicide on the way — he was almost sleepless, heard voices all about him saying he was to be destroyed and punished, and the voices of his wife and family. His temperature was 98°. He was tremulous and shaky, and could not walk far. He could not write, or drink out of a tumbler without spilling the contents on the floor. His tongue was foul and very tremulous—he could scarcely put it out at all. His appetite was gone, and he affirmed the meat we gave him was the flesh of his children. He was put on the bromide of potassium and steel, was fed with liquid custards, which contained six pints of milk and ten eggs a day in addition to some solid food. He was taken out to walk in the open air till he was tired three times a day, and he had a constant attendant by day and night to prevent him doing any harm to himself or others. Several times without any warning and with no provocation, he has rushed at and broken windows, struck attendants, upset tables covered with dishes, and jumped into our pond. He never could tell after doing them why he did these things. After three months' treatment he was scarcely any better. He would not read, or play games, or take any interest in anything, or speak to any one except when spoken to. But in six months he is now much improved, and showing signs of recovery, which I do not, however, expect to be perfect.

In such cases recovery is slow, and is very apt to be incomplete, if it occurs at all. A chronic degeneration of the whole of the brain plasma has begun. The intellectual power, the power of application, origination, and independent energising are weakened, the delusions of suspicion are apt to persist, the morals and self-respect are apt not to be regained, lying, stealing, and cowardice are indulged in. The affection for wife and children is impaired. Those symptoms run on for a year or two, and then we have dementia supervening. But this termination is not invariable. First attacks are often recovered from in a way, even second attacks will be got over, but third and fourth attacks are seldom completely cured. Instead of dementia, we have sometimes in young subjects delusional insanity supervening. I have one such man, with a tremulous tongue that he always puts out to one side, who affirms he is "worked only by electricity," and hears voices; another who says his food is poisoned; another who thinks every one near him insults him in everything they do; another whose ribs are broken every night by unseen enemies. All these delusions, you see, are misinterpreted sensations, no doubt of cortical origin.

Treatment. — The treatment of such cases consists in the use of tonics of all sorts, of nerve stimulants such as strychnine, and the continued current for a time if such brain stimulation does not cause excitement, and especially of rigid abstinence from alcoholic stimulants, and the leading of a controlled, regular, physiological life in the open air, with garden work if possible.

Mania a Potu.—There is a third kind of alcoholic insanity of short duration, but great acuteness while it lasts, called variously *mania a potu*, or, very expressively, *delirium ebriosum*. It occurs in the cases of persons, often young, with unstable brains hereditarily. It needs very little drink to produce it; and in many cases looks like a prolongation and exaggeration of that wild drunkenness that occurs in certain people who are said not to "carry their liquor well."

A few glasses of spirits make them riotous and unmanageable, and often quite delirious, unconscious, homicidal, and violent. Such brains have often shown a weakness from the beginning, such as lack of self-control, tendencies to be easily lead away into vice, incapacity for getting on. In some of them there exists a craving for stimulants, constituting the condition known as dipsomania. Mr Hayes Newington, while one of the assistant physicians here, gave a capital account of *mania a potu*, with clinical illustrations.

Dipsomania.—I have already treated of this condition in the lecture on conditions of defective inhibition (p. 361).

Alcoholic Dementia and Degeneration.—Lastly, I shall briefly refer to the lowered mental condition that is apt to result from the too great indulgence in alcohol, apart from acute insanity, or from an inordinate craving, or even in some cases from the notion of disease, bodily or mental, at all. A doctor of experience soon comes to observe in his patients and in his acquaintances a certain kind of change, mental, moral, and bodily, in some of the people who habitually "take more than is good for them." The expression of face and eyes you see to change, the mental tone to be lowered, the power of application to be lessened, the self-control to be weakened. I am safe in saying that no man indulges for ten years continuously in more alcohol than is good for him, even though he was never drunk all that time, without being psychologically changed for the worse. And if the habit goes on after 50, the change is apt to be faster and more decided. We see it in our friends, and we know what the end of it will be, but we cannot lay hold on anything in particular. Their fortunes and work suffer, and yet you dare not say they are drunkards, for they are not. It all depends on the original inherent strength of the brain how long the downward course takes. Usually some intercurrent disease or tissue degeneration cuts off the man before he has a chance of getting old. I have seen such a man simply pass into "senile" dementia before he was an old man, from mild, respectable, alcoholic excess, without any

alcoholism or preliminary outburst at all. And I am sure I have seen strong brains in our profession, at the bar, and in business, break down from chronic alcoholic excess without their owners ever having been many times drunk. Such men lose their memory. Alcoholic dementia is essentially an amnesic disease. They are irritable, and have no originating power.

Various Drug Insanities.—I have seen many cases of *insanity resulting from opium-eating*, and several from the *hypodermic use of morphia*. Those were very like the insanity of chronic alcoholism, but not so suicidal, with greater weakness of the heart's action, and more sleeplessness, sickness, and intolerance of food for the first fortnight. It is precisely the same class of persons who indulge in opium who indulge to excess in alcohol, and the treatment is the same, viz., stoppage of the drug, which may have to be regulated and gradual in the case of opium, with much liquid nourishment, fresh air, and watching. Sometimes cardiac stimulants are needed in addition. I have seen four cases of insanity brought on by the *use of chloral*. They, too, were of the same generic type as the alcoholic cases, and demanded the same treatment. I have seen several cases—all medical men, I regret to say—who had been insane through hypodermic *use of cocaine*. The symptoms were more acute. There were more hallucinations of sight and more sensory disturbances than in alcoholic or opium cases, and the craving for the drug was more intense than for even alcohol or opium. Some patients combine these drugs, taking both opium and cocaine or alcohol and opium.[1]

Pathological Appearances found in the Brain in Chronic Alcoholic Insanity. If alcoholic excess has been long indulged in, whether there have been marked mental symptoms or not, we find evidences of repeated congestions and irritations within the cranium in the shape of thickened and adherent dura

[1] *Vide* "Diseased Cravings and Paralysed Control," by author, *Ed. Med. Jour.*, Dec. 1889 to May 1890.

mater, milky arachnoid, and thickened pia. In extreme cases we find adherences of the pia to the convolutions, and granular linings of the ventricles. In the dementia following alcoholism there is always marked brain atrophy.

But it is when the alcoholic brain is examined microscopically that the most evident morbid changes are seen. Bevan Lewis has investigated this subject, and arrived at very definite conclusions as to the pathology of chronic alcoholism.[1] "The vessels dipping into the cortex from the pia are of undue size and frequently tortuous, and their coats are in advanced stages of atheromatous and fatty change. The nuclei of the adventitial sheath are somewhat numerous, are freely proliferating, or their protoplasm is in a state of fatty degeneration. Far the more prominent feature, however, is the abundance of scavenger cells which pervades the upper or outermost region of the peripheral zone of the cortex lying immediately beneath the pia. These nucleated protoplasmic bodies are everywhere seen, their branching processes forming a dense matting which converts the outermost fourth of this cortical layer into a closely felted substance of minute meshes, the aspect of which differs strikingly from that normal to this region. Whenever a blood-vessel passes downwards through the cortical layers these scavenger cells are more numerous, following the line of vascular channelling, and so dipping down into the nerve elements of the second layer." "Beneath the pia, betwixt it and the surface of the cortex in the so-called 'epicerebral space' we often find a vast quantity of amyloid bodies." "Critically examining the second and third layers of the cortex, we find no very prominent lesion." "But on reaching the large motor cells of the fifth layer" he found them in an advanced stage of fatty change, and together with the layer of spindle cells immediately beneath are undergoing extensive degeneration and absorption. Fatty embolisms and minute aneurismal dilatations are also commonly found in the small vessels of the white substance of the brain. His general con-

[1] *Text-Book of Mental Diseases*, p. 528.

clusion is that the changes observed in the cortex "are undoubtedly indicative of a very chronic inflammatory action proceeding in the vessels of the membranes, and slowly involving the upper cortical strata." The two great morbid alterations of tissue observed by Lewis, it will be observed, are a fatty and a sclerotic change. But in addition to these we find much granular degeneration in the ordinary pyramidal cells, as seen in Plate XIII. fig. 5; we find the pia mater thickened as in general paralysis (Plate XIV. figs. 1 and 2), but to a lesser degree, and the arterioles thickened and diseased as shown in Plate XV. fig. 5, where the thickenings take the form of localised cellular aggregations. This last appearance is more common in alcoholic insanity than in general paralysis.

LECTURE XIII.

RHEUMATIC AND CHOREIC INSANITIES.

Close connection between chorea and rheumatism—Cerebro-spinal rheumatism—Rheumatic insanity ; pain and swelling of joints cease ; temperature keeps high ; fears ; delirium ; hallucinations ; tendency to injury ; sleeplessness ; violent chorea, followed by temporary paralysis ; abatements and relapses ; symptoms probably result from a metastasis of rheumatic morbid action from joints to cord and brain—*Prognosis :* Good—*Treatment :* That of rheumatism—Delirium of chorea an inco-ordinated mentalisation ; long continued chorea tends towards dementia in children — Epidemic choreic insanity.

The two first varieties of mental disease called rheumatic and choreic may be conveniently studied together. There can be no doubt now entertained as to the close connection between chorea and rheumatism ; as we shall see, this connection is shown very vividly in rheumatic insanity, which is also an acute choreic insanity. Cerebro-spinal rheumatism has long been known, but in some of its types it does not come within the scope of a book on mental disease. In one variety of it, however, the most prominent symptoms are an acute delirious mania and choreic muscular movements of a violent character. *The ordinary course of an attack of rheumatic insanity is seen in the following case in a typical form.*

J. F., admitted January 17, 1870, æt. 24, married. First attack of insanity. Mother died of consumption. Father alive and well, and no relative insane or rheumatic. In health she was of a reserved and quiet but nervous disposition, steady, respectable habits, and fond of her children. The predisposing cause of her illness seemed to have been an

accumulation of debilitating and depressing influences, viz., ill-usage by her husband, poverty, cold, hard work, with insufficient food during the three years since she was married, and having nursed her second child for fifteen months up to the period of her attack. These things caused a certain amount of depression of spirits. The exciting cause of her malady was an attack of rheumatism, not of a very acute character, which had lasted for two months before she became insane. She had pains in the back of her neck, pains and much swelling of fingers, hands, feet, and legs, and some feverishness; but she was never so bad as to be quite confined to bed. A week before admission she suddenly ceased to complain of her rheumatic pains, and simultaneously with this relief she showed signs of mental derangement, and violent chorea of head, arms, and legs commenced. Her first mental symptoms were a sort of absence of mind and inattention to what was passing around her, taking no notice of questions put to her or of her children. Before being sent to the Asylum, in addition to this mental inattention, there was great excitement. She tore her clothes, and tried to jump out of a second-storey window into the street. She was sleepless, and the choreic movements had increased greatly in intensity. Her limbs were never still a moment, and she threw her whole body about.

She was much excited on admission, her memory almost gone, and with difficulty she could be got to speak at all in answer to questions, but talked incoherently in monosyllables about the doctor who had attended her. The only question she could be got to answer was to tell her name. The existence of delusions could not be ascertained. She was a dark-complexioned woman with black hair; rather thin, muscles flabby. Eyes dark brown and sparkling feverishly, pupils contracted, equal in size. There were very violent choreic movements of the muscles of her face, head, arms, and legs. Anything she attempted to say or do voluntarily was accompanied by extravagant grimaces, twitchings, and

contortions. Reflex action was diminished. Could not articulate more than single words at a time, and those imperfectly. Could not stand or walk, and was carried with great difficulty; no tenderness of spine; lungs normal, respirations twenty per minute; heart beating quickly but regularly, no cardiac murmur. Pulse 108, strong. Tongue clean and moist; would not take food. Urine clear, acid, sp. gr. 1015; no albumen nor deposits. Had not menstruated since beginning of last pregnancy. Temperature, 100·4°. Several bruises on body, especially over right buttock. She was carried to bed and ordered beef-tea and some brandy. She did not sleep, and on the following day the choreic movements of the legs ceased, these becoming quite paralysed and nearly devoid of common sensibility, the reflex action in them being absent. Bladder paralysed, the urine having to be drawn off once, after which she could pass it. Muscles of eyelids and eyes quite under control. Not so the tongue, which she could scarcely put out at all, and then with a jerk to one side. Mental excitement abated, and speaks better. M. T. 99·4°, E. T. 99·6°, M. P. 80, E. P. 84. Took liquid food; 8 oz. wine, strong beef-tea, and extra diet. She improved slowly until, on the 23rd January—six days after admission — her state was as follows:—"Chorea much less severe, complains of pain in knees, evidently of a nervous kind, for pressure slowly and carefully made does not increase it. Common sensibility somewhat exaggerated in legs, and some power of voluntary movement has returned to them, but she has little reflex movement. Takes food well, bowels regular, no sweating, mentally confused, depressed, no memory, suspicious, will not believe a word said to her, wonders where she is and how she came here. M. T. 98·4°, E. T. 99°, M. P. 108, E. P. 100."

24th Jan.—To-day twitching of fingers only, except when she attempts any voluntary movements. More power of voluntary movement in left leg than right, which is almost paralysed. Right knee slightly swollen. Reflex movements

slight, and more active in left than right leg. Tongue twitches when put out, and goes towards right side. Temperature the same. She has hallucinations of sight and touch, saying that she sees an old woman coming behind her and eating her food, so that she cannot get any of it, and that one foot has been cut off. Is depressed, weeps, and groans.

29th Jan.—Has had a relapse; chorea worse in left arm; complains of pains in arms and legs. Complains of a burning feeling all over her. A large slough forming in right buttock where it had been bruised. She complains much of the pain of this. She still cannot tell correctly the place touched on her legs, but when pinched she screams. Requires to be fed with a spoon, shows a mental aversion to food, though she is evidently hungry. M. T. 100°, E. T. 97°, M. P. 116, E. P. 116. She has no affection of sight, and no sparks nor motes before her eyes.

5th Feb.—She now has so far recovered the power of her legs that she can stand. Chorea almost gone when she makes no voluntary movements. Mentally a mixture of stupor and depression, as before, and the hallucinations of sight and touch remain. M. T. 99·8°, E. T. 101°, M. P. 120, E. P. 120.

She gradually but not quite steadily improved, and her temperature fell until, on the 19th February, she was reported as having only very slight chorea in hands, but as still complaining of the pains in legs. Mentally she was still confused, but her memory was returning. M. T. 98·2°, E. T. 98°, M. P. 94, E. P. 100.

2nd April.—"Believes now what she is told, and is almost rational; but her right hand is swollen, though quite painless. Chorea rather worse, and she cannot sleep so well as usual." The sleeplessness increased, and the choreic movements began to trouble her exceedingly at night, and on the 4th her M. T. was 99·2° and her pulse 104 and weak. As an experiment I gave her 20 grains of chloral in the morning, which made

her slightly drowsy, and quite stopped the choreic movements till the evening, when they came on again, and she could not sleep. I then gave her 40 grains of chloral. She slept soundly; the chorea ceased; her temperature next morning was 97·3°, and her pulse 84 and stronger. Her mind had not been affected during this little aggravation of the chorea. The swelling of the hand remained for a day or two longer, and then gradually disappeared. Still the reflex action in foot was diminished, and she complained of intense heat of hands. Wound on buttock healed up slowly.

22*nd April.*—No chorea now except when she smiles; she then grins and looks nervous in her movements. Sleeps and eats well. Industrious and rational. Has only gained two pounds in weight in a month. M. T. 98·4°, E. T. 98°, M. P. 96, E. P. 84.

Her recollection of the coming on of the disease is imperfect, and she has no remembrance of the choreic movements beginning. Her mind must have been affected simultaneously with their appearance or before them. She does not even recollect the rheumatic pains disappearing. She says that she had no conscious feeling of weakness or exhaustion from the nursing before the rheumatism began. Her recollection of events which occurred during the first month of her illness is very imperfect.

29*th April.*—During the past week has gained five pounds in weight, and is now cheerful, rational, and says she feels perfectly well. Muscles under her control. From that time her perfect recovery was steady and rapid.

Is any light thrown on the relations between rheumatism, chorea, and insanity, or on the connection between motor and psychical abnormality, by the case I have related? Was the rheumatism the true cause of the mental symptoms, of the chorea, or of both? Were these abnormal affections of motion and the perverted psychical manifestations the result of an identical and simultaneous lesion affecting both the motor and mental centres? Or was the one dependent on

the other, secondary to it, or sympathetic with it? Is it not evident that in this case we have a distinct form of insanity, a form about which much may be ascertained by a careful study of its relation to, and its correlation with, the motor symptoms? It will be observed that nearly all the functions of the nervous system were here affected,—the nutrition, heat production, motion, sensation, reflex action, the special senses, the memory, and the intellectual processes all at the same time, and they recovered their normal action about the same time.

I think it cannot be doubted by anyone that the rheumatism was the true cause both of the chorea and the insanity in this case. All the symptoms,—the coming on of the disease, the choreic movements, the paralysis of motor power, the deadening of reflex action of the legs, the hallucinations of sight, touch, and taste, the want of memory, the acute delirium with unconsciousness of anything going on around, succeeded by confusion of ideas, suspiciousness, and sluggishness of mind, the high temperature increased at night, the tendency to improvement in all the symptoms coincidently with the lowering of the temperature, and the slowness of the convalescence—all these things show that some lesion of the central nervous system existed. And when this is taken along with the fact that such a train of symptoms suddenly appeared in the course of an attack of rheumatism, that the symptoms of the articular rheumatism at once disappeared, while the fever *did not do so*, and that in this woman, when she was nearly well, rheumatic swelling of the knuckles of one hand appeared along with aggravated choreic movements, sleeplessness, and an increase of temperature, we have very strong data, not only to conclude that rheumatism was the cause of the nervous and mental symptoms, but that here we have a true and typical example of a rheumatic insanity, which must be classed by itself as a special form of mental disease, and a true pathological entity.

A Theory of Causation.—As to how the nervous system was affected, may we not form a probable hypothesis? We know how rheumatic disease, whatever it is, affects the other tissues. We know also something of the kind of lesions of the spinal cord which are needed to produce paraplegia and the total absence of reflex action, even if we do not know fully the pathology of chorea or of insanity. In regard to the motor affection of the legs, we saw that at first there was violent choreic movement, which was succeeded by complete paralysis of motion, no reflex movement, and greatly diminished common sensibility. As the power of motion returned, which was in the course of a few days, there was hyperæsthesia and a sensation of heat. Does not this sequence of phenomena indicate a serious but transitory interference with the functions of the nerve-cells and fibres in the spinal cord, such as might be produced by slight rheumatic inflammation and infiltration of the connective tissue of the cord, causing pressure on the nerve elements? If the nerve-cells or fibres had been themselves attacked with any inflammatory affection, they would not have so soon regained their function. We know the rheumatic poison has a special tendency to affect the connective tissue. The rheumatic pains in the limbs are caused, we cannot doubt, either by pressure on the small nerves or by a rheumatic neuritis. And if the cord was affected in this way, is it not probable that the same thing took place in the brain centres that minister to special sensation, and also in the mental portions of the organ? The raised temperature and the strongly acid urine remained the same, whether the rheumatic inflammation was in the joints or in the central nervous system. But when the inflammation had passed away, the effects were far longer visible in the delicate tissue of the nervous centres than in the joints.

In this case the insanity might be described as a metastatic one, if such a term were strictly applicable to the effects of a poison or germ in the blood whose effects are first seen in one

set of tissues and then in another set. The slight relapse, when the hand and the spinal cord were both affected at the same time, showed, however, that the effects of the toxic agent need not be absolutely limited to one sort of tissue. There was no ascertainable trace of a tendency to heart disease in the case.

It would seem that in such a lesion of the spinal cord as occurred in this case, the common sensibility was the last to be abolished and the first to come again; then the voluntary motor power returned, then the reflex action, and, last of all, the power of the nerves which preside over nutrition. That the sensory and motor functions should have been less interfered with than the reflex action is what might have been expected, when we consider that the greater number of the nerve-fibres ministering to the two former merely pass through the cord, while the nerve-cells forming the ganglia which subserve the latter function, lie in the cord itself. The cord was evidently more affected than the brain.

It was not until all the other functions were restored that the trophic power returned, and the patient began to gain in weight rapidly. The slough that formed over the buttock from the bruise, and the slow healing of the wound, showed how much it was affected at first. In regard to the special senses, sight was first affected and then taste, and they were restored in inverse order. Of the purely psychical functions memory and the power of voluntary attention were first affected, then the coherence and balance of the mental powers was upset, and, lastly, the whole of the mental operations were merged in the acute delirium and utter incoherence present. Curiously, in all the patients labouring under this disease that I have seen, there were suspicions of those about them, and entire scepticism as to what they were told about the most simple matters during convalescence. The healthy elasticity of mind and enjoyment of life, which constitute the most certain proof that the brain is performing all its functions normally, were the last to return, and corresponded to the

restoration of function of the centres of nutrition and the commencement of a rapid increase in weight of the whole body.

That was the first case of rheumatic insanity I ever met with, and it has been the best; but I have met with many cases of the same type since. One had an attack of chorea in youth, though without rheumatic symptoms. I had one woman in whom the disease was very severe, and ended in complete paraplegia and death in a few months. I found the cord to have undergone a destructive inflammation and softening in all its columns pretty nearly throughout its entire length. I had lately a case in which the mental symptoms did not go on to delirium, but stopped short at morbid suspicions and sensory hallucinations; she recovered in two months. In relationship to rheumatic insanity one should keep in mind the spinal and osseous lesions in chronic rheumatism pointed out by Charcot.

The treatment of such cases is just the modern treatment of acute rheumatism, with the nursing and care suitable for a bad delirious kind of mania in addition. The prognosis is favourable in most cases. The disease is rare. All the cases of rheumatic insanity which I have met with, have been in the developmental period of life, before 25.

Choreic Insanity without Acute Rheumatism.—We may have a choreic insanity both in early youth—the common time for chorea—and in more advanced life without any acute rheumatic symptoms. The delirium is then, as Maudsley points out, of an inco-ordinated, jerky kind, like the muscular movements. Such a delirium is apt to come in bursts, and to pass away quickly. In the cases of chronic chorea the mental affection is often depression at first, then mania with impulsive acts of violence or suicide, and then dementia in the end. Some of these cases are very sad from the sufferings—mental and physical — the patients undergo through their involuntary jactitations. I had a man, J. G., who frequently had to be placed in a padded room to protect him from the bruisings he

would otherwise have inflicted on himself. He at last literally wore himself out. One is justified in keeping such cases under the influence of chloral, sulphonal, and the bromides to decrease their sufferings. Sleep in any form, and induced by any means, is to them a blessing, for it is the only time they are at rest and peace. Hyoscine may be used in very acute cases.

In many forms of insanity there are choreiform and rhythmical movements that may be called ideo-motor. I had a case of general paralysis, J. H., in which the patient's left hand was always engaged in rubbing his trousers with his thumb and forefinger. I have now a case of excited melancholia, J. L., a lady, who makes the most extraordinary choreiform faces and grimaces in a sort of automatic unthinking way. She says it is a relief to her to do so. This sort of movement is common among the insane, and I look on it as being in many of them closely allied to chorea.

The treatment of all kinds of choreic insanity is, first, tonic and nutritive, and then anti-rheumatic. I have had one or two cases where arsenic seemed to work wonders. I have had other cases where the bromides given as for epilepsy did good. Iron, too, and zinc, and the valerianates, are all good in some cases. Cold to the spine in certain cases temporarily stops the movements.

In the Middle Ages there used to be wonderful epidemics of St Vitus' dance, with morbid mental symptoms, affecting at the same time thousands of persons by a kind of morbid sympathy and imitation. Mankind seems less subject to these strange imitative, uncontrollable, mental-motor epidemics now than it was several hundreds of years ago, but in 1887 there appeared in the newspapers an account of an "epidemic of hysteria" in Italy, which was attended by maniacal and motor symptoms, to put an end to which the police had to be called in and the patients sent to gaol!

GOUTY OR PODAGROUS INSANITY.

A rare disease ; morbid mental condition very common in gout ; Sydenham's description—"Gouty Mania"—*Prognosis :* Good ; duration short—*Termination :* Recovery or congestion of brain.

This is a rare disease in forms sufficiently marked to come under specialist treatment or to be regarded as technically mental disease ; but mental phenomena due to gout are common enough, and have been described by all authors on the subject. Irritability, incapacity for mental exertion, and depression are the most common of these. Sydenham gives a good description of them in his classic work on gout. "The body is not the only sufferer, and the dependent condition of the patient is not his worst misfortune. The mind suffers with the body, and which suffers most it is hard to say. So much do the mind and reason lose energy as energy is lost by the body—so susceptible and vacillating is the temper—such a trouble is the patient to others as well as to himself—that a fit of gout is a fit of bad temper." The above, no doubt, is the most common mental effect of gout, but it does not amount to mental disease. Deep melancholia is a common accompaniment of the gouty diathesis, especially about the climacteric and early part of the senile periods. I have had several cases of intense suicidal melancholia at this period of life in patients with a strong gouty heredity and gouty deposits, but who had not been subject to the regular acute attacks. I have one such case now, J. M., aged 53 on admission, with a strongly gouty heredity and acquired syphilis, who was always more or less dyspeptic, and suffered from constipation. He always had marked psoriasis, and, latterly, gouty deposits on lobes of ears. Before he became affected in mind he fell off in flesh, his skin eruption disappeared, he became very costive, and a very dilated sigmoid flexure was found to exist. Sleeplessness and strong suicidal impulses, with delusions as to his trouble, were the chief characteristics of his depression,

his reasoning power otherwise being good. Every kind of medical treatment — anti-gouty, anti-syphilitic, soporific, sedative, and tonic — was tried in vain. Nothing really seemed to do him good except feeding, with an excess of milk and eggs, sugar and fresh vegetables—which had to be given at first by the nose-tube—and living out in the fresh air. He got fat, and his sleep returned in about nine months, the acute misery disappearing. For several years past he has exhibited a recurrence of the melancholia every second day, with alternate days of freedom. He gained two stone in weight under treatment—a great nutritive triumph in such a subject. There were signs of slight degenerative tissue changes in him in the nerves or nervous centres, or both, evidenced by a partial paralysis of the ring and little fingers of the left hand, with wasting of the muscles. He lived twelve years in the Asylum and died at 65, of kidney and heart disease in addition to some paralytic symptoms. No *post-mortem* examination was permitted. Garrod describes "gouty mania" as a very acute delirious affection, occurring in some patients immediately after the cessation of the acute joint affections. Along with the mania there is heat of head and high fever. In one such case which he describes, all the mental symptoms passed off when one toe became affected in the ordinary way. This kind of acute gouty insanity either terminates quickly in recovery, or runs on to congestion and inflammation of the membranes of the brain.

PHTHISICAL INSANITY.

Brain Anæmia and its mental effects—Phthisis much more common among the insane than the sane—A special connection between the phthisical and the insane diathesis hereditarily and otherwise; frequent occurrence of the two diseases in different members of same family—Phthisical insanity; suspicion; slight mental

weakness ; unsocialness ; slight attacks of excitement ; monomania of suspicion in some cases ; variableness of mind—the phthisical mind ; death-rate from phthisis in asylums has little connection with phthisical insanity—anæmic brain ; nutrition and digestion weak ; mental danger of pretubercular stage of phthisis ; insanity begins before the phthisis commonly—Phthisical insanity forms 3 per cent. of all cases of insanity—*Treatment :* That of phthisis and its diathesis—*Prognosis :* Unfavourable, but 30 per cent. recover.

Brain Anæmia.—An anæmic brain, from whatever cause, is always prone to disturbance of function. Lack of blood means imperfect nourishment and unstable energising. Where we have so vascular a tissue as the grey substance of the brain convolutions, there the blood is needed in largest amount and best quality if we are to have healthy and vigorous mentalisation. Every one who has experienced any disease that has thinned and lessened the blood has felt the difference in his mental power then as compared with health. The physiological effects of depriving the brain of part of its blood, or even of altering the blood pressure, are different in different cases to some extent. In this, as in other ways in human beings, the strong and the weak hereditary qualities of a brain come out. One man has merely singing in his ears, a tendency to faintness, or a profound mental lassitude and paralysis of volition, amounting almost to torpor ; those being probably the purely physiological mental results of a bloodless brain. Another man becomes intensely supersensitive and over-excitable, suffering torture from sounds and circumstances that in health would have been calmly borne ; another cannot sleep ; another has hallucinations of the senses ; another takes convulsions long before that amount of blood is lost that necessarily causes convulsions ; and another becomes delirious, or is attacked with insanity. The same, or rather far greater differences of brain symptoms, result from diseases and morbid conditions that cause or are specially accompanied by anæmia. The cachexiæ, the blood poisonings, and the diseases of nutrition in which blood is not made in sufficient quantity,

may all be attended with danger to some brain functions, though certain brains seem to have the innate trophic energy to nourish their tissues and perform their functions on less blood than others. In those predisposed by heredity to disturbance or enfeeblement of the mental functions, it is the mind that chiefly suffers in conditions of bloodlessness. We are entitled to assume that the convolutions of such brains have less than the normal trophic and functional energy. After death, in such cases, the whole brain, but more especially the convolutions of the anterior lobes and the vertex, are often found disproportionately anæmic as compared with the other organs of the body; and the brain is not only found anæmic, but manifestly wanting in normal consistence, in some cases atrophied to some extent, and in others presenting an appearance closely resembling the first stage of necrosis from brain embolism. In all such cases its specific gravity is lessened. Chemical analysis of the brain has not as yet reached that point of certainty that it can tell us what constituents are specially wanting in such diseased conditions. In patients that have been insane, and had pulmonary consumption, I have seen the most marked brain anæmia, low brain specific gravity, irregular vascularity, and the softest brain texture that I have met with, not to have been cases of "white softening" from embolism or other local cause of brain starvation.

Scrofula and Phthisis in Idiocy and Insanity.—The frequent association of the depraved nutritive condition known as "scrofulous," with idiocy and congenital imbecility, is well known and universally recognised by those who have had experience of such cases, two-thirds of whom ultimately die of tubercular disease. The common occurrence of pulmonary phthisis as a cause of death among the insane had been long noted by those having charge of the older lunatic asylums. A special connection between the scrofulous and phthisical constitutions and the insane predisposition had been pointed out by Van der Kolk and others. The short attacks of

delirium to which some phthisical patients are subject had been described by Morel. And that pleasant unreason, the *spes phthisica*, had been known from classic times. But any special manifestation of mental disorder directly connected with pulmonary consumption had not been described till in 1863 I did so, as the result of a very careful clinical and statistical inquiry into the matter. I was led to the conclusion that such a connection existed on clinical grounds as well as statistical;[1] hence I called the form of mental disease Phthisical Insanity, which is now generally recognised. No doubt consumption was startlingly more frequent as a cause of death among the inmates of the older asylums than in the modern institutions; but still it is in all asylums for the insane between three and four times more common than in the general population *at the same ages*. In the Royal Edinburgh Asylum it has fallen almost to one-half in the past ten years under improved hygienic conditions compared with the period of 1842–1861. But that has nothing to do with the 2·7 per cent. of my patients that I classify *on admission* as phthisical insanity on account of their mental and bodily peculiarities, which I shall presently describe.

No doubt brain anæmias of all kinds, and from whatever causes, are apt to produce mental conditions like phthisical insanity, and in some individual cases, I admit, quite indistinguishable from it. It is said that insanity is infrequent in hospitals for consumption. It may be that such mental disturbance as would be probably reckoned technical insanity is not common in such institutions, but, so far as I am aware, we have no statistics on that question. We have only one person in every 2100 of the general population becoming insane every year; and if one in every 1000 of the persons already phthisical became insane, that would not bulk largely in the mind of a physician to an hospital for consumption whose attention was not directed to the matter, though it

[1] "The Connection between Tuberculosis and Insanity," *Journal of Mental Science*, April 1863.

would be an increase of insanity of 100 per cent. over the general population. But the great reason why insanity is not common in hospitals for consumption is simply that it usually appears before the lung symptoms of the phthisis have appeared in great intensity, and is therefore sent to lunatic asylums instead.

I have the satisfaction of knowing that many acute clinical observers have supported my conclusion that there is a phthisical insanity, Dr Maudsley going the length of saying that he has seen many cases exhibiting a phthisical-mindedness not amounting to technical insanity, less in degree but the same in kind.

No doubt my clinical experience, since 1863, has modified to some extent some of my conclusions of that date. For instance, I do not now look on phthisical insanity as being so incurable a condition as I did then; but I had not then had the experience of the working of the most modern hygienic ideas in asylums, or of the most recent modes of treating the insane therapeutically and morally. But, on the other hand, my experience has strengthened my conviction that a phthisical insanity exists, and in the typical cases that it is well marked in its characters, and that it is different in many essential points from any of the other forms of anæmic or diathetic insanities. It does not arise in asylums through any defects in their hygienic conditions or otherwise. The patients labour under it when they come into asylums. Its existence and amount have no fixed relationship to the death-rate from phthisis in the institution at all, for I find that while in the nineteen years 1842–61 the death-rate from this disease in the Royal Edinburgh Asylum was 29 per cent., I estimated in 1863, from the symptoms of patients put down in the Case-Books, that for the ten previous years about 3 per cent. of the admissions were cases of phthisical insanity; and in the nine years 1874–82, when the mortality from phthisis has only been 13·5 per cent., I have, from my own personal knowledge of each case, diagnosed and recorded at

the time 2·7 per cent. of those admitted as suffering from phthisical insanity. Those two things, therefore, so liable to be confounded with each other, the general death-rate from phthisis and the number of cases of phthisical insanity admitted into an institution, must be kept entirely apart.

Symptoms.—The general characters of phthisical insanity are such as might be expected to be found in persons of weak vitality. There is no acuteness or vigour about the symptoms of the disease. Looked at solely from the point of view of the mental symptoms present, some of the cases would be called mania of the mildly delusional, slightly demented type; more of them would be called melancholia, also of the mildly delusional type; and many of them would be called monomania of suspicion or of unseen agency. It is a very striking fact in regard to the last, that nearly all pure cases of monomania of suspicion sooner or later die of phthisis. The symptom of a morbid mental suspicion runs through all the cases of phthisical insanity. Sometimes, but not commonly, they have an acute stage at first, but this is always short. Most frequently the disease begins by a gradual alteration of disposition, conduct, and feeling in the direction of morbid suspicion of those about the patient, a morbid fickleness of purpose, an unsociability, an irritability, and an entire want of buoyancy and proper enjoyment of life. Along with this there is a loss of weight, indigestion, intolerance of fat, want of enjoyment of food, perversion of taste in regard to food, and a bad colour of the skin. There may or there may not be any definite chest symptoms present. Then comes the acutest part of the attack, if there is such a stage in the case. The patient gets sleepless and mildly melancholic or maniacal, the bodily state running down all the time. The organic enfeeblement that characterises the disease is often shown by refusal of food. The patient thinks he is being poisoned, this no doubt being the convolutional misinterpretation of the pain and uneasiness of indigestion. In a way, he is poisoned, for his food is badly digested and assimilated, and the subjective

sensations accompanying this are not so unlike some kinds of poisoning. After a time the patient becomes irritable, sullen, unsociable, and suspicious, his state varying from time to time. The intellectual processes are not so much enfeebled as that there is a disinclination to exercise them. There are occasional unaccountable little attacks of excitement. The patient is disinclined to amuse or employ himself. He looks on any attempt to persuade him to do so as persecution, and as being prompted by hostile motives. There is some depression, but no intense mental pain. The patient associates with no one, and the kindness of relatives merely calls forth reproaches. If the patient lives long he becomes more silent and apparently demented, but he can always be roused out of this for a short time. Complete typical dementia does not usually occur. If there is any tendency to periodicity, the remissions and aggravations are not regular or complete. Bodily he cannot be fattened, he looks sallow and haggard, his circulation is poor, his pulse weak, and anything like a healthy nervous or nutritive tone is absent. There is no muscular energy, and a strong disinclination to exertion. The appetite is poor and capricious. Colds are taken very easily. The patients lose weight, and are all round worse in cold weather. The temperature tends to be low until the lungs become affected, and then there is an insidious evening rise which is perhaps the only sign of the presence of a bodily disease. In very many of the cases—one-half the number, according to my experience—the chest symptoms are at first latent, even after the lungs have become markedly affected. There is no cough or spit or pain. I have often happened to notice that a patient labouring under phthisical insanity—and this applies to cases of dementia and many cases of acute insanity too—was breathing a little more quickly than normal, or was looking more pinched, or was falling off his food, or that his pulse was quicker and weaker than usual, or that he had a hectic-looking spot on one cheek, or that his skin felt hot; and on examining the chest in consequence of some such

indication, I have found extensive consolidation, or breaking up of the lung tissues. The progress of the lung disease varies much in different cases, in some being rapid and causing death in a few months, and in others going on for years if the conditions, food, and hygiene are favourable. I have seen such cases in the very feverish stage before death, when the temperature rose over 102°, rouse up wonderfully, and even cease to manifest the morbid suspicions, but such cases are exceptional. It would seem as if in these cases the high temperature and quickened circulation stimulated the anæmic and ill-nourished convolutions to increased and almost normal mental activity.

The following is an example of the disease:—

J. N., æt. 43. Her previous history was not known very accurately, but this seems to have been the first attack of insanity, and it had not existed more than a few months. She resided in London, and came to Edinburgh to seek her son, who had been dead some time. This she had known before she became insane. No hereditary predisposition was known. She had been wandering about and troublesome, but not violent.

On admission she was apathetic, and, when roused, suspicious-looking, not answering questions correctly or even intelligently, but showing her insanity much more by her peculiar expression of face and her conduct when spoken to than by her conversation. Hair dark, complexion dark. She is of the melancholic temperament. She was on admission thin and weak, but appeared before becoming insane to have enjoyed good bodily health on the whole.

After being some months in the Asylum, her mental state was as follows:—

"She has many delusions, which she only shows at times, and is not very consistent in her expression of them. She fancies that she is pregnant, that the fœtus is extra-uterine, and that she will require to be operated upon. She is very suspicious, especially of her food, sometimes starving herself through fear of being poisoned. She also at times seems to

imagine that she has much property that is being kept away from her. She is very idle, and cannot by any means be persuaded to employ herself. At times, without any cause, she becomes abusive to those about her, and much excited. She remains thin and pale, but takes her food well, and has shown no clear symptoms of suffering from any actual lung disease. She is unsociable, takes no interest in her friends, does not want to get away from the Asylum, or at least expresses no wish to do so. She gets excited for short periods of a few hours at times, and during these attacks of excitement all her symptoms are much worse."

And in the course of two years her state was the following:—

She is now much thinner and weaker than she was, but no marked symptoms of any disease have manifested themselves, and she refuses to allow any examination to be made of her chest. She is more taciturn and less seldom abusive, except when she is spoken to or interfered with. She never speaks to any one, except to ask for something she wants, resents being interfered with in any way, and treats all about her as if they were her enemies. When asked about her health she frequently becomes abusive, and seems to think some insult or harm is meant her. She is never pleasant by any possibility, and never thankful for any attention shown her. She distinguishes in no way those who are kind to her from those with whom she has nothing to do. At long intervals now she becomes excited, abusive to some one who has given no cause for such conduct, and she assigns no reason for such abuse.

She remained mentally as described, but in bodily health became weaker, lost flesh, and did not take her food so well, but no cough nor spit appeared till two months before her death, which occurred after she had been in the Asylum five years. For two or three years before death she had been thin, pale, weak, capricious in her appetite, inclined to keep her bed, and evidently labouring under organic disease.

She resisted an examination of her chest so very strongly that it was never thoroughly made. There was never any diarrhœa, but all the other symptoms of phthisis were present in great severity for two months before death.

Post-mortem Examination. — The brain was atrophied, anæmic, and œdematous. The white substance composing and surrounding the fornix and septum lucidum was almost diffluent. The left lung was everywhere infiltrated with masses of tubercle, each tubercular spot soft in the centre. The cavities so formed were many of them evidently very old. The upper lobe of the right lung was in a similar condition. The mesenteric glands were enlarged and tubercular. The mucous membrane of the cæcum and ascending colon was ulcerated, thickened, and red.

Commentary on such a case is almost superfluous after what I have said about phthisical insanity. A woman has a family and lives till she is 43. She then becomes insane, never having very acute symptoms, *suspicion*, *irritability*, *unsociability*, with *causeless*, *unaccountable exacerbations*, and a *want of interest in anything* being the chief symptoms. She is thin and in weak bodily health when she becomes insane, and although having good food and fresh air never gets stronger. She becomes weaker, paler, and thinner gradually, until she is exhausted and very weak, and then a severe cough and spit comes on two months before she dies. Can any one doubt that in this case the insanity was contemporaneous in its appearance with the preliminary symptoms of tuberculosis, that the ordinary symptoms of the latter disease were obscured by the state of the brain, and that it was the tuberculosis, and not the insanity, that kept the patient thin and weak bodily? And do not the mental symptoms resemble in some degree those of an exhausted man whose brain has been starved of a sufficient supply of nourishment by a disabled stomach, an exhaustive discharge, or unsound lungs?

The following is an example of phthisical insanity beginning as monomania of suspicion.

J. O., æt. 31, a joiner. Father had been insane. Had led a dissipated life at times. Had always made his living at his trade. Was married, and had a family. The first symptoms of insanity were noticed more than a year ago, and he was then sent to an asylum, but, having apparently quite recovered, he was discharged. He was never quite well after this, however. He was unsettled, would not work at his trade with any one master for more than a few weeks at a time. He accused his wife of poisoning him, of conspiring against him, and of getting her relations also to plot against his life. His having been in an asylum at all he attributed entirely to their desire to get rid of him for their own purposes.

On admission into the Asylum he was generally quiet, reserved, and suspicious in look and manner, without showing much suspicion in his words. He was a man in average health, with a fair complexion, dark brown hair, and a more than usually intelligent face. He was very reticent about his delusions.

For some time after admission he wrought in the joiner's shop, but then began to fancy that his working there kept him in the Asylum, and refused to work any longer. He became more unreserved in his expressions of dislike and suspicion of his wife and her relations. He might often be seen to exchange his own dish for that of his next neighbour at meals, when he could do so without attracting much attention. He looked as if he "knew all about it" when asked about this proceeding, but would give no explanation of it. He evidently had strong prejudices against the head male attendant, and shook his head and laughed, and said, "You know very well," when asked why he disliked this man. At one time he became so well that his discharge from the Asylum was contemplated.

He had not been in the Asylum six months till he had slight hæmoptysis, and when his chest was examined the presence of tubercular disease was indicated by dulness on

percussion, and crepitation on auscultation at the apices of both lungs. He said, however, that he had often, before he came into the Asylum, spat blood. Shortly afterwards his condition was the following:—

A year after admission he was attacked with a cough and spit, and his difficulty of breathing became increased, and he was no longer asked to do any work. He got much worse mentally immediately after he was allowed to be quite idle. He could never be induced to take any kind of medicine for more than a day or two, and the extra diet and stimulants ordered for him were almost forced down his throat. The lung disease advanced rapidly. He became worse every week, while his suspicions and irritability became the cause of more and more misery to him. He gasped reproaches against the medical officer, as he sat coughing and breathless, for giving him the medicines intended to relieve him. Everything that was done for him he imagined to be for a sinister purpose, everyone who was kind to him he suspected of being an enemy, and all the symptoms of his disease he believed to be caused by his food or medicine. All his symptoms were as severe, when they once had fairly commenced, as in ordinary cases of phthisis among the sane.

To the last he retained his delusions unchanged. He died within eighteen months from the time of his admission. He was much exhausted, but not quite emaciated when he died.

Post-mortem Examination.—The brain was on the whole almost normal, except that the arachnoid was very milky, and the pia mater infiltrated with opaque serum, while the lining membranes of the ventricles were thickened and, in the anterior part of the lateral ventricles, covered with small granulations.

The lungs were both almost entirely infiltrated with tubercle. This tubercle was very hard, however, except in some softened spots. It was intermixed with the fibrous pneumonic lung, and, as was seen from the appearance of some of the vomicæ, as well as the consolidated fibrous lung,

the organ had been affected for a long time. The cavities and the densest parts of the tubercular deposit in both lungs were at the bases. There was no ulceration of the cæcum or colon.

This is a good example of those cases of monomania of suspicion, almost all of whom, according to my statistics, die of tuberculosis. The insanity was strongly hereditary.

The Relationship of Phthisis and Insanity.—Such are the main and typical features of phthisical insanity, and the foregoing are good examples of the disease. Certain general questions arise in regard to it for answer. Are all cases where we have phthisis among the insane apt to be of the mental type I have described? I think chiefly those who have had the well-known bodily symptoms of the pre-tubercular stage of phthisis. The most marked cases are those with a hereditary tendency to both phthisis and to insanity, or to the neuroses. It is surprising how often both diseases occur in different members of the same family. No physician in extensive practice but has met with very many such families. They are too frequent to be a mere coincidence. The constitutional weakness which tends to end in phthisis is, I have no doubt, akin in some degree, under some conditions, to that which tends to end in insanity. If one function of the brain is to govern the trophic processes of the body, and if that organ is strongly predisposed to go wrong in its mental functions in any case, it stands to reason that the law of the solidarity of action of the whole organ will come in, and that the nutritive processes will often be affected also in that person, and the recuperative and resistive power lessened. Daily experience among the insane shows us that this is so. As I said when speaking of the nature and treatment of melancholia, thinness is its bodily essence and almost constant accompaniment, and fattening its natural cure. So in regard to that special tendency to depraved or weakened trophic energy that speedily tends towards lung disease: if it is not cured it affects the nutrition of the brain, and the

result is phthisical insanity. Ascertainable hereditary predisposition to insanity exists in 7 per cent. more of the cases of phthisical insanity than in the insane generally.

Which disease begins first?—The insanity in most cases, undoubtedly. In some instances it exists several years before any discoverable lung trouble appears, just as there are many persons who have all the premonitory symptoms of phthisis long before the lungs are provably affected. I am not now entering into the question of the different forms of phthisis, or the modes in which the lungs are affected, or into the specific germ theory of tubercle. By the phthisis I speak of, I mean that typical form where there has been a marked constitutional tendency to malnutrition and lung disease,—that form, in short, which is usually hereditary, and always has far more symptoms than the mere lung disease to characterise it. The mode and time at which the lungs are affected by actual disease are accidents due to special circumstances, such as exposure to cold or to infection by bacilli.

In regard to the question whether insanity is not sometimes cured by the advent of lung disease, I confess I have never seen any real instance of it. I have seen many cases where patients brightened up, and were less melancholic and far less torpid after the temperature rose through aggravation of lung disease, and I have seen this occur repeatedly in the same case as the inflammatory process became active. But the improvement was only apparent, and was always transitory. It simply resulted from the increased temperature and more active circulation in the brain. Any disease that produces those conditions will have the same effect.

Phthisical-mindedness.—A very interesting question arises as to the effect of phthisis on the mental condition of sane persons. There is the universally recognised *spes phthisica*, and there is often also a mental brilliancy, short and fitful like the light of an ill-supplied lamp, and there are delirious, lethargic, and confused times, in different cases. In very many there is a fancifulness, a causeless changing from hope to

despondency, an incapacity for continuous thought, that seem to characterise this disease more than other chronic ailments. Doctors do not see these things so much, for at their visit the patients pick themselves up mentally; but ask nurses and relatives who are with such persons all the time, and they will tell you of the many small mental peculiarities of sane phthisical patients.

Statistics.—In order to exhibit the results of my experience in regard to phthisical insanity for the nine years 1874–82 inclusive, in a statistical form, I have gone carefully through the Case-Books of the Royal Edinburgh Asylum. Each case was diagnosed as to its clinical mental type within the year of its admission. This is perhaps too soon in this form of insanity, for, as I mentioned, some of the patients have a regular maniacal or melancholic attack to begin with, of short duration. The general result was this:—During those nine years there have been 3145 admissions. Of those, 85 have been diagnosed as phthisical insanity. This is 2·7 per cent. of the cases admitted. Following out these 85 cases, I find that 26 have been discharged recovered in mind. This is a recovery rate of 30 per cent. The recovery rate in the Asylum during the same period has been 46 per cent. This would show, supposing my diagnosis to have been correct, that cases of phthisical insanity recover, but in much less proportion than the average of patients sent to the Asylum, which include, it must be remembered, many general paralytics, paralytics, dements, and other cases hopeless from the beginning. The recovery rate among the patients admitted with no recognisable organic brain disease, and who had been less than a year insane before admission, was about 70 per cent. We may say, therefore, that the cases diagnosed as phthisical insanity recover in much less than half the proportion of cases of insanity uncomplicated with brain disease. In order that this proportion of phthisical insanity should recover, special treatment—dietetic, moral, and medicinal—is required to combat the depraved general and brain nutrition present.

I next inquired into the death-rate from tubercular complaints among the 85 phthisically insane patients. Up to this time 18 have died of phthisis, but it must be taken into account that in addition to the 26 who recovered there were 32 cases removed from the institution not recovered mentally, some of these being taken home to be nursed by their relations during their last illness—to die, in short. But more than the 18 will die of phthisis, for those admitted in the recent years have not yet had time for the complaint to develop, and some of them are now phthisical. The general result is that 18 out of the 27 who were not recovered or removed have already died of phthisis.

I next examined into the general statistics of phthisis in the institution, quite apart from phthisical insanity, for the same period of nine years. Eighty-three cases died of this disease in that time. There having been altogether 613 deaths in the time, this was at the rate of 13·5 per cent., or one in seven. Of all the deaths from phthisis, therefore, 21·7 per cent., or just over one in five, had been originally diagnosed as phthisical insanity. Looking at the patients suffering from the other clinical forms of insanity who died of phthisis, none of them approach in number the phthisical insanity. Seven cases of epileptic insanity died of phthisis and seven cases of general paralysis—though the number of this disease who died of phthisis I think is much more than the average—and five cases of adolescent insanity. Beyond these no special variety was found in the phthisical list.

In going over those patients who had died of phthisis I had occasionally an opportunity of seeing a clinical fact in regard to the effect of the development of phthisis on a previously existing insanity of long duration. In such patients it had the effect of producing a mental condition similar to the symptoms of phthisical insanity, they not having laboured under such mental symptoms before. Such patients became suspicious, sullen, irritable, and unsocial, some of them being also melancholic. One young man, J. P., who had been a

cheerful, active fellow, sociable, constantly playing the piano and singing, became moody, suspicious, impulsive, and irritable just before his chest was found to be affected, and while he was getting thin, not taking his food, and looking ill.

The certainty which now exists that tuberculosis is always due to infection by its specific bacillus does not in any way alter my facts and conclusions as to the connection of phthisis and insanity, and the existence of a specific form of insanity that may properly be called phthisical. For all pathologists agree that it is not the presence of the specific bacillus alone, for it must be present more or less everywhere at times, but the condition of the organism that determines whether the bacilli find a fitting nidus for their propagation; and the evil results to the organism of infection, are proved to arise from the ptomaines generated by the microbes, and not, strictly speaking, from the microbes themselves. These poisonous ptomaines circulating in the blood and reaching the brain cortex will be likely to disturb its action, especially in cases where there is an inherited tendency towards insanity, or towards neurotic diseases.

There is another element to be taken into consideration in the question of the connection between tuberculosis and insanity. It is this. To a considerable extent they are both very apt to attack the organism during the period of development. Now it may be taken as a law which is of universal application that "any tissue or organ that is abnormally non-resistive to disease may be considered not to have attained maturity—being in a condition of non-development, or arrested development—or to have undergone retrogression, temporary or permanent."[1] Tuberculosis in all its forms is much more common before the age of 25, which may be taken as, on an average, the age of completed development, and, as we shall see, there is a very important and frequent form of insanity—adolescent insanity—which coincides, in regard to the age it occurs, with pulmonary consumption, *i.e.*, they both occur most frequently between the ages of 20 and 25.

[1] *The Neuroses of Development*, by the author, p. 5.

LECTURE XIV.

UTERINE OR AMENORRHŒAL INSANITY.

Disorders of menstruation and their relationship to insanity, two kinds of insanity resulting—Acute Mania and Melancholia—Symptom or cause?

Psychology of Menstruation.—No doubt the influence of woman's great function of menstruation is considerable on her normal mentalisation. It has a psychology of its own, of which the main features generally are a slight irritability or tendency towards lack of mental inhibition just before the process commences each month, a slight diminution of energy or tendency to mental slowness and depression during the first day or two of its continuance, and a very considerable excess of energising power and susceptibility of feeling during the first week or ten days after it has entirely ceased, the last phase being coincident with woman's period of highest conceptive power and keenest generative nisus. As is well known to all physicians, many purely nervous derangements and diseases, such as neuralgia, migraine, epilepsy, and chorea, are apt to be aggravated at the menstrual periods or to begin then. There are often perversions of the great instincts and appetites then. In some women the social instincts are then partly suspended, and in others there are perversions of the appetites for food and drink. Dr Halliday Croom has kindly given me the notes of two such cases. One young lady patient of his at every menstrual period pulls out and eats the bristles of the hair-brushes in her own room, and sometimes goes into other rooms for more brushes for the same purpose. He has another lady patient, married, æt. 36, who for fifteen years has eaten,

at each menstrual period, salt, dry oatmeal, and bits of sponge, and has been none the worse for this. I have met with—and what physician has not?—cases of women who had intense cravings for stimulants and narcotics at each menstrual period, and indulged those cravings, to their intense disgust and regret afterwards. Dr Croom gives me the notes of a case where the craving was for malt liquors only.

Relationship to Insanity.—The regular normal performance of the reproductive functions is of the highest importance to the mental soundness of the female. Disturbed menstruation is a constant danger to the mental stability of some women; nay, the occurrence of normal menstruation is attended with some risk in many unstable brains. The actual outbreak of mental disease, or of its worst paroxysms, is coincident with the menstrual period in a very large number of women indeed. It does not follow from this, of course, that the menstruation caused the insanity in all such cases. The constant difficulty the physician has is to know whether the disordered or suspended menstruation is a cause or a symptom. Nearly all the acute varieties of insanity tend to disturb or suspend menstruation in women while the acute symptoms last. I find that nurses on the insane do not expect menstruation to be regular, if present at all, in cases of acute mania or of intensely excited melancholia. I also find that among the women patients in an asylum, taking them throughout, chronic and acute, the occurrence of menstruation is apt to cause an aggravation of the morbid mental symptoms present. The melancholics are more depressed, the maniacal more restless, the delusional more under the influence of their delusions in their conduct; those subject to hallucinations have them more intensely, the impulsive cases are more uncontrollable, the cases of stupor more stupid, and the demented tend to be excited. In the chronic insane, whose home the asylum is, and its regulations and routine their rules of life, we frequently find the menstrual period a time when their subjection to the asylum

discipline is not so absolute as usual, and their conformity to the ways of its daily life is not so unvarying. Of course there are a great many exceptions to this in the chronic insanity of women to whom the menstrual period makes no difference whatever. Those are usually patients affected by quiet mild dementia, who work hard and are in good bodily health. At times we see special directions taken by those menstrual aggravations of mental disease, such as an accentuation of the emotional perversions that exist, an excitation of the amatory feelings towards the opposite sex, or a feeling of sexual repulsion, a stimulation of the habit of masturbation, or the occurrence of stupor and confusion in the whole of the mental processes. Stupor is exceedingly apt to occur in insane young women during adolescence about their menstrual times. I have now a patient, J. Q., of 19, usually a bright active girl, who, for about a week or ten days at her menstrual periods, becomes confused, stupid, and depressed—her face and whole muscular movements showing an extreme hebetude and slowness. Some few melancholic patients get maniacal at the menstrual periods; and I have seen a case of acute mania cease to be excited and become depressed and fearful during menstruation.

Taking the mass of the more chronic and quiet cases of insanity, I find that menstruation is just about as regular as to time, and as normal in the amount of discharge, as among a similar number of average sane women. A very considerable number of female lunatics have the delusion that they are occasionally ravished by men at night, and in such cases this fancy is usually more intense after menstruation.

But apart from those general effects on all kinds of existing mental disease of disordered or suspended menstruation, insanity in some few cases actually results *de novo* from this as an exciting or predisposing cause. Those cases may be conveniently termed uterine or amenorrhœal insanity. Most of them, two-thirds at least, are melancholic in character, the

mental symptoms following the amenorrhœa, and passing away when regular menstruation returns.

The following is a typical case of amenorrhœal insanity:— J. R., æt. 20, of a neurotic but not insane heredity. Comes of an "excitable" family. Had gone from a country district and farm work to domestic service in a city, where, after a year or two, she fell off in general health, and ceased to menstruate. She at once became depressed, took morbid and distressing views of religion, was forgetful, confused, and sleepless, and lost her appetite. She wept without cause; was very obstinate, misinterpreting the object of our giving her medicine, making her work, walk, and keep herself tidy. She said she should be out of the world and was not fit to live, but never attempted suicide. She was ordered, and made to take, iron and aloes, with much fresh air and fattening diet. She got worse at first, and hallucinations of hearing developed. She distinctly heard voices telling her she was the worst person alive. She would have refused food had she been allowed to do so. In about two months she began to improve in body and mind, especially in bodily looks and weight. For three months longer she remained depressed, and then menstruated after a series of hot baths and mustard to her feet. She brightened up from the first day of menstruation as if a cloud had been lifted off her mind, and she has kept well since.

In such a case I do not think it was the amenorrhœa alone which caused the melancholia. Both were in reality the result of a running down in health and vitality from a change in the conditions of life, but no doubt the mental symptoms were aggravated by the suspended menstrual function. I do not think the melancholia would have been cured by a restoration of menstruation, had that been possible, before the blood had become richer and the nutrition improved. In fact, I have seen the coming on of the menses under those circumstances aggravate the mental symptoms, the case assuming during such menstruation a maniacal form.

The treatment of such cases should therefore be directed at first towards improving the general health more than towards restoring menstruation merely, at all events until the nutrition of the body is improved. After that the usual means for restoring the menstrual function should be resorted to, and when they are successful, or when, as most frequently happens, nature restores the function, the mental improvement is sometimes as marked and immediate as in J. R.'s case. It will be observed that some amount of improvement took place in her mental state as the bodily nutrition improved before menstruation returned.

The melancholic cases, of which this of J. R. is the type, nearly all recover, in my experience. Out of twenty of very typical form which we have had in the Royal Asylum in the past nine years, eighteen have recovered.

About one-third of the amenorrhœal cases were maniacal, with no melancholic tendency. Such cases were by no means so clearly connected with the absent menstruation as even the melancholic ones, nor did they show the same tendency to recover in mind coincidently with its restoration. In fact, I was by no means so sure of the same kind of direct connection between the amenorrhœa and the mental symptoms in most of them as in the melancholic cases.

Sudden Suppression of Menstruation.—It is commonly supposed that the sudden suppression of menstruation in a young, full-blooded, healthy woman of nervous heredity, through chill or shock, is very liable to cause an outburst of acute delirious mania. Some authors speak of this as if it were one of the common causes of insanity. No doubt it occurs, but I have not met with more than a few cases in all my experience. One was that of J. S., a girl of 18, stout, florid, and healthy, who got wet through and chilled while menstruating. The flow suddenly stopped, and at once a fearful headache came on, with maniacal delirium, a temperature of 103°, sleeplessness, and very great violence. A hot bath, with cold to the head, and with enormous doses

of bromide of potassium, borax, and ammoniated tincture of valerian, frequently repeated, had the effect of diminishing the delirium and reducing the temperature. A condition of semi-stupor and confusion, inactivity, and listlessness succeeded, and lasted for two months, when the usual mental health was regained, but it was several months before menstruation was restored. I would say that stupor is a more common mental result of suppressed menstruation in young women with a nervous heredity than acute mania.

OVARIAN INSANITY ("*OLD MAID'S INSANITY*").

Delusions of patients often tinctured by diseases or disordered function ovaries and uterus—"Old Maid's Insanity."

There is a somewhat ludicrous form of insanity that Dr Skae called "Ovarian," or, more familiarly and more correctly, I think, "Old Maid's Insanity." There is really no definite proof that the ovaries are either disturbed in function or diseased in structure in those cases, but it consists no doubt of a morbid transformation of the normal affectiveness of woman towards the opposite sex. The disease usually occurs in unprepossessing old maids, often of a religious life, who have been severely virtuous in thought, word, and deed, and on whom, nature, just before or after the climacteric, takes revenge for too absolute a repression of all the manifestations of sex, by arousing a grotesque and baseless passion for some casual acquaintance of the other sex whom the victim believes to be deeply in love with her, dying to marry her, or aflame with sexual passion towards her, or who has actually ravished her after having given her chloroform. Usually her clergyman is the subject of this false belief. Out of ten such cases which I can recall, seven have had clergymen as their supposed wooers or seducers. In no

case was there the very slightest possible ground for the notion. In two cases the ladies had never even spoken to their supposed lovers. Certain gestures, or, as in one case, the contents of the agony columns of the newspapers, were sufficient proofs to them of their beliefs. The annoyance to which unfortunate men are subjected in this way is often extreme. Lately a lady, J. T., now a patient of mine, went to a grocer's shop and ordered her supply of groceries in the name of a clerical acquaintance, saying she was his wife, telling the shopman to send the bill to him, and this as the culmination of a series of weekly letters to him of forty pages each! He endeavoured to give an adequate expression to his feelings in a letter I received from him. I have known grave accusations made to ecclesiastical authorities, and the beginnings of most injurious *famas* started by such insane women. Such patients were all of them between 35 and 43, and the reverse of sensuous in appearance. Some of them were most estimable, but not attractive, ladies, whom it was impossible not to pity, the whole thing was so contrary to the tenor of their lives, and so like a trick played on that higher being, which they had always cultivated, by a lower and more animal nature which they had sedulously repressed. None of them altogether recovered from this sort of delusion, but in two of the cases, as they passed into the senile period, and after the climacteric, the notion became so theoretical that they almost ceased to allude to it.

HYSTERICAL INSANITY.

Insanity engrafted on Hysteria ; symptoms of both combined ; laughing ; crying ; incessant talking ; mock modesty ; sexual and erotic ideas ; imaginary ailments ; craving for notice ; masturbation ; dirty habits ; letter of hysterical maniac—Occurs in 1 per cent. of female cases of insanity ; 50 per cent. recover—*Treatment :* Tonics ; baths ; occupation ; moral treatment ; discipline ; anti-spasmodics ; bro-

mides ; attention to female health ; non-stimulating diet—Complications and combination of adolescent, hysterical and masturbational insanities.

Typical hysteria, pure and simple, always has a mental complication. The intellect, or the feelings, or the morals, are always affected along with the purely bodily functions. But these mental symptoms, not forming the chief features of the disease, or not being of such a nature as to make the patient irresponsible or unmanageable, were not till lately reckoned as being of the nature of technical insanity, at least among the rich. Among the poor, with no one to look after them, hysterical young women are often enough sent to asylums. And I have seen most admirable results from this. The principles of asylum life and treatment are the very best principles of treatment for hysteria. To put the patient under control, to give her no harmful sympathy, to make her work and walk out regularly, to improve her bodily health, are always very good for a hysterical girl. We have had three cases of almost typical hystero-epilepsy, with a suicidal tendency in two of them, and general unmanageability at home in the third, in addition to the purely motor and other symptoms, sent to this Asylum within the past few years, and I have not seen nor heard of any home or hospital treatment so effective as the asylum treatment proved to be in these girls.[1] But such patients are rare in asylums. The usual type of case classified as hysterical insanity consists of mania or melancholia in a young woman, with one or more of the following characteristics well marked, viz., a morbid ostentation of sexual and uterine symptoms, feigned bodily illness to attract attention and secure sympathy, marked erotic symptoms cloaked by something else, a morbid concentration of mind on the performance of the female functions, semi-volitional retention of urine, hysterical convulsions, a morbid waywardness, or ostentatious and real attempts at suicide.

[1] Two of these are recorded by Dr T. Inglis in the *Edinburgh Medical Journal*, December 1878.

The fasting girls, the girls with stigmata, those who see visions of the Saviour and the saints and receive special messages in that way, the girls who give birth to mice and frogs, some of those who fall into trances, and those who live on lime and hair, are all cases of this disease.

Hysterical symptoms are exceedingly apt to occur in the insanities of puberty and adolescence in women, and along with those symptoms the habit of masturbation is common. It is sometimes difficult, therefore, to know whether to classify such cases as adolescent, hysterical, or masturbational insanity. All one can do is to ascertain if the hysterical symptoms are the most marked and prominent features of the case before we call it hysterical insanity.

The following case of hysterical insanity fairly illustrates the general features of the disease.

J. U., æt. 21, of a nervous and excitable temperament; habits correct. An aunt epileptic. Had on one occasion at home a mild attack of what must have been subacute maniacal excitement. The cause of the present attack, which has lasted for four days, was a fright, which first produced ordinary hysterical symptoms, and then maniacal symptoms engrafted on them. She shouted and screamed, spoke of hearing God speaking to her, and would rush to the window to jump out. She imagined she was a most important person, attitudinised and did everything to attract attention to herself. Attention and sympathy were craved by her, and if she could not get them in one way she tried another. She refused her food, saying it was poisoned, but took it rather than be fed with the stomach-pump. She had menorrhagia, and was most minute and circumstantial in the details as to her female health. She was tried with hyoscyamine, valerian, and monobromide of camphor with apparent benefit; but I considered the greatest improvement was produced in her case by discipline, work, open-air exercise, tonics, and good plain food in abundance. She improved at first, and once or twice relapsed, but in two months she recovered and was discharged. I do

not like to keep hysterical cases too long in the Asylum after convalescence as a general rule, for they sometimes get too fond of the place, preferring the dances, amusements, and general liveliness of asylum life, even with its restrictions, to the humdrum and hard work of poor homes.

The following very characteristic letter of a maniacal hysterical girl, J. V., very well illustrates the train of thoughts in such a case:[1]—

"My Dear Mamma,—It is time that I leave to return home. I have been tremendously changed for the better. I think papa will be able to get me a commission under Garibaldi before long. There are three to whom I am specially indebted—one Mr C., the modeller, the other the doctor, a Eunuch, who modelled me at the fire, and attended on me and bathed me. He is, I am sure, a gentleman, a splendid doctor. Could not papa get him into a regiment abroad? And there is the nurse. Could not papa get him any situation away from Morningside Asylum where I am at present? I should like papa to come for me as soon as possible. Do you remember the verse, 'There are,' &c. (12th verse 19th chapter of Matthew). About Eunuchs? Then I beg to inform you that according to Scripture and my conscience, Jessy, your cook, is a man; and Janet, the mad devil, is a man; and D. and H., boys who can have children. Aunt I. is a man, and yourself also, both made of men, and I am a boy, made of Dr C. and Dr Z. Mrs T. is a man, made of men. They are very ignorant on this subject here; but as for me it is certain that at least the spirits have showed me, which Christ sent when I was under drugs; they showed me this. I have at times since I came here passed the shadow of death, and therefore am authorised to speak in opposition to all men and women, gentlemen and ladies who oppose me. I am, I can swear, as you want to know what sex I belong to, a mixture of a nymph and a half-man, half-woman, and a boy, and a dwarf, and a fairy. I know more than my fellow mortals, having expired eleven times before the time.—I am," &c.

Our statistics of hysterical insanity show a good proportion of recoveries. In the nine years 1874–82 there were 34 female patients so classified, and of those who were treated to the termination of their malady 60 per cent. recovered.

[1] "Morison Lectures" for 1873, by Drs Skae and Clouston, *Journal of Mental Science*, vol. xix. p. 500.

THE INSANITY OF MASTURBATION.

Habit of masturbation very injurious to boys of neurotic temperament —Masturbation as a symptom and complication of insanity—Characters of Insanity of Masturbation ; self-feeling ; introspection ; solitary habits ; perverted emotionalism ; depression ; vacillation ; cowardice ; suicidal feelings ; maniacal attacks ; impulsive acts of violence, ending in Dementia in 26 per cent. of the cases ; bodily signs ; pains in back ; pains in head ; ringing in ears ; palpitation, &c.—Forms 4·4 per cent. of all insanity—*Treatment :* Tonic, bracing; baths ; occupation ; muscular exercise ; no local means.

Mental Effects of Masturbation.—The unnatural gratification of the sexual appetite through masturbation, it must be admitted, is very common among boys and lads. Especially, we believe, among lads of the educated classes, brought together in the somewhat artificial if not unnatural life of our public schools, does it prevail. I believe that the more healthy and more stolid country lad, the son of the farm-labourer, is not so apt to indulge in this unnatural and disgusting practice as the son of the professional man, supposing each to be initiated in the same way. Boys are taught the habit, and begin to practise it, often long before they know or can know the real difference between sexual good and evil. But a healthily constituted lad in body, mind, and morals does not tend to come under its influence to any very hurtful extent. His natural organic repugnance to it strengthens as he grows up. If he is fortunate enough to have a home, or access to family life, his lower instincts are transformed and elevated into the normal social instincts, through the gratification of which they find a natural and pleasurable outlet.

But the habit of masturbation, in certain other cases, acquires a power that is dominating and destructive to body and mind. The causes of this are, either an innate morbid strength of the reproductive instinct, or much more frequently an innate weakness of the controlling faculties, or a lack of inherent brain stability, or an incapacity of organic

repugnance to what is unnatural. Such weaknesses are apt to occur in the children of neurotic families. From the beginning the habit is apt to take a deep hold of such youths, who practise it to the point of the exhaustion of all nervous energy. Even when this occurs, and when in a healthy subject satiety would have caused disinclination and incompetence, in the sort of youth to whom I refer, the practice is not stopped. The weaker and more nervous he gets the more he indulges in his evil habit, till the point of absolute break-down of body and mind is reached. It seems to get possession of him like an evil spirit, and to dull and paralyse all his better feelings and his natural instincts. The heredity and temperament are no doubt the true explanation of the opposing statements that are confidently made, on the one hand, that this habit seldom does much permanent harm, and, on the other, that it is the root of most of the evils of boyhood, and that it ruins the constitution for life of every one who has ever indulged much in it. Both statements are so far true of boys of different constitutions and heredity. It is somewhat like drinking to excess; many persons can do this at times without risk of dying the death of drunkards, but others cannot do so without that distinct risk. It is no doubt true that the restraint and management of the reproductive instinct give most youths much trouble, and, as medical men, the priests of the body and the teachers of the truths of medico-psychology and physiology, we can often help them by our counsel and our knowledge. Unfortunately our help is too seldom called in. We are about the only persons who can help a youth to strike the happy mean between blissful but dangerous ignorance and prurient suggestive knowledge. We are the only persons who can judge from the constitution of the particular individual how much he ought to know and what risk he runs.

Masturbation among the Insane. — As a complication and symptom of almost every form of existing insanity, the habit of masturbation is lamentably common. The

melancholic, the maniacal, and the demented patients are all subject to its indulgence. The religious ecstatics who have direct intercourse with the Almighty, and the suicidal melancholics who have committed crimes beyond redemption —many of such patients of both sexes are masturbators. In fact it is, as it might be expected to be, a common sign of the loss of self-control, which is the essence of mental disease. When practised to excess by the insane, it certainly tends to aggravate mental exaltation, to intensify depression, to produce stupor, to lead directly towards mental enfeeblement, and to make impulsive tendencies more violent. It counteracts the effects of treatment, it induces relapses, and in some cases prevents the recovery of otherwise curable cases. Those bad results are most frequently and clearly seen in the adolescent, hysterical, puerperal, epileptic, and congenital forms of insanity, and, curiously enough, are not always absent in the climacteric and senile forms. I have seen a senile melancholic of both sexes suffer intensely from the effects of the practice. In all these, however, it is one of many symptoms of mental disease. It is not the chief cause, nor is it the chief symptom present, and it does not colour the cases so as to give them any distinct mental features.

There is a special form of mental disease, however, in which masturbation is the chief cause of the malady; it is the chief symptom present, and it gives the whole case distinct features. This has been named the *insanity of masturbation*, and has several well-marked features. It comes on in youth; it generally begins by an exaggerated and morbid self-feeling, or by a shallow conceited introspection, or by a frothy and emotional religious condition, or by a restless and unsettled state, with foolish hatchings of philanthropic schemes. There is no continuity or force in any train of thought or course of action. Then comes a melancholic stage of solitary habits, disinclination for company, especially that of the other sex, irritability, variableness of mood, hypochondriacal brooding,

vacillation and perversion of feeling towards near relations. Suicide is often thought of, and oftener talked of, but masturbation makes most of its victims too cowardly to kill themselves. Then an acute attack follows, usually of a maniacal kind. This may end in recovery, or may run quickly into a dementia that is masturbational in character, being solitary, unsocial, and subject to impulses, sometimes homicidal,—a sort of masturbational hyperkinesia.

With these mental symptoms there are usually well-marked bodily signs of the disease. The patient is thin, pale, and pasty, with a cold clammy skin, a haggard face, and an eye that never looks straight at you. He has weakness in the back, pains in the head, palpitation of the heart, impaired sight, muscular relaxation, and sometimes spermatorrhœa. But for a complete record of the feelings and symptoms of the youthful masturbator one should rather go to those shameful quack advertisements put into the country newspapers than to medical books. They are there set forth at large, with just enough concealment to make them suggestive. That such abominable suggestions of evil should be allowed to be scattered broadcast into the families of decent people, is to me one of the standing marvels of our social life. They do and can do no good to anyone; they aggravate the miseries of those who are suffering from the minor effects of this vice by keeping them constantly before their minds; they suggest evil thoughts to those who might be free from them, and they fatten the vilest of mankind. I verily believe, and I speak from some experience, that there are about as many people made insane by these advertisements and the pamphlets sent out by the advertisers, as by the habit of masturbation itself.

No greater condemnation of the habit of masturbation can be imagined than the changed feelings towards the other sex which it produces. Nature there as elsewhere punishes the breaker of her laws. Such perversions of feeling are very interesting to the medico-psychologist. Instead of the true,

healthy pleasure, intense as it is natural, of social and family intercourse, there comes a self-conscious bashfulness, a painful conflict between desire and repugnance, a suspicious constraint, and a guilty avoidance. The evil to him who evil thinks is seldom more marked than in the case of the masturbator. Any method through which this habit could be lessened among our rising generation would certainly do great good; life would be elevated in a large degree, self-respect would be increased, social intercourse would be sweetened and its pleasures intensified; while the stings of self-accusation and remorse would be far fewer in after-life.

The ordinary type of masturbational insanity is illustrated in many of its chief features in this case.

J. W., æt. 22, a young man of a naturally cheerful and frank disposition and steady habits, and with a good family history so far as known. When an infant he was delicate, and was supposed to have been threatened with hydrocephalus, and he had convulsions during his first dentition. Those symptoms no doubt implied a neurotic heredity. Since then his health had been good up to his present malady. For years after puberty he indulged in the habit of masturbation to a great excess. He gradually fell off in looks and bodily vigour, and mentally he became changed. He got egotistical, hypochondriacal, changeable in his resolutions, fanciful and unsocial. Those symptoms did not come on all at once, but took years fully to develop. They seemed to follow a diminution of nervous tone and general bodily strength. At last the mental depression stood out from all the other mental symptoms. It was hypochondriacal in character. He thought his sexual organs were "all gone," that his chest was "falling in"; he complained of pains in his back and in his head, and that his back was "very weak." When he was about twenty-two he made several feeble ineffectual attempts to commit suicide, both by hanging and strangulation. He was then sent to the Asylum. He was pale, his muscles flabby, his skin moist and clammy, his tongue coated, his bowels

costive, and his expression depressed and furtive. He never could look one in the face. Masturbators seldom can; but do not put down every insane person who cannot look you in the face as necessarily a masturbator. His genital organs were loose and flabby, and his testicles tender. He says he suffers from spermatorrhœa, but has now no natural sexual desire. Yet his mind runs on the subject, and it is one of the great sources of his mental depression that he imagines he has lost his virility. He thought himself very weak indeed, and that he could not get better. He said he would like to put an end to himself, and yet would not like to do so. He was ordered compound cod-liver oil emulsion with hypophosphites, quinine, much milk diet, fresh air, cold sponging, and a little garden work. He was never done making attempts to strangle himself with his necktie. In about three months he was distinctly improved. His whole "tone" was better, of mind, general nervous action, and of nutrition. But he could scarcely be prevented from talking about himself and his ailments, imaginary and real. He wanted medical books to read about his case, and said he had bought and read all the quack literature on "nervous depression," &c., he could lay his hands on, which always made him worse. He ate and slept well, and, it was feared, continued his evil habit, but not to any great extent. In six months he had gained in weight, could employ himself more, and was much more cheerful. He was sent home half-cured, on the theory that he would there have more motives to rouse himself and go to work. That he did, and after a year he was pretty well.

Here is the extract from a very instructive letter to me from J. X., a lad of 22, *a masturbator, who for two years had been hypochondriacal and unsettled, and alternately elevated and depressed in mind:*—"If I had come like a man to the point, and told the doctors what was the real matter with me—but in fact I really did not know myself till some time ago. I have committed masturbation for some years back, and sometimes as often as three times a day. I am sure I cannot

explain myself nor give account of such conduct. Sometimes I felt so uneasy at my work that I would go to the W.C. to do it, and it seemed to give me ease, and then I would work like a hatter for a whole week till the sensation overpowered me again. I have been the most filthy scoundrel in existence. I did not know at that time what harm I was doing myself, although I knew I was doing something filthy and wrong, and many are the times I have made resolutions to put a stop to such conduct, and sometimes managed for a month, not more. Owing to my trade I fell in with lots of girls, but never cared much about speaking to them, owing, I believe, to me doing that filthy practice." He describes how he tried to have connection with a girl with whom he thought he had at last fallen in love, and that he failed, and that he was disgusted with himself and her. "This and other things, with my business not getting on, I was most determined to end my miserable career." He then described how he took laudanum, and how he felt afterwards. "I hope for my father's sake you will give me your advice, not for my sake, for I am not worth taking notice of. Some time ago, when I was wondering if there was any seed left in me at all, I commited masturbation, but had to do it for a considerable time, and after some did come it was dull in the colour and scanty, and instead of a pleasant sensation it pained me." After a month or two this lad's depression passed off, and as his bodily health improved he became excitable, restless, egotistical, and irritable. This lasted for a time, and he then appeared to get quite well in mind and body.

Early Masturbation.—I have known many instances of the habit of masturbation being taken to without any teaching, and in some cases at incredibly early ages. I have now a patient, J. Y., who was always nervous, diffident, unable to earn his own livelihood, tending to be depressed and suicidal at times, and egotistically irritable, conceited, and impracticable. At other times, every now and then, he got so depressed that he had to be sent into the Asylum, or came into

it of his own accord. This man has frequently assured me, when at his best mentally, that he acquired the habit when he was six years of age, that no one taught him, that almost ever since it has been his bane and curse, that he knew as well as anyone how wrong it was to practise it, and that it did him infinite harm in body and mind; and he said that at times his mind was filled with disgust at the filthy nature of the practice, and despair at the hold it had acquired over him. Yet, in spite of all this, he could not stop it, the morbid fascination over his mind was so powerful. He described it as like a fate that he must yield to, an involuntary act over which his will seemed to have no control, though the practice of it was at times painful and not pleasurable. Yet I have seen few cases in which suitable treatment, control, fresh air, hard work in the garden, and suitable food had so good an effect at first. After two or three months he became another man, lost to a great extent his hang-dog look, his depression, his suspicions, and his hypochondriacal notions, got fresher and fatter, and had less marked inclination towards his evil habits. But it unmanned him, and made him quite unfit for facing the world. So anxious was he to be cured, that he had himself castrated. This has stopped the tendency to masturbation, but mentally some depression and "nervousness" remain. He married after a time, and says he derived a sort of modified pleasure from sexual intercourse. But the depression became tinctured with suspicions, and then he got irritable, excited, and took to liquor when he could get it. He imagined his wife was unfaithful to him, and that his relatives were conspiring against him. With all that he became enormously fat. He had to be sent back to the Asylum, the castration having proved a failure, and his mental power now being enfeebled. He is, in fact, demented. I lately saw, in consultation with Dr Ronaldson, a girl of six who had become addicted to the habit, who did not know its nature, and who looked a sweet, innocent-like creature. She was getting pale and nervous, apparently under its evil influence. There

seemed to be some irritation at the orifice of the vulva, which had set up the habit. Local cleanliness and mild antiseptic lotions, the use of small doses of the bromide of soda, open-air exercise, amusements, and constant watching, with a pad between the knees at night, and a mild restraint of the hands to begin with, were adopted. She indulged in the habit chiefly when going asleep and when waking out of sleep. It seemed to give no pleasure that could be called sexual.

There is no doubt that the act of masturbation is often not only done involuntarily and contrary to every inclination of the will, especially just after awaking from sleep, but it may also be unconsciously done. I have seen it done in the unconscious period immediately after an epileptic fit; and in the unconscious stages of acute mania and excited melancholia it is very common.

Many of the cases do not recover. I have many patients in the Asylum, of whom this is a type:—K. A., æt. 37. Began to masturbate at 15, and has continued the practice to excess ever since. He became so insane as to require to be sent to the Asylum at 20, after a year or two of restless egotism and selfish hypochondriasis, varied by spurts of equally selfish emotional religionism at home. He at first could reason, read, and occupy himself a little, but as the habit has gone on his mental power has gradually weakened, his social instincts have become extinguished, his self-respect and all his sense of decency have become utterly lost. He is now a slouching, untidy-looking fellow, with a hang-dog look, who can never be got to look you in the face, who never reads or speaks to any one, cares nothing for his relatives, has no energy, looks pale, red-nosed, and pinched. And yet he is not quite demented in the ordinary sense. He is coherent, and you find his memory is not gone when you talk to him.

Treatment.—The general principles of treatment of masturbational insanity unquestionably are to brace up the youth bodily, mentally, and morally. In the first place the diet should be unstimulating and fattening. It is strange that the

physiological inductions of the old Catholic Church as to the dietetic management of the *nisus generativus* and its volitional control have been so neglected by modern physicians, founded as they were on the experiences of the terrific conflict with nature that was implied in the early Christian theory that sexual desire was more or less of the devil and should be eradicated and not merely regulated by all men who wished to attain a high religious ideal, and on the experiences of the later rule of priestly celibacy. My own belief is that the Catholic view of repression and eradication being, for the sake of argument, granted, almost every rule of the Church as to food and fasting, and every practice of the monastic orders, and every conventual regulation, is a correct physiological principle. Translated from religious into physiological language, they may be summed up thus:—Strengthen the power of inhibition, bodily and mental. Practise the habit of mental concentration and abstraction from certain lines of thought. Cultivate enthusiasm about ideals. Find ideal outlets for the affective and social faculties other than sexual choices. Sleep only under such conditions and so long as to recuperate lost energy and tissue, and not to accumulate energy that there might be a difficulty in getting rid of short of sexually. Eat only non-stimulating and fattening food, and that in moderation, with periodic abstentions to use up spare material in the body. Avoid flesh, as the incarnation of rampant, uncontrollable force, sexual and otherwise. Be much in the open air, and work hard. Finally, so fill up and systematise the time that none is left for day-dreaming.—Now, such are undoubtedly the proper rules with which to treat the habit of masturbation and its mental and bodily effects. If we add to those the medical means of cold baths, tonics, games, family life, and a course of bromide of potassium, our resources are pretty nearly exhausted. I would certainly avoid local treatment or mechanical appliances as a general rule. It is no doubt possible to make the organs of generation so sore that excitation of them becomes

impossible; and if the patient's imagination has disappeared, this rest from constant nervous exhaustion may be taken advantage of to feed him up and get him into habits of working, and into a comfortable dementia. That is a good thing, but it only applies, in my experience, to those whose mental power is already gone. For the masturbator whose mental energy still exists to some extent, or is only temporarily suspended, such mechanical expedients and obviators of present indulgence only concentrate the attention on the function, and cause desires that are intense in proportion to the present impossibility of gratifying them. Do not recommend marriage as a remedy. It is a most dangerous experiment. It is apt to be followed by sexual repugnance in a short time, and the last state is worse than the first, two persons' happiness being destroyed instead of one.

There have been forty-six cases that I have diagnosed as masturbational insanity sent to the Royal Edinburgh Asylum during the past nine years, and of these sixteen, or 35 per cent., have made good recoveries, doing their work in life well afterwards. Some of the cases I have been consulted about out of the Asylum, and some of those I have had under my care in it, are now occupying responsible positions and doing first-rate work in the world. Some are the fathers of families. There is no ground whatever for such an unfavourable prognosis in any case as I have known some medical men give, and there is no sort of ground for thinking there is any special risk of relapse, or any special form of nervousness, that will after recovery *necessarily* stick to a masturbator all his life. Eighteen more of the cases left the Asylum more or less improved, while twelve still remain there hopeless, incurable, and degraded.

Warning.—One warning I have to give before I have done with this disagreeable subject. It is this: not to believe all the melancholic patients who attribute their bad symptoms to the former practice of this vice in youth. This is a common self-accusation. In most instances it is a mere delusion, like

so many other melancholic delusions, founded on a morbid exaggeration of the consequences of departure from strict sexual rectitude. It just amounts to the same thing psychologically as that the loss of control over the temper and calling a friend a bad name ten years ago is an unpardonable sin, that not going to church on a certain Sunday will be punished by eternal damnation, or that a gonorrhœa in youth has so polluted the blood that all the offspring are diseased, and that death must ensue. The real significance of masturbation in each case must be carefully inquired into, and the facts ascertained before a conclusion as to its effects is formed.

LECTURE XV.

PUERPERAL INSANITY. LACTATIONAL INSANITY. THE INSANITY OF PREGNANCY.

Childbirth, nursing, and pregnancy are liable to act as the exciting causes of attacks of mental disease. In importance and frequency they stand in the order in which I have placed them. For many reasons it is especially necessary that the general practitioner of medicine should be well acquainted with those forms of insanity, for they all occur at a time when he is apt to be attending the patient, they can, under favourable circumstances, be treated at home in many individual cases, and it is well so to treat them when possible. They are all very curable forms of mental disease, and, when cured, they are not apt to leave any traces of mental weakness or obliquity behind. The patients can resume their work and place in the family and society, and be as if they had never been ill. The three forms differ in so many respects that I must take them separately.

The advantage and the practical necessity of classifying mental diseases in other ways than according to the mental symptoms present, are especially seen in these three forms of mental disease. To know that a case is one that has begun after recent childbirth is to know far more about it for treatment and for prognosis, than to know it as mania or melancholia. There is no experienced physician but will admit this.

PUERPERAL INSANITY.

Limited to that occurring six weeks after childbirth ; importance of this form ; forms 5 per cent. of the insanity among women ; occurs in 1 in 400 labours ; one-half of the cases occur in first week after delivery ; four-fifths within the second week ; most frequent in primiparæ ; in one-third of the cases difficult or complicated labour ; risk diminishes with each successive labour ; hereditary predisposition in about half the cases ; 72 per cent. of all the cases very acute in character ; the acutest form of clinical insanity—maniacal and melancholic forms ; 57 out of 73 cases maniacal ; suicidal impulse in one-third of the cases—*Symptoms :* Change of manner ; inattention ; carelessness about child ; danger to child's life ; incoherence ; mania ; eroticism ; feeble pulse ; clammy skin ; weak bodily state ; stoppage of lochia ; septic condition of womb ; general sepsis ; high temperature, and its significance ; recovery after T. of over 105° ; tenderness over womb—*Prognosis :* Good ; 75 per cent. recover completely ; 8 per cent. die—*Treatment :* Good nursing ; feeding often ; stimulants in large quantities ; sedatives ; asylum treatment depends on circumstances of patient ; counter-irritation over uterus ; antiseptic washes ; large doses of quinine.

I do not know any event than can occur in a family, short of death, that is so great a shock to all who have to do with it as for a new-made mother of a first-born child to become suddenly maniacal, and require to be sent to an asylum. One of the most joyous times of life is made full of fearful anxiety, and the strongest affection on earth is then often suddenly converted by disease into an antipathy : for the mother not only "forgets her sucking child," but often becomes dangerous to its life. And few things are more pleasant than to see the restoration of the mother back to all that makes her life worth having.

Frequency, Time, Cause.—Puerperal insanity is technically limited to the mental disease that occurs within the first six weeks after confinement. By far the majority of the cases, and by far the most acute and characteristic cases, occur within the first fortnight. It is a very common form of mental disease, for 5 per cent. of all the cases of insanity among

women are puerperal, and I think it is a low estimate that one in every 400 labours is followed by it. In one-half of the patients the disease begins within the first week after confinement, and in four-fifths of them within the first fortnight. In regard to the cause of the disease, therefore, it is definite and clear. The accompaniments of childbirth produce it. The great physiological cataclysm itself, the pains of labour, the mental excitement and stress, the maternal emotion, the exhaustion, the loss of blood, sepsis with the open blood-vessels liable to absorb every septic particle, the sudden diversion of the stream of vital energy from the womb to the mammæ, the reflex disturbances to the brain from the reproductive organs, these, together or separately, are the causes that, acting on an unstable brain hereditarily, set up one of the most violent mental storms that the physician has ever to treat.

Symptoms.—In a typical case the course is somewhat as follows. The disease comes on very suddenly in most cases. The mother looks self-absorbed and dull. She does not take such notice of the baby as is usual, or much interest in what is going on. She does not answer questions readily. She does not eat, and she does not sleep at night. Next morning she is restless. Her eyes are brilliant. She seems to have no sense of exhaustion. She expresses foolish fancies, such as that she is poisoned, that there is some one under the bed. She takes a violent dislike to the doctor, or the nurse or the child. She begins to chatter all the time, and her talk becomes less and less connected. She is erotic, joyous, scolding, and perfectly incoherent, all within a few hours. She gets violent and needs to be held in bed; impulsively and without set intent she attempts suicide, or tries to kill her baby, or to throw herself out of the window. She seems as if she had a supernatural strength. Yet when you feel her pulse it is weak and thready, her face looks haggard, her temperature has risen to 100° or more, her womb is tender on pressure over the abdomen, and she will not look at food. Her lochia have first

become somewhat offensive and then stopped. Her skin is moist and clammy. She soon ceases to know those about her, calls her friends by other names, and strangers by the names of her friends. Her lips and tongue show signs of getting dry. If she is poor or cannot get plenty of nursing or medical attendance, she must be sent to the nearest asylum, and the sooner the better, for she needs all that the asylum can do for her. She needs to be fed at once, *nolens volens*—by means of the rubber nose-tube if she will not take it otherwise—with plenty of milk and eggs, and soups, and wine, and this needs to be repeated every few hours. Let her alone and she dies. Narcotise her with morphia, and her secretions dry, her tongue gets furred and hard, and her antipathy to food is doubled. But nurse and feed her well by night and day, striking the happy mean between undue restraint and too great activity, get her out for a little in the open air after some days, and in a week she will show a little sign of mental coherence, in a fortnight her appetite will have returned, her pulse will be stronger, her temperature will have fallen to normal, and she will walk out comfortably without tearing her clothes or throwing herself about. In a month she will be knitting a stocking, and will know her friends when they come to see her. Within three months she is well—a joyous mother, in her right mind, clasping her child, the whole of the disturbed mental period seeming like a dream to her, that is very soon altogether forgotten in her new duties and delights.

Although puerperal insanity is more frequent in first than in subsequent confinements, yet it is common enough in the latter, and I have known a woman, K. B., who had six attacks of puerperal insanity, having one after the birth of each child she had, and she recovered from them all. But this is the exception. The woman that cannot have a baby without having also puerperal insanity, and who persists in having babies, usually remains more or less permanently affected after the third or fourth attack.

Predisposing Causes.—The ordinary causes of mental disease

contribute as predisposing causes towards puerperal insanity. Poverty and want of proper attendance during childbirth, and having to get out of bed and to work too soon, I have seen bring it on. The shame and mental distress usually attending the birth of illegitimate children make it twice as common then as after the birth of legitimate children. I have several times seen a sudden mental shock act as the proximate cause of the disease in women who seemed to be doing well in child-bed. I once saw the news of the death of the patient's father send a woman, in the second week after confinement, into acute mania within a few hours. But such moral or other causes are not at all necessary to produce the disease, over and above the puerperal condition. In by far the majority of the cases there is no other cause. It occurs in ladies with every comfort and attendance as well as among the poor.

Mode of Recovery.—Most of the recoveries from puerperal insanity are gradual ones. We do not commonly find those sudden wakenings up from an acute delirious condition into coherence, self-control, and sanity that we sometimes see in other forms of mental disease. That is, in my opinion, one of the reasons why the recoveries are apt to be complete and permanent. I do not like very sudden recoveries in any form of mental disease, because they are not so apt to be permanent, and they indicate an essentially unstable dynamical condition of the convolutions. I am never quite satisfied about the recovery of a puerperal case until the woman gets stout and strong, and until her menstruation has returned and become regular.

The following is a typical case of puerperal insanity of the acute but not septic or delirious kind:—K. C., æt. 19, a hard-working domestic servant, with no known heredity to the neuroses. Though she came of a "respectable" family, she had an illegitimate child born in the Maternity Hospital. Her labour was not specially severe, and she did well for three days. Then, without any new cause, she got dull and took no notice of her child or of anything else; in a few hours she began to laugh hysterically, then she got more excited, rest-

less, noisy, and talked incoherently about religious matters. She did not sleep, and in four days she had to be sent to the Asylum. On admission she was much excited and greatly exalted in mind. She mistook the identity of every one near her. She sung on at the pitch of her voice in a rhyming way, putting her delusions and conversation with herself into rhyme. Her ideas and currents of thought were always changing. She looked pale. Her pulse was weak, and her temperature was 98·2°. She did not sleep for the first week at all. She was restless, singing, loquacious, and delusional all that time. She was put on all sorts of very nourishing food, especially custards of milk and eggs, and she was taken out into the open air for a short time each day after the first two days. She began to sleep in a week, and after that slept regularly. She continued restless, good-natured, and talkative, destructive to her clothes at times, full of boisterous half-incoherent fun, and unable to settle to do any work for two months. She gained in weight all that time, eating well and spending much time in the open air. Then she began to work, was put to rough scrubbing and laundry work, so getting rid of her excessive muscular energy. In three months she was fattening, becoming quiet, and working hard. In four months after admission she was stout, sensible, and well in mind and body, menstruation having begun, and she was then sent back to her situation, which had been kept open for her in consideration of her previous good conduct.

Some of the very acute septic cases with a high temperature and most unfavourable symptoms make good recoveries, if proper treatment is adopted soon enough, as in this case:—

K. D., æt. 27. A married woman of correct habits, with no known heredity to insanity; her first child. Her labour was natural. Things went on well for a week, then without apparent cause she began to complain of headache and costiveness. She got restless and sleepless, then next day she became foolishly talkative and erotic, and neglected the child. The lochia and milk stopped. She refused food absolutely,

getting worse day by day, and becoming weaker fast. She wanted a razor to cut her throat, and threw a tumbler at her husband, but was not very suicidal nor dangerous. In two or three days she was absolutely delirious and incoherent, but was not sent to the Asylum for seven days after the mental symptoms appeared. On admission she was greatly excited, shut her eyes tightly, singing and swearing and using the most obscene language continuously. She seemed to imagine she was in hell and surrounded by devils at one time, and she had exalted fancies at other times. She did not sleep at night, and with the utmost difficulty was got to take some little liquid nourishment. Her temperature was found to be 100°. Her pulse was very thready, her skin clammy. She was constantly jerking and throwing her limbs about, her tongue tending to be dry, and her general bodily condition one of great exhaustion. She got 10 grains of chloral and slept three hours the first night. Next day she was fed with the nose-tube with a custard containing three eggs, one pint milk and cream, some strong beef-tea, 4 oz. port wine, and 5 grains quinine. This acted as a soporific, and she slept well most of the afternoon. After awaking she was less excited, but confused in mind. This mode of feeding was continued twice a day. On the fourth evening after admission her temperature was 103·8°, but mentally she seemed to have a lucid interval, being rational, and she then took her food. Some fœtid lochial discharge made its appearance at this time. Weak carbolic vaginal syringing was used. On the sixth day she became again acutely maniacal, with a morning temperature of 101·4°, an evening temperature of 102·8°, and she had to be fed with the tube. On the eighth day was sleepy and quiet, took her food, and after two days of confusion of mind got quite sane, and remained so, remembering nothing of what had taken place during her illness. I allowed her friends to remove her on the twenty-first day, she having a good home, where her bodily strength could be got up as well as in the Asylum, and she has kept well ever since.

No Relapses.—Puerperal insanity is that form of mental disease where we are least apt to have relapses after the patients have once fairly become convalescent; and I have less hesitation in letting relations remove them from the Asylum at an early period, if they have good homes and attendance, than in any other form. In this case of K. D. I looked on the feeding at once as having saved her life. The immediate sedative and soporific effect of filling the stomach with food and stimulants was most striking, and I very often see this. There is no doubt whatever in my mind that alcoholic stimulants along with food are of the utmost service in many cases of puerperal insanity, their good effects being more immediate in my opinion than in any other form of mental disease.

Home Treatment.—In the case of patients being attacked with puerperal insanity who have good homes, especially if they are in the outskirts of a town or in the country, and can get constant medical attendance and good trained nursing, they may be often treated at home. I lately attended a lady in consultation, K. E., who, within ten days after confinement, became sleepless and restless, took antipathies to her doctor, monthly nurse, and child, mistook the identities of all those about her, calling me by the name of an old friend, had a temperature of 101°, with slight uterine tenderness and absolute refusal of food, being also most troublesome and difficult to manage. I sent a first-rate mental nurse from the Asylum in addition to the ordinary nurse and servants, and she was fed, controlled, nursed, taken out, and got through her attack in about six weeks, just as well as if she had been sent to an asylum. But the strain and responsibility on the relations, attendants, and nurses were no doubt most severe. They were all nearly exhausted by the time the patient had recovered.

The following case had a melancholic character throughout, though acute, septic, and curable:—K. F., æt. 23. No heredity ascertained. Had been a strong, healthy young woman, and

had had one child previously eighteen months ago. This child took a convulsive attack within a week after her second confinement, and the fright and shock of this seemed at once to upset her mentally, for she was within a few hours afterwards incoherent and maniacal. She was put under chloroform, and got morphia in quantities, and was kept under the chloroform almost continuously for a week. This deadening of the brain functions did not cure the maniacal condition; whenever she awoke she was as bad as ever. But next week she was almost sensible. After that the acutely maniacal condition returned, and after a week of it she was sent to the Asylum. She was then intensely depressed, looking afraid of something going to happen to her, imagining that something was in the bed. Her memory was gone. She did not know her husband, and mistook the identity of the people about her. She had hallucinations of hearing. Her pulse was 120, feeble and intermittent. Her temperature 104·2°. Altogether she was very exhausted. She was fed hourly with custards and sherry in large quantity. On the second day after admission her temperature suddenly sank to 97·2° and her pulse to 78, and this was coincident with the appearance of a profuse bloody lochial discharge. Mentally she was also much improved, though not quite rational. Towards evening she became restless, and had the hallucinations of hearing again, though her temperature was only 98°. She did not sleep, and was very depressed and restless next day, saying she was a great prodigal and a sinner, but took food voluntarily, though needing forcing to take enough. The temperature never again rose above 100°. She frequently showed the morbid brain tendency of repeating a word or some of the syllables of it said in her hearing over and over again, *e.g.*, "Zachariah-iah-iah-iah—Zach-ire." She was well fed and nursed, and usually slept about three or four hours a night. In a week she was able to be taken out into the garden, and slept much better after this. In ten days had small abscesses forming

round one or two of her finger-nails. This "critical" symptom—not at all uncommon in cases of recent mania and melancholia — seemed to do her general brain condition good. She passed in a month into a quiet, lethargic, rather suspicious state, and somewhat depressed, but with no intense mental pain, and no delusions expressed. Then she got into a state that is very common before recovery in patients in asylums,—one of discontent, of increasing instant desire to "go home," inability to understand that anything has been wrong, or that further treatment away from home is required. I have ten times the trouble with my patients—and sometimes with their relatives—in this stage, for the chief symptoms of the disease have passed off, and the patients seem rational. She was dull and suspicious in the mornings, and quite well sometimes in the evenings. All this time she was gaining in flesh and colour and strength, walking much, drinking much milk, and being encouraged to employ herself in the house. In three months she was sent to our seaside house, and had sea air and sea bathing, both of which did her much good. By that time she had gained a stone in weight. In four months she menstruated for the first time, the last cloud of depression passed away, and she was sent home quite well.

The following is a typical case of puerperal insanity dying of septicæmia, or a case, properly, of puerperal fever with maniacal symptoms :—

K. G., æt. 23, of a cheerful disposition and good habits. Sister and aunt have been insane. Has been married between four and five years, and has had four children in that time, all born dead, all the labours being difficult on account of a deformed pelvis. Had been weak during all the last pregnancy, and had pains in the head for two months before delivery. Premature labour was induced about the seventh month, with the view of saving the child and making her labour more easy than the others had been. In a day or two after delivery she began to see faces on the wall, to think that the chairs were

alive, and that people were whispering slanders about her. She did not sleep, and would not take food. She got rapidly worse, becoming quite maniacal, delirious, and unmanageable. She imagined poison was put into her food, and wanted to rush away from home. On admission she exhibited a combination of intense excitement in paroxysms, during which she required three attendants to hold her in bed, with extreme prostration and weakness between. Her pulse was thready and 156, temperature 102°, respirations 60. There was an anxious look, with great pallor of countenance, when not excited. There was evidence of congestion of both lungs, with pneumonia at the bases. There was no evidence of tenderness on pressure over uterus. No lochial discharge. She was fed with brandy and custards on admission, and every hour thereafter, getting 10 grains of quinine every two hours for the first eight hours. In spite of all that could be done she sank on the sixth day, the temperature having kept up all the time to between 101·4° and 103·8°, the lung symptoms getting worse, and the intense delirious excitement coming on once or twice every day except the last.

On *post-mortem* examination I found the brain intensely congested, and the lungs pleuritic, very congested, and almost hepatised at bases. But the chief seat of disease was in and round the womb. There was a thin layer of pus on its peritoneal surface. There was a small abscess in the right ovary, which seemed to occupy the position of a recent corpus luteum. The uterus was large and flabby—about 6 inches by 3 inches—its substance on section containing much purulent matter all through it, but especially towards the mucous membrane in the fundus. The mucous membrane was thickened and covered with yellowish purulent matter, and some of the remains of the placenta were adherent. One of the uterine veins on the right side, for about 4 inches in its course towards the vena cava, was unusually enlarged, looking like a bit of very small intestine, its coat thickened, and its lumen filled with thick grumous pus.

It is difficult to say whether this was a case of "puerperal insanity" with septicæmia, or "puerperal fever" with maniacal delirium. I think the latter is the more correct description. It was, I think, evident from the *post-mortem* appearances that there was septicæmic puerperal fever from the beginning, and this, occurring in a weakened anæmic brain predisposed to insanity, no doubt produced the maniacal symptoms.

Summary of Treatment.—We must have in the first place good nursing, bodily and mental. Then every kind of liquid nourishment of the most stimulating and sustaining kind—soups, milk, eggs, and strong jellies at first. Alcoholic stimulants are essential, and often in large quantities in the worst cases—I have often given a bottle of sherry a day. Quinine is by far the best antipyretic. I have given it in doses of from 10 to 15 grains every three hours till the temperature fell. Paraldehyde or sulphonal are the best hypnotics to use. If poor send the patients to an asylum at once. If evidence of sepsis is present use anti-streptococcus serum. It is always advisable to use anti-septic vaginal douches. Sometimes counter-irritation over womb is useful.

Statistics.—I have gone carefully over the histories of all the puerperal cases that have been sent here during the past nine years. They were all under my own care, and the histories were taken on a uniform plan of my own by the assistant-physicians. There were seventy-five cases altogether counted as puerperal, but fifteen of these were either old cases not sent in for periods over a year, or the same cases admitted twice during the same attack. These I omitted as having no clinical value. The remaining sixty, on analysis and study of their characters and clinical symptoms and results, form a very instructive physician's lesson.

Age.—Looking at their ages, it seems as if the disease occurred in just about the frequency that ordinary confine-

ments occur at the same ages.[1] Forty-four of the cases had never been insane before.

Causation.—In addition to the puerperal state as the great exciting cause of the disease in those sixty cases, I found that there existed as a predisposing cause a heredity to insanity in twenty-two of the forty-nine cases in which this point could be ascertained, or 37 per cent. of the whole. No doubt heredity played a much more important part than this if the facts could have been accurately ascertained, but this is above the average of the ascertained heredity in our Asylum tables for the same nine years. Moral causes acting during the puerperal state were common, such as the deaths of children, desertion of husband, frights, &c. The incidence and importance of such causes of the disease are best shown by the fact that in thirteen, or 25 per cent., of the cases the children had been illegitimate. The average rate of illegitimacy in Edinburgh is about one-third of this. Severe *post-partum* hæmorrhage, or difficult or instrumental labours, had occurred in at least ten cases. But all these causes leave a considerable proportion of the cases where there was no apparent exciting cause but normal labour and its accompaniments.

Number of Confinements.—Looking next at the question of which confinement the disease most frequently followed, I find that twenty cases, or one-third of the whole, occurred after first confinements. This is of course out of all proportion to the number of first confinements in the population. The remaining two-thirds happened, some in each confinement up to the eighth. This merely confirms what was well known before, that *primiparæ* are most subject to the disease.

Time after Confinement.—Then as to the period of occurrence after confinement. In eighteen cases this was not pre-

[1] From 15 to 20 years of age in 3 cases.
,, 20 ,, 25 ,, ,, 16 ,,
,, 25 ,, 30 ,, ,, 20 ,,
,, 30 ,, 35 ,, ,, 9 ,,
,, 35 ,, 40 ,, ,, 12 ,,

cisely ascertained, but in nearly all these it was within the first fortnight. Of the remaining forty-two cases the disease began within the first week in twenty-one, and in eleven more within the second week, so that we may say that in 80 per cent. of the cases it began within the first fortnight. If that period is passed it is clear that the chief risk is over in a woman in childbed, the first week being by far the most liable to its invasion. At least half the cases occur then. Only one case of the sixty occurred after the twenty-eighth day.

Character very Acute.—The next point is very important clinically. Of the sixty cases no less than forty-three were very acute in character and symptoms, while seventeen only were mild and without acute symptoms. Twenty-nine of the forty-three acute cases were generally maniacal in character, and fourteen generally melancholic with motor excitement, some of each of these classes changing from one state to the other at times. In the mild cases the prevailing character was mental depression, fourteen of the seventeen being so. In at least eighteen of the acutely maniacal cases, the mania amounted to absolute delirium, with no power of attention and no coherence of speech whatever. I know of no clinical form of insanity that would yield so large a proportion of very acute cases. Puerperal insanity may therefore be regarded as the most acute of all forms.

Temperature.—The temperature of all cases on and after admission was taken.[1] It is very instructive to look at the column of highest temperatures in each case.

Of the sixty there were thirty-four cases under 99°, and therefore they cannot be said to be much above the average temperature of ordinary health, or at all events of the average

[1] From 96° to 97° in 3 cases.
,, 97° ,, 98° ,, 10 ,,
,, 98° ,, 99° ,, 21 ,,
,, 99° ,, 100° ,, 12 ,,
,, 100° ,, 101° ,, 2 ,,
From 101° to 102° in 3 cases.
,, 102° ,, 103° ,, 4 ,,
,, 103° ,, 104° ,, 3 ,,
,, 104° ,, 105° ,, 1 ,,
,, 105° ,, 106° ,, 1 ,,

temperature of the insane. But twenty-six cases, or 43 per cent. of the whole, were over this, and of these fourteen cases, or 23 per cent. of the whole, were over 100°. No other form of insanity shows this alarming result, for a temperature over 100° I look on with alarm in any form of mental disease. The most serious part of it is, as we shall see, that all the deaths occurred in the cases with a temperature over 100°. Yet to show that a high temperature, though alarming, is not necessarily prognostic of death, I find that of the five cases where it was over 103° three made excellent recoveries. I lately saw a case in private practice who recovered, and whose temperature had been over 105°. The causes of the high temperature differed in different cases. The chief causes were—(1) simple acute brain excitement; (2) inflammation of the womb and surroundings, in some cases septic, in others simple; (3) meningeal inflammation; (4) incidental causes, such as malaria, mammary abscess, &c.

Appetite.—The most common and one of the most important of all the symptoms present was the refusal of food—paralysis of appetite. In thirty cases, or 50 per cent., this was present. It could not be overcome but by the use of the stomach-pump or nose-tube in about ten cases. In a puerperal case refusing food I now use forcible feeding at once if food cannot be given in any other way. In no other kind of mental disease has the doctor's instructions to the nurse to be, "give much food and give it often." I am quite sure that many of the puerperal cases not septicæmic that die at home or in asylums die from want of early feeding. I give stimulants, too, in larger quantities with the food than in any other kind of insanity. I have seen the greatest and most evident good results from large doses of quinine as an antipyretic. In the case to which I have alluded, where the temperature was over 105°, every 10-grain dose of quinine was followed regularly by a fall of from 2° to 4° of temperature.

Individual Symptoms.—There were many other symptoms, mental and bodily, very common besides a high temperature.

Tenderness on pressure over the region of the womb was common, and whenever it is present, as well as in most other cases, I am in the habit of ordering carbolised warm water vaginal injections and slightly counter-irritating poultices over the abdomen, with, sometimes, blistering over the pubis. Local abscesses in the ankles, fingers, wrists, and body occurred in some cases. Muscular jactitation and subsultus occurred in some of the worst cases, but were not always followed by collapse. Œdema and albuminuria were present in two cases, and convulsions in one. Of the mental symptoms, one of the most important, from its great frequency, was the suicidal impulse. It was present in twenty-five cases, or 40 per cent. of the whole. It was present in an impulsive form in many of the maniacal as well as some of the melancholic cases. No medical man, therefore, in treating a case of puerperal insanity, but should keep in mind that the patient may attempt suicide, and he should warn the nurses and attendants of this.

The presence of hallucinations of the senses, especially of hearing, I was surprised to find so common. It occurred in at least one-third of the cases, and was often very persistent, as hallucinations of hearing are apt to be, after the other symptoms were passing off. But this did not indicate incurability, as is the case so often in chronic auditory hallucinations of alcoholic origin.

The patients in many cases passed from the acute stage into one of stupor, and in some this existed from the beginning. At one part or other of the case stupor was present in at least fifteen cases, or 25 per cent. It was connected, I fear, in some of them with the habit of masturbation, to which some puerperal cases are very subject. Neither the stupor nor the masturbation indicate incurability. One case in which both were the most prominent symptoms recovered.

Curability.—The last and most important point brought out in this study of these sixty puerperal mental cases is the great curability of the disease. Thirty-three cases were discharged

recovered, and seventeen were discharged much improved. Of the latter the prospects of complete recovery were very good. I actually knew they did complete their recovery in twelve cases. That is, forty-five cases out of the sixty recovered, which amounts to a recovery rate of 75 per cent. Most of the recoveries took place quickly. In three months from the beginning of the attack over one-half of the cases were well, and in six months 90 per cent. of those who recovered were well. But to prevent anything like loss of hope, I mention that one of the melancholic cases with stupor recovered after the disease had existed for four years. No recoveries from mental disease are generally better or more satisfactory than those from puerperal insanity. In some cases recovery was very rapid indeed after it began. In the cases where stupor existed, or supervened on acute insanity, the occurrence of menstruation seemed often to act as the exciting cause of recovery. I myself believe that this was mostly a coincidence, or rather I should put it that sanity was the mental, and menstruation a chief bodily symptom of the restoration of brain and body to their normal working. It is the proper mode of treatment, however, whenever a puerperal case gets strong in body and the weight becomes normal, to use every means to restore menstruation if it has not returned. Warm baths at night, mild shower baths in the morning, hip baths with mustard, aloes and iron pills, and borax at the time menstruation is expected, are all useful in addition to the general tonic and fresh air treatment. Menstruation returning before the general strength is improved is usually a bad thing, for it is apt to be attended with increased mental excitement, and is apt to become menorrhagic.

Looking at curability of the cases according to their characters of acuteness or mildness, and of mental exaltation or depression, I find that the forty-three acute cases recovered in the proportion of 81 per cent., and the seventeen mild cases in the proportion of only 62 per cent. But then it must be

kept in mind that the mild cases were longer in being sent into the Asylum, and, of the total number of mild puerperal cases occurring, the most intractable and prolonged would be the only ones sent into the Asylum; the rest would recover at home. Of the exalted and depressed cases—mania and melancholia—an almost equal proportion, that is 75 per cent., of each recovered.

Mortality.—Five of the sixty cases died, four of them within a month of the onset of the disease, and one within two months. This is a mortality of 8·3 per cent. of the cases. No cases are more difficult to get *post-mortem* examinations in than puerperal cases, and they were performed in only three of the five cases. The cause of death in one was found to be phthisis pulmonalis, under which the patient had laboured for long before her confinement, and which as usual advanced rapidly after parturition; in another it was septicæmia; and in the third simple maniacal exhaustion, without symptoms of septicæmia. There is no doubt, however, that the chief cause of death in puerperal cases that have been properly fed is septicæmia. They are, in fact, cases of combined puerperal fever and puerperal mania, the mania having more of the character of delirium than of ordinary insanity. It is curious that there was no history of preliminary chill in the septicæmia cases. As I said, I do not like the temperature to run up much above 100° in puerperal cases. Of the fourteen cases in which this took place, five died, or 35 per cent. I still less like to see muscular subsultus with a restless moving of the hands and twitching of the facial muscles. There may be septicæmia in a puerperal case with purulent peritonitis, metritis, and phlebitis, and yet the patient never complains of any local pain, and even on pressure there may be no uterine or peritoneal tenderness. Many of the cases with the worst symptoms, bodily and mental, made good recoveries.[1]

[1] These statistics may be usefully compared with and supplemented by Sir J. Batty Tuke's statistics, obtained from an analysis of cases in

LACTATIONAL INSANITY.

Mostly an anæmic insanity; occurs over six weeks after confinement, or after prolonged lactation; risk greatest after several children; usually mental symptoms Melancholia at some period; some cases Mania; premonitory symptoms usually present; headaches; *tinnitus aurium;* flashes of light; irritability; precordial anxiety—Forms 4 per cent. of insanity in females; rare among richer classes—*Prognosis:* Good; 77 per cent. recover; duration longer than Puerperal Insanity—*Treatment:* Stop nursing; tonic and supporting.

The poor are more liable to insanity while nursing children than the rich, both being equally subject to puerperal insanity. This is as might be expected. If the wife of a labourer has had ten children and nursed them all, if she has during all the years those ten pregnancies and childbirths and nursings have been going on had to work hard, if she has had to struggle with poverty and insufficient necessaries of life in addition to this continuous reproductive struggle and family worries, if in addition to all this she has inherited a tendency to mental disease, no physiologist or physician can wonder if she should become insane during the tenth nursing. Indeed, the wonder is that any organism could possibly have survived in body or brain such a terrible strain and output of energy in all directions. Such a woman often enough becomes insane during a nursing long before the tenth. An organic sense of duty and a stern physiological necessity among poor women compel them to nurse their offspring. What else can they do? It is well for the offspring, but the neurotic mother often enough dies, or is upset in body or brain in the attempt.

Symptoms.—A typical case of lactational insanity is one

this Asylum, in the *Edinburgh Medical Journal* for May 1865; and with those of Dr Campbell Clark's papers in the *Lancet*, vol. ii., 1883, and in the *Jour. of Mental Science*, July 1887; with those of Dr M. Macleod's paper in the *Brit. Med. Jour.* for August 7, 1886; and with those of Dr Wiglesworth's paper in the *Liverpool Medico-Chirurg. Jour.*, 1886, which all contain important additions to our knowledge of the subject.

occurring in the case of a poor woman who has had several children, and has nursed the last for several months, who has got pale and thin in the process, and has become subject to headaches, noises in her ears, giddiness, flashes of light before her eyes, lassitude and nervous irritability, in fact to the usual symptoms of general bloodlessness and brain anæmia. She then gets depressed in mind, her sleep leaves her, her self-control is lost, and she becomes either lethargic and stupid or suicidal, with delusions that her husband and neighbours are against her, thereby, poor woman, merely misinterpreting her sensations of mental pain and distress. She had little organic strength for her pregnancy, still less for her delivery, and it has quite broken down in her nursing. To such a woman the organic delight of suckling her infant, for which the maternal nature craves and is satisfied by the process, becomes an irritation, an excitement, and an exhaustion. But such a typical case, if taken in time, and if nursing is stopped and rest is given, with good nourishing food, malt liquors, iron, cod-liver oil, and fresh air, at once begins to amend, sleeps, acquires self-control, ceases to imagine things that have no objective existence, puts on flesh, begins to employ herself, gets cheerful, and is quite well and strong in three months, her blood containing many more blood corpuscles than it had when treatment was begun, and the re-nourished brain resuming all its normal functions in a normal way. But cases of lactational insanity vary greatly in form, degree of mental disturbance, and duration of attack. It must be admitted that they do not follow this one type. They are nearly all melancholic at some period of the attack. They nearly all suffer from premonitory neuroses of sensation in the shape of headaches, lassitude, neuralgia, feelings of sinking at pit of stomach, or some of the other signs of anæmia and ill-nourishment. They are a very curable class if put under proper treatment in proper time.

The following case is an almost typical one, except that the first part of the asylum stage of it was more acute than usual :—

K. J., æt. 40, the wife of a plumber who earned when in full work 28s. a week, has had seven children in sixteen years, and nursed each about fifteen months. There is no known heredity to insanity. She nursed the last child for twelve months, and of course had to do her family duties meanwhile. Her first symptoms were great depression and want of energy. She would sit for hours doing nothing, saying nothing, and taking no notice of anything. Her brain seemed to have been exhausted in its power to energise mentally. Then she began to be restless and sleepless, and her head felt sore and queer. Soon she became delusional, fancying she saw friends in the street who were in the colonies. She was sent at first to the Royal Infirmary, but proving unmanageable there she was sent here. On admission she was markedly depressed, and the mental working of her brain was enfeebled in such a way that she would begin a sentence in answer to a question, and would stop in the middle, her volitional power having run short apparently. She rambled in speech and mistook the identity of persons round her. She had the delusion that she was to be burned at the stake. She was thin, pale, muscularly feeble, lacking in energy, with blunted sensibility. Her special senses were also impaired, pulse small and weak, temperature 98·8°. After admission she was sleepless, restless, and acutely excited for a week. Then she became more quiet, with short intervals of almost sanity, but with impulsive action. Sitting quietly sewing in a room with others, she would suddenly drop on her knees and pray aloud. Was put on extra diet, with porter and quinine and iron. She always got worse and more delusional in the evening, this fact probably indicating that by that time her brain power was getting exhausted. But she steadily picked up in flesh and strength, mental and bodily, and in ten months was discharged almost recovered, having gained 24 lbs. in weight, and looking fresh and healthy. What will happen if she has more children, and nurses each of them fifteen months, can easily be conjectured. I have met with many cases who were sober

women when in good health, taking to drink when the depression first came on.

Treatment.—The treatment of lactational insanity is simple and physiological. Stop the nursing, give nourishment in abundance with some malt liquor, change the scene, free the patient from family cares for a time, give quinine, iron, cod-liver oil, and tonics generally. The suicidal tendency must be thought of and guarded against if present, as it is in a very large proportion of the cases.

Statistics.—A survey of my nine years' clinical experience in the Royal Edinburgh Asylum, 1874–82, in regard to lactational insanity is instructive. We have had altogether fifty-two cases that I classified as lactational. But some of these were old cases of the disease transferred from other asylums, or readmitted, and these I shall take no notice of. Their study would lead to no good clinical results, and would merely tend to confusion. Forty of the cases were admitted labouring under recent lactational insanity, and of these only I shall speak.

Character.—As classified on admission, twenty-one of these were cases of mania and nineteen of them of melancholia. Only about half of these twenty-one cases of mania had mental exaltation as their predominant feature throughout their whole course, the others beginning with marked melancholic symptoms or ending with them. But the fact that half the cases were maniacal during their most acute period shows that the insanity of lactation is by no means exclusively a melancholic form of mental disease. It shows that bodily and nervous exhaustion and malnutrition, though their first mental symptoms may be mental depression, yet tend in a large number of cases towards morbid mental exaltation with excitement, in the long-run, mania being in fact another and a further stage of the convolutional brain disturbance. When classified according to the acuteness or mildness of their symptoms, independently of psychical exaltation or depression, I find there were twenty-two acute cases and eighteen mild

ones, the majority (eighteen) of the acute cases being maniacal, and a majority (thirteen) of the mild cases being melancholic.

Time of Occurrence.—As regards the months of nursing in which the disease occurred, my records do not state this point in seventeen, but of the remaining no less than ten occurred within the first three months, seven in the next three, four in the next three, and only two in the last three months. I confess I was surprised at this. It is a different result from that arrived at by Batty Tuke from an examination into the statistics of fifty-four cases of the insanity of lactation that had been in this Asylum previous to May 1865. Only two of his cases occurred within the third month, and only eight within the first six months of nursing, while twenty-one cases, or 51 per cent. of those in whom the period was recorded, occurred after the ninth month of nursing, my percentage for the same period being nine. My statistics distinctly point to the causation of this form of mental disease being in many cases due to the disturbance of the puerperal period aggravated by the reflex excitation of the brain through the physiological act of suckling the infants, Tuke's statistics clearly point to a preponderating causation by the exhaustion of mere long-continued nursing. Both causes operate, I have no doubt, but why they should have operated so differently in the cases in the same asylum at different periods I am unable to explain. My records were so deficient in regard to which nursing the disease occurred in as to be worthless. They merely show that lactational insanity may occur after the first child or the seventh. The suicidal impulse is common, seventeen of the forty having had it in greater or less intensity.

Temperature. — The temperature shows a very marked difference from the puerperal form of insanity.[1] A glance at

[1] From 96° to 97° in 1 case.
,, 97° ,, 98° ,, 6 ,,
,, 98° ,, 99° ,, 20 ,,
,, 99° ,, 100° ,, 8 ,,
From 100° to 101° in 3 cases.
,, 101° ,, 102° ,, 0 ,,
,, 102° ,, 103° ,, 1 ,,
,, 103° ,, 104° ,, 1 ,,

the highest temperature shows that only about one-third of the cases (thirteen) were over the normal standard, and of these the great majority (eight) were only between 99° and 100°. Three were between 100° and 101°, leaving only two that were over that, in one of whom it was caused by an inflamed breast. The temperature record shows clearly the milder type of lactational insanity as compared with the puerperal form. The thermometer, though the readings seldom reach very high in uncomplicated mental disease, I look on as being simply invaluable as showing the intensity of the brain action. Its readings upwards, from normal to 102° or 103°, are usually in the exact ratio to the intensity of the mental disease. Only, it must be remembered that half a degree in the estimation of the intensity of brain overaction is equivalent to two degrees in the measurement of febrile disturbance. I attach especial importance to the readings of the thermometer in all acute mental diseases, and have used it in every case under my care in the Carlisle[1] and Royal Edinburgh Asylums since the year 1866.

Heredity.—Heredity to insanity was known to be present in fifteen of the cases; but then in twelve of the forty no reliable information on this point could be got. And as proximate causes, mental and normal disturbances occurred in nine of the cases.

Curability.—Let us look now at the results of treatment, the most interesting of all questions to the physician, and still more so to the relatives of the patients. Thirty-one of the forty cases recovered, and three more were removed from the Asylum uncured but improving. This is 77½ per cent. of actual recoveries, and a still higher figure of potential restorations to mental health. The lactational cases recovered in slightly larger numbers therefore than the puerperal cases, and only one case of the forty died. I find that the maniacal and the melancholic, the acute and the mild cases recovered

[1] See author's paper, "Observations on the Temperature of the Body in the Insane," *Journal of Mental Science*, April 1868.

in somewhat equal proportions.[1] The six who did not get better, but are still under treatment, were three of them patients who had repeated attacks of insanity before, the other three looking phthisical. The lactational cases did not recover as soon as the puerperal.[2] Only sixteen recovered within three months, but twenty-five, or 62 per cent. of all the cases, and 80 per cent. of the recoveries, recovered within six months, and all of them within eighteen months. And they made good and lasting recoveries, few of them relapsing. Recovery in all the patients was accompanied by a great increase in body-weight, in strength, in appetite, and in fatness. In some menstruation continued during the disease, and in its earlier stages produced excitement and exhaustion of strength. It was often menorrhagic in such cases. The function, when absent, usually returned of itself without any special treatment, as the nutrition improved.

Effect of Patient's Circumstances.—One instructive fact I came across in relation to this disease. Out of 166 admissions of ladies to our higher-class departments there were only two lactational cases, while there were among them nearly the usual proportion of puerperal cases. Out of 1383 pauper and poorer private female patients, there were thirty-eight lactational cases. In short, the puerperal cases were sent for hospital treatment in as great a proportion among the rich as the poor, while the lactational cases were only sent in half that proportion. This points clearly to the greater mildness of type of the latter, and the possibility of treating it at home, if not to the greater infrequency of the disease

[1] Of the twenty-one cases of mania fifteen recovered; of the nineteen cases of melancholia sixteen recovered; of the twenty-two acute cases fifteen recovered; and of the eighteen mild cases sixteen recovered.

[2]

Within 1 month	6	cases	recovered.		
,, 2	,, 6	,,		,, 8	,, 1 ,,
,, 3	,, 4	,,		,, 9	,, 2 ,,
,, 4	,, 2	,,		,, 11	,, 1 ,,
,, 5	,, 6	,,		,, 18	,, 1 ,,
,, 6	,, 1	,,			

Within 7 months 1 case recovered.

among the well-fed classes, who have servants to work for them, nurses to attend their children, and doctors to tell them when to stop nursing in time. Probably the custom among the poor of nursing each child a long time in order to delay the conception of the next has something to do with the greater prevalence of this form of mental disease among them.

THE INSANITY OF PREGNANCY.

Rare; 1 per cent. of insanity among women; occurs most frequently in women advanced in life when pregnant; usually melancholic; suicidal tendency in half the cases; connection of the insanity with the morbid cravings, &c., of pregnancy; a few cases of stupor; a few of dipsomania—Most cases recover at childbirth; 60 per cent.; a few rapidly become demented.

The Psychology of Pregnancy.—Few women carry a child without being influenced mentally thereby in some way or other. The psychology of pregnancy has yet to be written in a scientific way. There are innumerable facts on record, but they are scattered and undigested. Without going into the domain of mental disease in any technical sense, we find examples of partial mental exaltation, mental depression, mental enfeeblement, mental paralysis, and mental perversion. No doubt the alterations are chiefly in the affective faculties, but the reasoning power, the moral sense, the volitional power, the imagination, and even the memory, are often enough affected in pregnant women. As a part of the nervous disturbances, the bodily appetites become changed, the physiological functions altered, and the nutrition of organs profoundly affected. In this state many women have endless caprices, unfounded dislikes and likings, cravings for foods and drinks never before desired, unnatural desires for indigestible things, causeless weeping and laughing, stealing and lying, morbid thirst and hunger, an activity of digestion never before known, pigmentation of the skin, alteration of the expression of the

face, of the tones of the voice, and of the power of muscular co-ordination. It is scarcely surprising that every function of the great central nervous system should be thus affected in many cases, for, physiologically, pregnancy means a dynamical change for the time being in the direction of some of the great currents of energy, and a change, amongst others, in the quality of the blood. Psychologically it is the fulfilling of the second strongest organic necessity of life—to reproduce the species. All the changes, mental and bodily, that I have referred to, and far more than these, should be taken into account in studying the question of how pregnancy produces those great psychical disturbances that we call insanity in brains predisposed thereto. A considerable number of women are mentally unsound during pregnancy, if judged by an ideal standard of volitional power, while very few indeed pass the conventional line that divides sanity from insanity. Nature seems to care for pregnant women physiologically in all directions, and does so in the case of the mental functions of the brain convolutions. Those may be, and are often, slightly affected in pregnancy, but are seldom quite upset. It is a very rare form, as an insanity, as we shall see from the statistics. In fact, there is no period in the life of a woman after the age of 25 when she is less liable to actual insanity than during her pregnancies. But there is an infrequent type of case exactly the contrary of this rule, where a woman cannot become pregnant without becoming insane. I have such a patient now, K. K., who has been five times pregnant and five times insane, each time during pregnancy. This, no doubt, is the clearest indication nature could give that such a woman should never become pregnant. I had one patient, K. L., who had six different attacks of insanity —two of pregnancy, two puerperal, and two of lactation—and she made perfect recoveries from them all, though in each she was most determinedly suicidal and homicidal, strangling and killing her first child, and attempting at least six different times to take away her own life. Yet for the last eleven years she has kept quite well, and done her work at home.

She had one or two other children without being affected in mind more than by a little depression.

Symptoms.—The typical mental disturbance of pregnancy of the mild kind not requiring asylum treatment, and often not incapacitating a woman from doing her duties, consists of a mental depression, or mental apathy not amounting to stupor, with a loss of interest in things, a loss of conscious affection for husband and sometimes for children, a slight weariness of life, a fear of something going to happen, and a general loss of courage and a disinclination for social intercourse. These symptoms do not usually come on before the third month of pregnancy, and much more frequently they do not come on till after the sixth month. Sometimes they only last for a part of the period of pregnancy and then pass off. More usually they do not disappear till after delivery. They either do so then or become aggravated into a more acute puerperal psychosis. There is another distinct type of case where during the first pregnancy insanity comes on, becomes acute, and ends in dementia soon. This is perhaps one of nature's ways of ending a bad stock; just as I look on the insanity of adolescence to be, and on sterility to be in some cases, and on sexual antipathy to be, and on absence of the social instincts to be. There are psychological bachelors and old maids, born so, whom no social cultivation or opportunity can make otherwise, and these will be found to occur usually in families with a heredity to insanity.

The following case presents the most common type that family doctors have to do with:—K. M., a married woman, æt. 34, with an insane heredity, who had had five children comfortably, came to me saying she was dull and miserable, and could not do her work nor take an interest in anything. It seemed as if she did not care for her husband, nor to do her household duties, and she said she was afraid of herself, meaning that she might commit suicide. She was stout, strong, and well nourished, and looked the picture of good health. She slept well, ate well, and all her bodily functions

were normal. She was in the sixth month of pregnancy, and the mental change had come on a month before. I advised that she should have a female friend with her and should go on doing her work, should walk much in the fresh air, and wait patiently for her confinement. After the eighth month she felt much better, and after confinement every trace of her mental depression left her.

The following was a very acute case of the insanity of pregnancy :—K. N., æt. 32, pregnant of an illegitimate child, became at the sixth month dull and apathetic, then within a month incoherent, talkative, and almost delirious. She would moan at times as if in pain ; would say, poor soul, "I am in a fearful state ; never was in such a state as this." She had hallucinations of sight, seeing elephants all of a green colour before her. She was very weak on admission, could not walk well without assistance, her tongue and mouth tended to be dry, she had pain in her abdomen, her ankles were swollen, her pulse was 136 and weak, and her temperature 100·4°. She continued restless, depressed, excited, and sleepless, and eight days after admission was delivered of a healthy male child. Her mental state improved much thereafter for a week, when she had a relapse. In fact, the puerperal state caused an excess of puerperal insanity, but in four weeks after the birth of the child the excitement had passed off, the delusions only remaining. In another week the delusions too had left her, and in two months she was discharged strong in body and well in mind.

The next is a more characteristic case, K. O., æt. 30, a married woman with a hereditary history of insanity, and pregnant with her first child, became insane six weeks before its birth ; a fear came over her first, and she said, "I must die, I must die." An inflammation in one lung had reduced her strength, and she had been sleepless for two weeks, soporifics having no effect. She was suicidal, and tried to jump out of a window. Her friends properly kept her at home, nursing and looking after her as best they could till

the child was born. She then got much worse mentally, and remained maniacal for two months. Then she became apathetic, confused, and childish, with occasional impulsive spurts of maniacal excitement. This state lasted for a month, then she began to improve, and was well in six weeks, her attack having lasted altogether five months. The bromides and iron were used largely in the acute stage of her disease, strychnine in the apathetic stage, and extra food and fresh air and good nursing throughout. There was a very decided tendency to stupor during some part of this case.

Statistics.—The cases of the insanity of pregnancy of such an acute type as to need asylum treatment are rare, and by no means of a uniform type. I have had only fifteen such in the past nine years sent to the Royal Edinburgh Asylum. Nine of these were maniacal and six melancholic; nine of an acute type, and six were mild in their symptoms; *seven of them were suicidal, some being desperately so. This is an enormous proportion of suicidal cases for any clinical variety of insanity.* In half of those with a history there was heredity to insanity, mostly strong and direct heredity.

Curability.—Of the fifteen cases only nine recovered, or 60 per cent. of the whole, this form of mental disease in its worst forms being thus more incurable than the insanities of childbed or nursing. The time of recovery in relationship to confinement was various. In only two cases of the nine who recovered was the termination of pregnancy attended with speedy and marked mental recovery. In four cases confinement distinctly aggravated the previously existing mental disease. In three of these, in fact, the symptoms had not been so bad before confinement as to need asylum treatment at all. The puerperal state seemed to bring the insanity of pregnancy to a climax in those cases. In three cases of the nine who recovered they got better, and were discharged from the Asylum recovered before they were confined. The whole nine had recovered in six months. Three cases were transferred to other asylums, within four months after

admission, in an improved condition, and of these one might possibly have got better ultimately, and one was taken home before recovery and did get quite well. This would bring up the recovery rate to 73 per cent. Two died, one of uræmic poisoning—this probably having been the real cause of her insanity—seven days after admission, and another of general tuberculosis in ten months.

First Pregnancies.—Women are more liable to become insane during the first than subsequent pregnancies, for seven of the fifteen cases were first pregnancies; and the fact that five of the fifteen were illegitimate children shows that moral causes tend to bring on the disease.

Onset.—The coming on of the disease was gradual in most of the cases, and it began in all but two with depression of mind or apathy and stupor. The affection towards their husbands became perverted in nearly all the married cases. The psychology of the affection between husband and wife, and the way it is influenced by sexual intercourse, by pregnancies, by the children or the absence of children, by neurotic constitution of brain, by the climacteric, and by old age, will be an intensely interesting and important study when written from the physiological point of view. Many strange chapters on this subject could family doctors write. I have not had a single case of the insanity of pregnancy in a rich patient sent here. This is natural and proper, for if any kind of mental disease should be kept out of asylums without sacrificing life or recovery it is this. It would be a terrible fate, as things go in this world, to be born in a lunatic asylum, in addition to being the child of an insane mother. The asylum cases can scarcely be taken as the real type of the insanity of pregnancy, they being by far the worst, no doubt.

Treatment.—The treatment of the insanity of pregnancy is in no way special. The women are not usually run down. The temperature in only four of my cases—one being the uræmic case—was above 99°. Fresh air, exercise, watching, nursing, employment, cheerful society, change, freedom from

too much work and worry, and suitable food, are about all we can do. Slight sedatives may be required as *placebos*, but in as small doses and as seldom as possible. The blood of an insane mother needs not to be mixed with morphia or chloral to make it bad for her unborn progeny. The tendency to suicide must be especially kept in mind. One of my cases had a secondary syphilitic eruption, and needed treatment for that, and in two more I suspected syphilis, both children being prematurely dead-born. I think that abortion should be resorted to if marked insanity comes on in the early stage of pregnancy. It can now be almost safely carried out. In the later months, too, premature labour should, I think, be induced. Of course, such measures should only be resorted to after consultation, and with the written consent of the husband or nearest relatives.

Frequency.—Together, the insanities of childbed, nursing, and pregnancy have constituted over 9 per cent. of all the female cases in the Royal Edinburgh Asylum for the past nine years (1874–82), there being 141 cases out of 1549 admissions (including readmissions). There was 5 per cent. of the puerperal form, 4 per cent. of the lactational, and 1 per cent. of the insanity of pregnancy. As we admit all classes of society, this may be taken to represent the real effect of child-bearing in the production of insanity, at least in this part of the country. In Cumberland and Westmoreland, for the ten years (1863–72) during which I was in charge of the Carlisle Asylum (for the poorer classes only), there were 75 cases out of 431 female patients in all, or 17·4 per cent. This enormous difference of nearly twice the proportion is made up entirely of the excess of puerperal cases, there having been 51 of these, or 11·8 per cent. of the whole of the female insane of those two counties. That is more than twice the Edinburgh proportion. Such great differences in the local distribution of the different forms of insanity form an interesting problem in medico-psychology that needs yet to be worked out as to its causes.

LECTURE XVI.

THE INSANITIES OF PUBERTY AND ADOLESCENCE (*THE DEVELOPMENTAL INSANITIES*).

Enormous differences in the physiological activities of the brain at different periods—Type of mental derangement much influenced by the special physiological activity or decadence of the period—The developmental insanities and those of decadence — *Insanity of Puberty:* Rare; only two cases in Royal Edinburgh Asylum at ages of 14 and 15 out of 1800 cases, and only 22 at 16 and 17; always hereditary; acute; remittent; not dangerous to life; maniacal; theories and practices of education at puberty—*Prognosis:* Good—*Treatment:* Tonics; fresh air; baths; milk and farinaceous diet; cod-liver oil; bromide of potassium; no opium or chloral—*Insanity of Adolescence:* Meaning of *Adolescence*—Physiological and psychological characteristics; momentous period; far more so than puberty—Novelists the best students and describers of the mental characteristics of adolescence; Gwendolen Harleth (*Daniel Deronda*)—Relationship of adolescence to emotion, sense of duty, capacity for work, sentiment, religious sense, courtship, engagements to marry, sexual intercourse—Of 1800 cases, 230 uncomplicated between 14 and 25; of these 49 occurred at the ages of 18, 19, and 20, while 157 occurred from 21 to 25—*Mental Symptoms:* 78 per cent. exaltation; only 22 per cent. depression; mania, acute, remittent, relapsing in 66 per cent.; hereditary predisposition very common (45 per cent. ascertained, far more than that in reality); morbid ideas, emotions, speech, and conduct tinctured by erotic, sexual, or adolescent characteristics—*Prognosis:* Good; 66 per cent. recover; relapses often occur in after life; remainder mostly become demented and live long, bodily health often being good—*Mortality Small:* only 1·8 per cent. died—*Treatment:* Same as for insanity of puberty—*Signs and Accompaniments of Recovery:* Perfect development of form and mammæ; growth of beard and sexual hair; change of voice; psychologically and physiologically they emerge from attack men and women.

Psychology of Development. — When one considers the enormous differences in the physiological life and prevailing brain activity of the same human being at the different periods of life, it does not seem wonderful that each period has its own type of psychological disturbances, just as it has its special kinds of ordinary disease. Indeed, it would be very wonderful if the brain of a child, whose chief characteristics are active growth, intense inquisitiveness in all directions, great sensitiveness to impressions, which succeed each other rapidly, and, whether they are painful or pleasurable, leave only slight lasting traces, if this organ manifested quite the same disturbances when its mental functions become deranged as the brain of an old man, whose chief characteristics are retrogression in all its activities, and insensitiveness to ordinary impressions. The essential qualities of the two organs are in many respects different; their prevailing receptive, dynamical, and trophic activities are dissimilar. Then what a change in the mental activity of the brain does the period of puberty cause! Looking at the matter from the combined point of view of physiologists and psychologists, we must connect the new development of the affective faculties, the new ideas, the new interests in life, the new desires and organic cravings, the new delight in a certain sort of poetry and romance, with a new evolution of function in certain parts of the brain that had lain dormant before. This awakening into intense activity of such vast tracts of encephalic tissue, though provided for in the evolution of the organ, does not take place without risk of disturbance to its mental functions, especially where there is an inherited predisposition in that direction. And if this predisposition is thus developed into actual derangement of function, it happens, as might have been surely predicted, that the type of derangement is much influenced by the great function of the reproduction of the species then arising *de novo*. To form a right conception of the kinds of mental disease that occur at the various important periods of life it is essential that we consider them

in connection with the normal changes that take place in the organism at those periods, with the normal modifications in the mental energy at those periods, and with the changes that take place in the brain texture and mode of action, so far as we know them. In short, we must take a physiological view of mental disease.

The Period of Puberty or Pubescence.—The period of puberty is the next great physiological era in the life of man after that of birth. Before that occurs the whole trophic and mental energy has been occupied in acquisition alone. The brain has been growing in bulk, rather than developing in higher function. There has been no production. Before that time there has been a general psychical likeness between individuals of the same and of opposite sexes which then rapidly disappears. Individualities of all kinds spring up far more decidedly at that time in those of the same sex: while, dividing the sexes at this time, there arise most striking psychical differences that far exceed the bodily contrasts. Up to that time the mental development of each sex has been very much in the same direction; after puberty that development takes place in the man far more in the direction of energising and cognition, in the woman in the direction of emotion and the protective instincts. But these changes do not ordinarily take place all at once in the human species, any more than a full capacity for reproduction takes place in either sex immediately the testes assume their function, or menstruation and ovulation are set up. It takes several years for the full development of the size and form of the body that is normal and typical for each sex, and it takes still longer for the complete evolution of the masculine and feminine psychical characteristics. It is not at the time of the first appearance of the reproductive function that there is the chief peril to the healthy mental balance, but it is the after years of gradual coming to maturity that are often full of danger to the mental health of both sexes. It cannot be otherwise. The hereditary influences

and tendencies that all the former generations have transmitted to a man come then most fully into play. And when we consider for a moment that it is not only his father's and his mother's own inherited tendencies that may come to him, but some of their acquired peculiarities as well, and not only so, but the inherited and acquired peculiarities of his four grandparents, and his eight great-grandparents, not to go any further back, how great a risk does every man and woman run of suffering for the sins of their fathers! Maudsley speaks of a man's yielding to the tyranny of his organisation. We might go further, and say he may fall a victim to his grandfather's excesses. Most fortunately for the race, there are other influences obviating such effects of heredity. One is that the tendency towards reproducing the normal and healthy type is generally stronger, if the conditions are favourable, than towards the abnormal. If the conditions of life are favourable, mere tendencies never develop, and potentialities never become actualities. The other is, that when the tendency to abnormality is strong, the victim of it often is idiotic or sexually unattractive, dies before the age of reproduction, or he is incapable of procreation. Now, the insanity of puberty is always a strongly hereditary insanity; it, in fact, never occurs except where there is a family tendency towards mental defect or towards some other of the neuroses. Its immediate cause may be some irregularity in the coming on of the reproductive or menstrual function; its real and predisposing cause is heredity, having for its subject this higher physiological law, that the reproduction of the species tends to stop when the inherited tendency to brain disease acquires a certain strength in any individual.

Unphysiological Education.—I cannot help here adverting to some absurd and unphysiological theories of education which are common, and which we as medical men should combat with all our might. The theory of any education worth the name should be to bring the whole organism to

such perfection as it is capable of, and to train the brain power in accordance with its capacity, most carefully avoiding any overstraining of weak points—and an apparently strong point in the brain capacity of a young child may in reality be its weakest point in after life. I have known a child with an extraordinary memory at eight who at fifteen could scarcely remember anything at all. Then, as the age of puberty approaches, one would imagine, to hear some scholastic *doctrinaires* talk, that it was the right thing to set ourselves by every means to assimilate the mental faculties and acquirements of the two sexes, to fight against nature's laws as hard as possible, and to turn out psychically hermaphrodite specimens of humanity by making our young men and women alike in all respects,—to make our girls pundits and our young men mere examination-passers. If there is anything which a careful study of the higher laws of physiology in regard to brain development and heredity is fitted to teach us, it is this, that the forcing-house treatment of the intellectual and receptive parts of the brain, if it is carried to such an extent as to stunt the trophic centres and the centres of organic appetite and muscular motion, is an unmixed evil to the individual, and still more so to the race. There is no time nor place of organic repentance provided by nature for some of the sins of the schoolmaster.

Some educationalists go on the theory that there is an unlimited capacity in every individual brain for education to any extent in any direction you like, and that after you have strained the power of the mental medium to its utmost, there is plenty of energy left for growth, nutrition, and reproduction. Nothing is more certain than that every brain has at starting just a certain potentiality of education in any one direction and of power generally, and that it is far better not to exhaust that potentiality, and that if too great calls are made in any one direction it will withdraw energy from some other portions of the organ. These persons forget that the brain, though it has multiform functions, yet has a solidarity

and interdependence through which no portion of it can be injured or exhausted without in some way interfering with the functions of the other portions. To expect that any one man could have the biceps of a blacksmith, the reasoning powers of a Darwin, the poetic feeling of a Tennyson, the procreative power of a Solomon, and the longevity of a Parr, is simply to expect a physiological miracle. "Man cannot add a cubic to his stature." The blacksmith's arm will not grow larger by twenty years of daily exercise after it has once attained a certain size. The possible extent of development of every brain and of every function in any one brain is just as much confined by limitations as the size of the blacksmith's arm, and physiology teaches us that no organ or function should be worked even up to its full limit of power. No prudent engineer sets his safety-valve just at the point above which the boiler will burst, and no good architect puts weight on his beam just up to the calculation above which it will break. Nature generally provides infinitely more reserve power than the most cautious engineer or architect. She scatters seeds in millions for hundreds to grow, and she is prodigal of material and strength in the heart and arteries beyond what is needed to force the blood-current along; therefore no function of the brain should be strained up to its full capacity except in extreme emergencies. Especially do these principles apply if we have transmitted weaknesses in any function or part of the organ; and what child is born in a civilised country without inherited brain weaknesses of some sort or in some degree?

These principles also apply, I believe, most strongly to the whole reproductive functions of the body and its centres in the brain, both in the male and the female. Especially are they applicable in the case of the female organism, on which the chief strain of reproducing the species rests. The risks to the mental functions of the brain from the exhausting calls of menstruation, maternity, and lactation, from the nervous reflex influences of ovulation, conception, and parturition, are

often enormous if there is much original predisposition to derangement, and the normally profound influences on all the brain functions of the great eras of puberty and the climacteric period are too apt, in these circumstances, to upset the brain stability. Beyond all doubt, boarding-school education has not as yet been always conducted on physiological principles, and is responsible for much nervous and mental derangement, as well as for difficult maternity; but if the education of civilised young women should become what some educationalists would wish to make it, all the brain energy would be used up in cramming a knowledge of the sciences, and there would be none left at all for trophic and reproductive purposes. In fact, for the continuance of the race there would be needed an incursion into lands where educational theories were unknown, and where another rape of the Sabines was possible. American physicians used to tell us that there were some schools in Boston that turned out young ladies so highly educated that every particle of their spare fat was consumed by the brain-cells that subserve the functions of cognition and memory. If these young women did marry, they seldom had more than one or two children, and only puny creatures at that, whom they could not nurse, and who either died in youth or grew up to be feeble-minded folk. Their mothers had not only used up for another purpose their own reproductive energy, but also most of that which they should have transmitted to their children, nature, no doubt, making provision for the transmission of the unused-up energy of one generation on to the next, on the principle of the conservation of force. As physicians—the priests of the body and the guardians of the physical and mental qualities of the race—we are, beyond all doubt, bound to oppose strenuously any and every kind and mode of education that in any way lessens the capability of women for healthy maternity, and the reproduction of future generations strong mentally and physically. Why should we spoil a good mother by making an ordinary grammarian? The relation of the

psychical and emotional development to the generative function is full of interest and importance to us as physiologists, and few men have been long in practice before such questions obtrude themselves as very practical ones indeed. The first hysterical girl a man has to treat in a good family, where he does not want to lose the case or the family practice, may test severely his knowledge of the reflex relationship of the function of reproduction with the sensory, motor, and mental functions of the brain. It is a mere cloak for ignorance, and an excuse for not thinking, to call certain abnormal phenomena "hysterical," and imagine that explains them. It does not require much consideration to see that at the period of puberty in both sexes, but especially in the female, the direct connection of certain physiological functions and processes with certain mental facts influences the whole life of the individual. If that connection is in any way abnormal, we have great strains on the mental functions of the brain, and sometimes actual derangement. Our high civilisation and refinement, no doubt, add to the risks by increasing the strain. The psychological analysis of what female modesty is, by a physiologist, reveals the transformation and apotheosis in the higher regions of the brain of reflex reproductive impressions into a high moral quality, not only beautiful, but absolutely essential to social life. How can a physician understand the true import of the obtrusive and grotesque modesty of a hysterical patient except he takes this into account? The intense and complete outward repression and inhibition of certain physiological cravings required by our morals and our civilisation causes, no doubt, a dangerous strain on the brain functions, and a reaction in other directions, where there are hereditary neurotic weaknesses.

Statistics.—Puberty is the first really dangerous period in the life of both sexes as regards the occurrence of insanity; but it is not nearly so dangerous as the period of adolescence, a few years afterwards, when the body, as well as the functions of reproduction, have more fully developed. There are a few

cases of insanity in childhood, but very few. They consist of either short attacks of delirium or short melancholic attacks. Delirium is the typical psychosis of childhood. Child melancholy is a very striking abnormality when first seen, being so contrary to the normal mental state of the period. I have seen a child of six wailing and weeping, with groundless fears and suspicions and much obstinacy, for two days. There is always a strong morbid heredity in such cases. The nutritive energy of the brain is so great in youth, its recuperative power so vigorous, and its capacity for rest in sleep so wonderful, that its mental functions are not often upset at this period, and when upset, they soon are set right again. To bring out this fact statistics are useful. In Scotland at the present time nearly one-half the population are under the age of 20 ; while in the Royal Edinburgh Asylum we have, out of a total of 730 patients, only ten under that age. The contrast between 50 per cent. and 1·5 per cent. in the sane and insane populations is a very marked one. But, to show how different is the state of matters in the older periods of life, let us compare the number of persons over 60 in Scotland and in the Asylum. In the general population there are just about 8 per cent. over that age, while in the Asylum, out of the 730, there are no less than 126, or 17 per cent. Or, to bring out the facts differently, it is found that the number of people so insane as to require to be in asylums is about one in 600 of the population. Now, at this rate our 730 inmates represent an ordinary population of 438,000. One-half of these, or 219,000 persons, are 20 years of age or under, and they have only supplied ten of our lunatics, insanity occurring in them at the rate of only one in 21,900, while the remaining half of the general population, that over 20, had produced 720 lunatics, or one in 304, that is, in seventy times the proportion of those under 20 years of age. After the age of 20 there is no such enormous disproportion at other ages in the production of lunacy. It is undoubtedly most frequent between the ages of 35 and 55. Speaking generally, therefore, insanity in

its worst forms is not a disease of youth or puberty, but of middle and advanced life. Slight attacks of nervous and mental derangement, however, that do not require asylum treatment, are by no means uncommon in those predisposed to the neuroses at the earlier ages, especially in the female sex; and if the general health and strength and nutrition are poor, puberty is liable to cause neurotic symptoms in those cases. Such symptoms, if there is an inherited predisposition to insanity, should by no means be despised. They may develop into actual insanity at a later period. For the production of decided insanity requiring asylum treatment at the age of puberty we must, as I said, have a strong neurotic predisposition, as well as the advent of the reproductive era and the changes it brings along with it. I have scarcely ever met with a case without this.

The Developmental Neuroses. — Other affections of the nervous centres are very apt to appear at this period of life, notably the two great derangements of the motor centres, epilepsy and chorea. In fact, the insanities of puberty and adolescence are merely two of a great number of developmental neuroses, some of which come on before seven years of age, during the growth period of the brain, such as convulsions, squint, stammering, night terrors, infantile paralysis, tubercular meningitis, hydrocephalus, rickets, and some varieties of idiocy and imbecility. The next series of this group are first met with chiefly in that period when brain growth is not so acute, but when muscular motion becomes fully co-ordinated with emotion—the pre-pubescent period —that is, from seven to fourteen. The neuroses of this period are chiefly chorea, somnambulism, asthma, megrim, some eye defects, and some amount of epilepsy. The third period, that of puberty and adolescence—from fourteen to twenty-five—bears the neurotic fruits of epilepsy, hysteria, adolescent insanity, instinctive immorality, arrested body growth (dwarfishness), ugliness, joint disease, ingrowing nail, acne, and many skin diseases, many forms of im-

paired vision, barrenness, and perhaps phthisis and acute rheumatism.[1]

The Hard Palate in Adolescent Insanity.—While investigating the physical characters of the preceding neuroses of development, I discovered a curious line of connection between congenital insanity—idiocy and imbecility—and adolescent insanity. It had long been known that a high-arched saddle or V-shaped palate was very common among idiots. I found that the palate might be classified into three varieties, viz., the *typical*, the *neurotic*, and the *deformed* (see Plates XI. and XII.). The examination of large numbers of various classes gave the following results:[2]—

Frequency of the Three Types of Palate in various Classes of Persons examined.

The Different Classes.	No. 1. Typical Palate.	No. 2. Neurotic Palate.	No. 3. Deformed Palate.	Number of Persons examined.
	Per cent.	Per cent.		
The general population, . .	40·5	40·5	19	604
Criminals (the degenerate), .	22	43	35	286
The insane (acquired insanity),	23	44	33	761
Epileptics, ...	20	43	37	44
Adolescent insanity, . .	12	33	55	171
Idiots and imbeciles (congenital insanity), . . .	11	28	61	169

Adolescent insanity is thus seen to have 55 per cent. of the cases with deformed palate, thus approaching the 61 per cent. among the idiots. No doubt the degree of deformity among the latter class was greater on the average than among the former, but individual cases were frequent where the degree was quite as extreme in the one as in the other. The general

[1] *The Neuroses of Development*, by the author.

[2] A careful Study of Palatal Deformities will be found in *Journal of Mental Science* for January 1897, by Dr Walter Canning.

characters of adolescent deformed palate are seen in Plate XIII., the figures of which show vertical transverse and vertical antero-posterior sections, taken from the typical adolescent cases now in the Asylum, by Dr G. R. Wilson.

The motor centres are, no doubt, more unstable and easily upset in their working in youth than either the mental, sensory, or trophic centres. The insanity of puberty in both sexes is characterised especially by motor restlessness. Such patients never sit down by night or day, and never cease moving. There is noisy and violent action, sometimes irregular movements, or, in the few melancholic forms and melancholic stages of the maniacal cases, cataleptic rigidity. The mental symptoms consist most frequently of a kind of incoherent delirium rather than any fixed delusional state. In boys the beginning of an attack is frequently ushered in by a disturbance in the emotional condition, — dislikes to parents or brothers or sisters expressed in a violent, open way; there is irrational dislike to, and avoidance of, the opposite sex. The manner of a grown-up man is assumed, and an offensive "forwardness" of air and demeanour. This soon passes into maniacal delirium, which, however, is not apt to last long. It alternates with periods of sanity, and even with short stages of depression.

The following is a very characteristic case of the early insanity of puberty. I have seen others presenting the same peculiar symptoms:—

K. P., æt. 11½, of an active and cheerful disposition, and a bright boy at school. His parents were poor, and he was brought up in a poor part of the town. His mother had an attack of puerperal insanity—mania—after the birth of a child born before K. P., and another attack of ordinary acute delirious mania after he had been sent to the Asylum, from both of which she recovered, but she died melancholic. He has an elder brother who, at the age of 19, had an attack of adolescent insanity—mania—and became demented, a sister has since become insane, and another sister was devoid of any moral

feeling or self-control. There was no exciting cause of the boy's illness. He caught a feverish cold, and then became exalted in mind, singing continuously, clinging to his mother, saying he was going to heaven. This continued all day, but at night he slept twelve hours, and he took his food as usual. When sent to the Asylum there was a very peculiar mixture of mental exaltation and depression present. He went on all the time singing joyful hymns to lively tunes, but in a voice as if crying. He would not answer questions nor take any notice of anything about him, and could not be made to attend to anything any more than if he had been in a condition of trance. His whole condition was one of almost mental automatism, and as he sang he would rock himself, and keep time rhythmically with his hands and body. If any one put their arms round him he would cuddle up to them, and in a child's whining voice sing, "Tak me to ma mammy. Oh my bonny mammy, my bonny mammy; come to me, mammy. Have mercy on me," &c., over and over again, in a rhythmical way; and if his eyes were shut and covered up he would go right off to sleep. The moment he awoke the singing would begin. If he were much interfered with he would shout and resist in a sort of unconscious way. He was poorly nourished and weak in body. He was sent out in the open air much, and was ordered a large quantity of milk and cod-liver oil emulsion. In about seven days the state of delirium passed off, and he got quite well mentally. His father took him home in three weeks, but he got into precisely the same state again on finding his mother insane at home and unable to speak to him. His mother was taken to the Asylum, and he took the delusion that his father, too, was dead and gone. In about a fortnight he passed out of the delirium, and became quite cheerful and active. Just four weeks and two days after his second admission he complained first of toothache, and then almost immediately became very excited, and said he could not see, sobbed, shouted, and was with difficulty restrained from throwing himself about. The symptoms were more those of

ordinary acute mania, but with some of the former delusions, automatism, and facility for sleeping. This attack lasted for a few days only. He then remained well for exactly four months, and then had another attack, preceded by dilatation of the pupils and dimness of vision. The attack lasted for three days. He then got well again, but in another month to a day he got excited and emotional again. Though his face looked sad, and his voice was that of weeping, he never shed tears. This was the fifth attack he had; after that he kept well, was sent home, and kept well for over three years, when he took another attack, and now has become demented.

The chief features of this case were—(1) the suddenness of the coming on of the mental attacks, without external cause; (2) the curious automatic delirious character of them, the mixture of exalted feeling with depression, and the impossibility of rousing his attention to anything outside of him; (3) the way in which he went off to sleep when his eyes were closed and an arm was put round him, in both these respects resembling the hypnotic state; (4) the repetition of the attacks in irregular monthly periods; (5) his complete recovery from the first attack.

I look on such a case as an example of the evolution of a new function, that of generation, upsetting the convolutional working of a brain strongly predisposed by heredity to insanity. The physiological problem solving in the brain at this time seemed to be—Shall the organism have power to reproduce itself? or shall it die in its highest function—mentalisation—in the process of the evolution of the power to reproduce? His elder brother had been attacked with insanity, not at puberty, but during adolescence, at the age of 19. He had at first exhibited a good many cataleptic symptoms, a motor automatic condition, just as K. P. had many mental automatic symptoms. In each case the "higher centre" of volition was powerless.

The treatment I look on as an attempt so to strengthen the vital forces and the nutrition of the organism that it

shall pass safely through the whole period of the evolution of the new function.

K. P.'s case was no doubt in the very earliest stage of puberty, and, indeed, in some of its mental characters partook of some of the characteristics of the delirium of childhood.

Adolescence. Its Psychology.—The mental disturbance characteristic of this period is closely allied to that which occurs at puberty. It occurs later, between the ages of 18 and 25, notably between 20 and 25, when the function of reproduction is attaining its full development and the body is arriving at its full growth. That there is such an era in life physiologically, is sufficiently proved by the existence in all languages of a word to signify the same thing as our "adolescence." I cannot hope to change the accepted meaning of the present nomenclature, but I would, if I could, distinguish between puberty and adolescence in this way—I should restrict puberty, as is now done when the term is used in a scientific and physiological sense, to the initial development of the function of reproduction, to its first appearance as an energy of the organism; while I should use adolescence to denote the whole period of twelve years from the first appearance up to the full perfection of the reproductive energy, when the bones are finally consolidated, and the full growth of the beard and the sexual hair takes place, and there occurs the perfect assumption of the manly form in the male sex, and the full development of the adipose tissue and the mamma gives the female form its perfect grace of contour.

Dr Matthews Duncan has proved statistically that in the female sex "the climax of initial fecundity," which may be taken as proof of full development, "is about the age of twenty-five years."[1] This may be assumed to be the case for both sexes.

Looked at from a psychological point of view, it can scarcely be denied by any one that the later years of

[1] *Fecundity, Fertility, and Sterility*, 2nd ed., p. 33.

adolescence are far more important than the first. For years after puberty, boys and girls are still boys and girls in mind, but as a physiological fact the female sex attains its full bodily development first. At twenty-one the great majority of that sex have attained good physiological development, and Duncan's statistics show that their initial fecundity is then almost at its climax. But this is not so in the male sex. The growth of the beard and the form of the body do not reach full development in that sex on an average till the age of twenty-five. Mentally the difference is still more marked. The subtle but profound mental influences of adolescence have usually reached their full maturity in women three or four years before men.[1]

A careful study of human nature will soon show any observer that the period of adolescence in this sense is a most momentous one. The mental change that takes place from eighteen to twenty-five is incomparably more important, and I think more interesting psychologically too, than that which occurs between fourteen and eighteen. The psychological change at puberty is, no doubt, great from childhood; but it is inchoate and nascent; it wants precision and conscious power: its emotionalism is spasmodic and childish; its sentiment wants tenderness, and its ambitions and longings are allied to castle-building in the air.

At the latter period of adolescence in the male sex life first begins to look serious, both from the emotional side and in action. It is then only that childish things are put away. For the first time literature in any correct sense is appreciated. Poetry, not even understood before, now becomes a passion, at least certain kinds of poetry. Not that the highest kind of literature is reached. No adolescent ever really appreciated, or even thoroughly liked, Shakespeare. That is reserved for full manhood. The kind of novel that is enjoyed is always a good test of the mental and emotional

[1] See *Edinburgh Medical Journal*, July 1879, "The Study of Mental Diseases," by the author.

development. The boy enjoys Ballantyne and Marryat; at puberty the adolescent takes to Scott and Dickens; while only the man enjoys and understands Shakespeare, George Eliot, and Thackeray. Go into a university and watch the demeanour of the first and fourth year's man, if any one has any doubt as to the immeasurable distance between puberty and late adolescence. There seems to be a great gulf fixed between them. The fourth year's man treats his junior not as a mere junior, but as of a different and inferior species. He never speaks to him if he can help it; he would no more room with him than he would with a baby in arms. Watch the two in the presence of the opposite sex. Their behaviour is quite different. In the one case you see mere shyness, that breaks out into rollicking fun the moment a real acquaintance is formed; in the other there is real sexual egoism, that most painful pleasure that consists of the half-conscious feeling that each person of one sex is an object of the most intense interest to each person of the opposite sex of the same age. The real events and possibilities of the future are reflected in vague and dreamlike emotions and longings, that have much bliss in them, but not a little, too, of seriousness and difficulty. The adolescent feels instinctively that he has now entered a new country, the face of which he does not know, but yet that is full of possibility of good and happiness for him. He has a craving, too, for action of some sort—not merely the football action of the boy, but something of more serious import. Longfellow's youth, that vaguely cried "Excelsior," was evidently at this stage of life. His reasoning faculty first gets full back-bone at this period. His emotional nature acquires for the first time a leaning towards the other sex that quite swallows up the former emotions. It is not yet fully under his control, or definite in its aims. His sense of the seriousness and responsibility of life may be said to awake then for the first time in a real sense. The first sense of right and wrong and of duty becomes then more active instead of passive. He has yearnings after the

good, and is capable of an intense hatred and scorn of evil which he could not have experienced before.

Adolescence in the Woman.—But it is in the female sex that the period of adolescence has attracted most attention, especially among those psychological students and delineators of character, the novelists of the day. As physicians, we know that it is only then that hysteria, migraine, and the graver functional and reflex neuroses arise. As men of the world, we know that the love-making, the flirting, the engagements to marry, and the broken hearts of the adolescents are not really very serious affairs. The cataclysms of life do not happen then. We know that no artist ever painted, or no sculptor ever modelled, a Venus who was not near the end of adolescence. A very fine and most interesting study of adolescence in the female sex is, in my opinion, to be found in the Gwendolen Harleth of George Eliot's novel of *Daniel Deronda*. This authoress was by far the most acute and subtle psychologist of her time, and certainly the character I have mentioned is well worthy of study by all physicians who look on mind as being in their field of study or sphere of action. From the time when, at the gaming-table, Gwendolen caught Deronda's eye, and was totally swayed in feeling and action by the presence of a person of the other sex whom she had never seen before; playing, not because she liked it or wished to win, but because he was looking on, all through the story till her marriage, there is a perfect picture of female adolescence. The subjective egoism tending towards objective dualism, the resolute action from instinct, and the setting at defiance of calculation and reason, the want of any definite desire to marry, while all her conduct tended to promote proposals, the selfishness as regards her relations, even her mother, and the intense craving to be admired, are all true to nature. Witness her state of mind when Grandcourt first appeared:—

"Hence Gwendolen had been all ear to Lord Brakenshaw's mode of accounting for Grandcourt's non-appearance; and when he did arrive

no consciousness was more awake to the fact than hers, although she steadily avoided looking towards any point where he was likely to be. There should be no slightest shifting of angles to betray that it was of any consequence to her whether the much-talked-of Mr Mallinger Grandcourt presented himself or not. And all the while the certainty that he was there made a distinct thread in her consciousness."

Again:—

"Gwendolen knew certain differences in the characters with which he was concerned as birds know climate and weather."

The sentimentality of this period of life is well illustrated when Gwendolen says:—

"'I never saw a married woman who had her own way.' 'What should you like to do?' said Alex, quite guilelessly, and in real anxiety. [He was an adolescent just entering on the period.] 'Oh, I don't know! Go to the North Pole, or ride steeplechases, or go to be a queen in the ball, like Lady Hester Stanhope,' said Gwendolen, flightily. 'You don't mean you would never be married?' 'No, I didn't say that. Only, when I married, I should not do as other women do.'"

The inchoate religious sentiment, as a psychological faculty contending with the egoism, is thus brought out:—

"What she unwillingly recognised, and would have been glad for others to be unaware of, was that liability of hers to fits of spiritual dread. . . . She was ashamed and frightened as at what might happen again, in remembering her tremor on suddenly finding herself alone. . . . Solitude in any wide scene impressed her with an undefined feeling of immeasurable existence aloof from her, in the midst of which she was helplessly incapable of asserting herself. With human ears and eyes about her she had always hitherto recovered her confidence, and felt the possibility of winning empire."

The selfishness and craving for notice is thus hit off:—

"'I like to differ from everybody. I think it is stupid to agree.'"

"Her thoughts never dwelt on marriage as the fulfilment of her ambition. . . . Her observation of matrimony had induced her to think it rather a dreary state, in which a woman could not do as she liked, had more children than were desirable, was consequently dull, and became irrevocably immersed in humdrum. Of course marriage was social promotion. She could not look forward to a single life. . . . She meant to do what was pleasant to herself in a striking manner; or rather, whatever she could do so as to strike others with admiration, and get in that way a more ardent sense of living, seemed pleasant to her fancy."

But extracts merely spoil the whole picture, which is one that is in perfect accord with the facts of nature, drawn by a consummate artist.

It seems like passing from the poetry of science to Dryasdust's details, to descend from George Eliot's word-pictures to the details of physiological fact and speculation that underlie all this charming maiden's mental constitution. I think most medical men of extensive observation would agree with me, that the incompleteness of those mental tokens of merely developing womanhood and manhood during the period of adolescence do indicate that the conditions under which the reproduction of the species takes place should be deferred till adolescence has passed. The love-making of adolescence is not the serious matter it should be, as Gwendolen's history well shows; and therefore, the full physiological and psychological conditions for dualism not being there, it should not be encouraged. All serious love-making, engagements to marry, too free intercourse with the other sex, too much dancing, too much going into society, merely tend to force on the full development, like young plants in a hot-house, with the result that the flowers and fruit have a tinge of artificialness, do not last, do not stand the same tear and wear. A young man who marries before his beard is fully grown breaks a law of nature and sins against posterity. A girl who gets engaged while in Gwendolen's state of mind is not likely to derive all the happiness in marriage of which she is capable. It follows, therefore, and most members of our profession would, I think, agree with me, that sexual intercourse should never be indulged in till after adolescence.

The period of adolescence is very liable to those psychological cataclysms in weak brains, attacks of mania, which have a special relationship to the function of reproduction. Especially it seems to me that the periodicity and remission of the *nisus generativus* in both sexes, and the menstrual periodicity which accompanies it in women, are reflected in a

corresponding periodicity and tendency to remission in the insanity that occurs during adolescence.

Insanity in Adolescence.—Passing now from the physiological and psychological characteristics of adolescence to the forms of mental disease that prevail then, the following was a very severe case of the insanity of adolescence terminating in recovery :—K. Q., æt. 23, a student, who worked hard, who had a neurotic heredity, his mother having had puerperal mania after the birth of almost every child and been latterly epileptic, his father having been nervous, two sisters and one brother having attacks of mania subsequently to his own attack. His life had been sedentary, and his bodily health and nutrition had run down. He had been given to the habit of masturbation. He had been working extra hard to pass an examination, when suddenly, without any other exciting cause, he became morbidly exalted, lost his power of sleep, got restless, talkative, violent, and unmanageable at home. Within four days he had to be sent to the Asylum. He then laboured under acute, almost delirious, mania. He was exalted, giving incoherent descriptions of metaphysical speculations and mental problems. There was a great deal of the sexual element running through his incoherence and his speculations. His temperature was 100·1°; his pulse 84, weak; his weight 11 st. 12 lbs. He was kept outside nearly all day in charge of two good attendants, though most violent; he was compelled to take four custards a day, each containing four eggs and a pint and a half of milk, in addition to any ordinary food he could be got to take. He was treated with warm baths at night, with cold to his head, and large doses of bromide and iodide of potassium combined while the temperature was high. He slept little, and in spite of the enormous quantity of nourishment taken he fell off in flesh and strength. Contrary to my usual custom in adolescent cases, I added a considerable quantity of port wine to his diet, as he looked at times so exhausted. In the first six weeks of his stay in the Asylum he lost 28 lbs. in weight.

All kinds of sedatives were tried temporarily in vain. I thought he was going to die of exhaustion. He had a slight beginning of a hæmatoma, which was blistered, and so stopped. The excitement became paroxysmal and recurrent in its intensity, though he was never free from it. After about two months the intensity of the maniacal condition began to abate, and he passed into what is to me a most anxious stage in these cases. His expression of face became enfeebled looking, his habits dirty, he masturbated badly, and his whole mental state suggested secondary dementia rather than either mania or recovery. One cannot pay sufficient attention to the treatment of such symptoms in that stage. The nourishment was made a little more stimulating by strong soups, in addition to the milk and eggs. He got fresh vegetables, cod-liver oil with the hypophosphites, and strychnine and iron. He was narrowly watched and well nursed, and much moral treatment adopted to rouse and interest him. It seemed to be in truth a toss-up between recovery and dementia, between mental life and mental death. Fortunately the recuperative power of his brain and constitution prevailed, he slowly picked up flesh, and his beard and whiskers began to sprout,—I have much faith in adolescent recoveries when the beard grows coincidently with recovery,—and his weight increased fast and steadily, until in six months from the commencement of his illness he was quite well in mind, and strong and stout in body, weighing 13 st. His was one of only about ten patients that I have seen where even partial recovery took place after a hæmatoma had formed, or even been threatened in any degree. Unfortunately, after living in the country for a time he came back to a city life, could not get work, had domestic trials, and became insane again in eighteen months—this time the symptoms being melancholic; but from this he also recovered, kept well for a time, then had another attack of mania, which ended in secondary dementia.

Lives that looked full of promise are sometimes blasted on

the threshold of what seem most brilliant careers, as in the following case of K. R., æt. 20. Heredity very neurotic, mother being very nervous, aunt insane, and father drunken. He had been a most brilliant and successful student, and he had poetic gifts that made his friends look forward to his future with much enthusiasm. His illness came on when he was reading hard, sleeping little, supporting himself by teaching, and also perhaps further exhausting his energy by illicit sexual indulgence. Without any proximate cause he became much exalted in mind and much excited, sleepless, and fell off his food. The common remedy of enormous doses of morphia was resorted to, which caused sleep, but he was no better for it, and after it would take no food whatever. When he came to the Asylum he was quite incoherent, raving about religion and women. His tongue and lips were dry; his temperature 99°; pulse 144, small and thready; and his general strength small, though his maniacal muscular energy was great. I could get him to take no food, so at once fed him with the stomach-pump. He had to be put in the padded room at night on account of his delirious violence, but was taken out each day into the fresh air by three good attendants. He began to take his food after a few days, but remained acutely excited for a fortnight. Then there was a remission, but the mania came on again, as indeed it did all through his case, by spurts. In about three months he began to be more coherent, and wrote some poetry. As it illustrates the common mixture of religious and sexual emotion in this and most of those cases very graphically, I quote some of it here:—

A SOLEMN ANTHEM IN CELEBRATION OF THE NEW JERUSALEM.

O, Rosaly, my warm and panting girl,
Just image to yourself the gates of pearl!
The angels sitting in illustrious row,
Kissing their hands to the Holy Ghost below
That glorious unimagined mystery,
The very hot and lovely Trinity,

Afar they see the lake of crystal shine,
Filled with the juice of maidens' paps divine
They hear the sappy sound of neighbouring love
And kisses, sacred as the brooding dove.
They look unto the Great White Throne and laugh.
Christ plies the Virgin with luxurious chaff;
Jehovah feels the Queen of Sheba's beauty.
And refers to the loveliness of Duty.
The Devil reads the Sermon on the Mount,
And adds a little on his own account.
And so they sing their wicked songs together,
While God in anger frowns upon the weather.

His bodily health and strength gradually improved, his beard and whiskers sprouted in great luxuriance, but his mental power did not return. He continued to write poetry, but it got more and more incoherent. He called himself at times "Jesus Christ, Prince Algernon Swinburne," though this was scarcely a fixed delusion. He had been an intense admirer and great reader of Swinburne's poems, and, as in the specimen given above, all his insane poems were influenced by the rhythm and perhaps by the early ideas of that poet. The treatment adopted was the same as in the previous case, but to no avail as regards his recovery. The change to another asylum was tried, but did not rouse him. He sunk into dementia in about two years.

The following patient was not a head worker:—K. S., æt. 21. A quiet, steady, and intelligent fisherman; stout, ruddy, and strong in body. He came of one of the families of the fishing village of Newhaven that must have had some very unstable mental stock introduced into them many generations since, and that have intermarried for many years, and in many of which now there is an enormous amount of insanity or epilepsy. I know one such family of which twelve members out of four generations have been in the Asylum, brothers and sisters and cousins, some of them maniacal, some melancholic, some epileptic, some idiotic, and many of them dying of phthisis. In four-fifths of them those neuroses appeared first during adolescence, this being most marked in

the younger generations. If any proof were needed of the supreme importance of hereditary influences in the production of mental diseases and epilepsy, and the small influence of healthy conditions of life in counteracting these hereditary influences in many instances, I would point to the village of Newhaven. The people are well-fed fisher folks. They are robust and handsome. Most of the "bonny fishwives" that are so picturesque an element in the street scenes and street sounds of Edinburgh belong to this village. The life they lead is a natural outdoor one, and yet insanity is more common among them than in any community of a similar size I know. That fact, along with others, notoriously the frequency of insanity among the old families of the Society of Friends, the most self-controlled and virtuous of all religious sects, is a complete answer to those who say that mental diseases are mostly due to drink and vice and the manifestly bad and unnatural conditions of modern town life. But to return to K. S. He at first behaved as if something was "preying on his mind," and when questioned could only assign as a cause a common dispute in a boat. This was no doubt the melancholic prelude to the attack. Then he became elevated, and then maniacal and violent. This lasted for about a week, and then he appeared to get well. In a few weeks he again became maniacal, and was sent to the Asylum. His bodily health seemed absolutely perfect in all respects. He was a fine, fresh, ruddy young son of the sea. He was set to hard work in the garden, and in ten days became rational and quiet, and kept well for three years. I noticed that during the three months he was in the Asylum his beard and whiskers, which were nascent on admission, grew out full and strong, so that, though he came in smooth-faced, he left a bearded man. He had a subsequent attack of a similar kind in three years, from which he also recovered, and the last I saw of him was when he came to tell me he was going to get married. No doubt he will have a numerous neurotic and insane progeny, for he looked in glorious bodily health and vigour.

This was a case in which there seemed absolutely no exciting cause whatever for the attack but the completion of the period of adolescence.

The last case I shall refer to is one where recovery did not take place, but dementia resulted. K. V., æt. 16. Has an aunt a patient in the Asylum. Had been a month ill before admission. He was excited, noisy, shouting, and dancing about. That was in 1878. For four years he was subject to attacks of acute maniacal excitement at intervals of a few months. In the first year they were very acute. This is a general rule. My experience is that the first attack or the second is apt to be the worst. In K. V.'s case the attacks got less acute after the first year, but in the intervals between the attacks he was less sane. A clouding process over his mind went on, each attack leaving him rather more enfeebled than the last. But he was once so well that he was tried at home for a short time. He gradually sank into secondary dementia, with rare and occasional spurts of restlessness and mild maniacal excitement at irregular intervals—a type of the healthy chronic lunatic that forms half the population of most asylums, and he is likely to live for many years. He can work in the garden, can answer simple questions, sleeps well, is not uncleanly in his habits, mingles in the Asylum amusements, but all his "higher nature" is gone. He cares little for his relations. His joys and sorrows are very mild. He has no interest in life, no ambition, no great sense of right or wrong, no volition in any higher sense, and no religious instinct.

Treatment of the Insanity of Adolescence.—The treatment I have lately adopted for such cases is founded on physiological considerations. The normal completion of the period of adolescence is in both sexes accompanied by a considerable deposit of adipose tissue, by an overplus of strength and activity, and by a state of general good nourishment of the body. To attain to this normal condition of body should undoubtedly be our aim in treating all cases of mental disease

at this period. It always seemed to me that there were two things that constantly worked the other way, and that I had to contend against in their treatment. These were the general brain excitability, and the morbid strength, and often perversion, of the generative nisus with the inhibitory power over it gone. The one tended to mania, sleeplessness, purposeless motor action, thinness, and exhaustion; the other to erotic trains of thought, sexual excitement, and masturbation. I found that inaction, reading, indoor life and amusements increased the one, while novel-reading, solitariness, and long hours in bed aggravated the other, while animal food and alcoholic stimulants gave increased strength to both morbid tendencies. I therefore put my patients to active exercise in the open air for as many hours a day as possible, walking, digging in the garden, wheeling barrows; I give them shower baths in the morning when the weather is suitable and they are strong enough, and I encourage active muscular exercise in every way. Athletic games of all sorts in the open air are certainly good as far as they go. I place great reliance on the diet. Milk in large quantity, and as often in the day as possible, bread, porridge, and broth are the staple articles of food for such patients here. My friend Dr Keith, of this city, was the first to direct my attention to the advantage of a light farinaceous and milk diet in another class of cases, and my experience is strongly in favour of his views. The patients may have some fish, or fowl, or eggs, but in reality milk is the most important means of treatment. I seldom give such cases alcoholic stimulants. I give to all such patients who can take and assimilate it easily an emulsion of cod-liver oil, hypophosphite of lime, and pepsine, made and flavoured in such a way that it resembles cream or extract of malt. I find very few indeed who cannot take this. Beyond this, an occasional bitter tonic, with sometimes a chalybeate or some of the new compound syrups of the phosphates, are about all the medicines I give. The effect of this diet, regimen, and treatment is very marked in the majority of cases. No doubt

during the first part of the attack patients may lose weight while the excitement is in its most acute stage; but they soon begin to gain weight, and my prognosis is always favourable when I find a patient beginning to gain weight within a reasonable time, say six months or so. I have had patients who, in spite of very sharp excitement indeed and much sleeplessness, gained weight under this treatment. It seems to me that the process of fattening such a patient, and the conditions under which it takes place, are antagonistic to the disease and its results. I have known the stopping of the cod-liver oil to be followed at once by a loss or diminished gain in weight, and its resumption to be followed by the former rate of increase. If a young man or woman suffering under the insanity of adolescence is found to gain one or two pounds a week within the first three months, I look on him as pretty safe. It is common to gain a stone in a month.

I have now pursued this plan of treatment long enough to yield results that can be relied on, and I believe that more of my patients recover than before I adopted it. They recover sooner, and their recoveries are more reliable and permanent. Even in the case of those who sink into dementia, I think they do so more quietly and with less of the element of chronic mania than under a flesh diet. It is, I think, certain that the habit of masturbation, which is so frequent and so deleterious in such cases, is less practised by patients on this diet, and, when practised, is less damaging to brain function, and takes less hold on them.

Prophylaxis.—Lastly, in connection with this subject, I would say a word about prophylaxis in children with a strong neurotic inheritance. My experience is that the children who have the most neurotic temperament and diathesis, and who show the greatest tendencies to instability of brain, are as a rule flesh-eaters, having a craving for animal food too often and in too great quantities. I have found also a large proportion of the adolescent insane had been flesh-eaters, consuming and having a craving for much animal food. It is in such boys

that the habit of masturbation is most apt to be acquired, and, when acquired, produces such a fascination and a craving that it may ruin the bodily and mental powers. I have seen a change of diet to milk, fish, and farinaceous food produce a marked improvement in regard to the nervous irritability of such children. And in such children I thoroughly agree with Dr Keith, who in Edinburgh for many years has preached an anti-flesh crusade in the bringing up of children up to eight or ten years of age. I believe that by a proper diet and regimen, along with other means, we can fight against and counteract inherited neurotic tendencies in children, and tide them safely over the periods of puberty and adolescence.

Statistics.—The following is a statistical and clinical inquiry into the subject of the insanity of adolescence. For this inquiry I took for the period of five years and a quarter (from 1874 till the end of the first quarter of 1879) all the cases that were admitted into the Royal Edinburgh Asylum. They amounted to 1796—917 men and 879 women. Of these, 320 were between the ages of 14 and 25, viz., 195 males and 125 females. Now, if my object had merely been to arrange those 320 patients each in a classification of symptoms, it would have been simple enough: so many with exaltation under "Mania," so many with depression under "Melancholia," &c. That was done, but a great deal more information must be expiscated about each case if we are to arrange them in clinical or physiological groups, and especially if we are to have any light thrown on the question—"Did adolescence influence the mental symptoms present in those cases?" We must ask and answer the following inquiries:—"In how many cases did the disease exist before the age of 14, or was of a kind with which adolescence could have nothing to do?" I found I had to deduct 90 such cases, or about one-third of the 320, those having been mentally defective or epileptic from birth, or at very early ages, or laboured under organic disease, or in

whom the disease came on in nursing or childbirth, leaving 230 in whom it was possible for puberty or adolescence to cause or influence the disease.

The next inquiry naturally was—"If 230 occurred in the twelve years between the ages of 14 and 25, is that proportion greater or less than is found in the same number of years at other ages?" I find it to be far more than between 2 and 14, but less (10 per cent.) than between 30 and 40. At this particular age, either from adolescence or some other cause, it is clear that there arises a liability to insanity which did not before exist, but which does not cease when adolescence is past.

The next query was this:—"Taking this long period of twelve years, is there any special liability during any of the years of that time?" "Does it arise at puberty, or towards the completion of the period of adolescence?" A glance at the numbers who became insane in each of the twelve years shows that the first two, that is the 14th and 15th, were especially exempt, only producing one case each; and the next two, the 16th and 17th, also very few (22). Now, the fact that there only occurred in those four years of life 24 cases out of about 1800 in all (230 of them being adolescents and healthy up to that period), does show clearly that the first onset of the reproductive function is not a dangerous one as regards liability to insanity, however liable it may be to chorea, epilepsy, and other neuroses of development.

The next three years—the 18th, 19th, and 20th—were still low, producing only 49 cases, or an average of 16 in each year. In those three years, while puberty has occurred in nearly every individual of both sexes, yet adolescence has been completed in very few of them.

It was in the next five years, from the 21st to the 25th, that the vast majority of the cases occurred, viz., 157 of the 230, or an average of 31 in each year as compared with an average of 8 for each of the first five years. At 14 and 15 the liability to insanity was practically *nil*, from 21 to 25 it was

very great. In fact, a comparison with the liability at other ages during the past five years in the admissions to the Asylum shows that there is no period of life where *uncomplicated* insanity occurs more frequently than during the completion of the physiological era of adolescence, from 21 to 25 (see Plate V.). It must be kept in mind that I am not now speaking of the numbers becoming insane in proportion to the number of the general population alive at any particular period. Those statistics are confirmed in the main by those of Lewis.[1] Comparing the two sexes, the proportion of females is smaller in the adolescent period than at later periods of life.

Symptoms.—Having elucidated those points, we come to the question as to what mental symptoms these adolescents suffered from, and if those symptoms were in any way peculiar? While investigating this, I found the complications of marriage, child-bearing, and lactation in the females so common after the age of 21, that it was difficult to compare them with the males. I therefore made 21 the limit of age for them. This reduced their numbers to 40, making, with the 140 males, 180.

The first fact of importance is, that there were only 40 cases where the symptoms present were classed as states of mental depression, while the rest were cases of exaltation. Now, the significance of this proportion is only seen by comparison. During those five years there were admitted nearly two cases of uncomplicated mania to one of melancholia (849 to 439), whereas among the adolescents it was $3\frac{1}{2}$ to 1 (140 to 40).[2] And if we compare them with those at more advanced ages, *e.g.*, women at the climacteric period, the proportion of mania to melancholia is then reversed, there being one case of the former to $1\frac{3}{4}$ of the latter.

[1] *Text-Book of Mental Diseases*, by W. Bevan Lewis, p. 334.

[2] During the past seven years, 1890–97, the number of melancholics have been about equal to the cases of mania. This I attribute to the effects of the influenza on the brain constitution of the community.

The proportion of states of exaltation of mind or mania, therefore, is much greater as compared with those of melancholia among the adolescent insane than among the insane at all ages, this excess being still more marked when compared with the cases of mental disease occurring at the climacteric period of life.

A Relapsing Mania.—The next inquiry was—"What was the character of the mania?" I found it had several well-marked characteristics. It was, in the first place, often of a very acute, though seldom of a delirious type; in the second place, it was mostly of short duration, the patients getting soon apparently quite well; in the third place, the patients were subject to constant relapses. Out of the 180 cases, 118, or 66 per cent., had such intermissions of insanity with subsequent relapses. This tendency to short sharp attacks, with intermissions of more perfect sanity than occur in most other kinds of mental disease, with relapses occurring one, two, three, four, and five times, and even more frequently, before recovery or dementia finally takes place, may be taken to be especially characteristic of this insanity of adolescence, In many of them, as the maniacal attacks passed off, there was a slight tendency to melancholia. This was noticed in 62 cases. In a few cases headaches came on and evidently took the place of the psychoses. This relapsing character, with the tendency towards depression, brings adolescent insanity into relationship with *folie circulaire.* The real cause of the remissional character of both is no doubt the periodicity of the generative power and desire.

Heredity.—Another well-marked characteristic was this, that a hereditary predisposition to mental disease, or at least to some of the graver neuroses, was on careful investigation found to be present in 65 per cent. of the adolescent insane. It is very difficult to get family histories of insanity in most cases, and you may often multiply by two those you get, if you want an approach to the truth, at all events if you take in the graver neuroses. Our proportion of hereditary predis-

position in the Asylum, as recorded in our Case-Books, is only 23 per cent., as compared with 45 per cent. among the adolescents, in whose cases no special pains had been taken to ascertain family histories. I observed a still more striking fact in regard to the heredity of the insanity of adolescents. I happened to have a personal knowledge of the history of the cases or of the families in fifteen of the cases, and in twelve of these, or 80 per cent., there was a hereditary predisposition to the neuroses. It is a common enough fact to have the children of a neurotic couple, one or both being highly intellectual, sensitive, artistic, and religious, but wanting, it may be, in stability, or common sense, or self-control, yet with no insanity nor epilepsy—it is common to find one or more of the children of such a couple subject to adolescent insanity, instinctive immorality or hysteria. The insanity of adolescence is therefore predisposed to, in most cases by a nervous heredity, being in fact the most hereditary of all forms of mental disease.

Sexual Tincture.—Another marked character of the mania was that the ideas, emotions, speech, and conduct were all strongly tinctured by the normal mental characteristics of adolescence in an exaggerated or morbid way. That perversion of the sexual act, the habit of masturbation, was very common, probably existing in over 50 per cent. of the cases, aggravating the symptoms and diminishing the chances of recovery. In the females hysterical symptoms were common, such as mock modesty, simulated pains, and a desire to attract attention. In the males heroic notions, an imitation of manly airs and manners, an obtrusive pugnaciousness, and sometimes a morbid sentimentality were present. In almost all the cases the physical appearance of the males was boyish when the attack commenced; and most of the females were girlish rather than womanly in contour.

Results of Treatment.—As regards the results of treatment in those cases, 93 were discharged recovered, or 51 per cent.; but then 40 were removed home or to other institutions re-

lieved, many of whom would have been likely to recover ultimately. I only know of 26 of the 180 who became incurable. Insanity occurring at the adolescent period is therefore a very curable disorder as compared with many other forms, though not so curable as some forms, *e.g.*, puerperal insanity. Just before recovery, in almost all the cases which did get well, signs of physiological manhood appeared, the beard growing, the form expanding, the weight increasing. Whenever I see those signs, accompanied by mental improvement, I am inclined to give a favourable prognosis. The mortality was very low, only three of the 180 cases having died.

Adolescent Psychoses not amounting to Insanity.—There are a series of lesser mental and moral changes and perversities short of technical insanity that are liable to occur in adolescents of both sexes who have hereditary weakness, often more difficult to treat, frequently as distressing and always more obscure, but all due to the same hereditary and pathological causes and of the same essential nature as insanity. They consist in some cases of stupidity and lethargy, or in an a-social development when all the social instincts should be most keen, or in causeless aversions to father, mother, or other near relations, with intolerance of control and utter disregard of parental feelings—all the time, perhaps, getting on well with strangers who don't live with the patient. Or we have a general incompatibility of temper, the patient losing situations, quarrelling with friends, and making enemies everywhere. Or it takes the form of visionary scheming, or of frothy religionism, or of sudden immoralities contrary to the tenor of the past life. Or new and causeless immoralities show themselves—such as stealing, violence, or murder. It is a striking fact that one-half of all first convictions are in the cases of offenders under the age of 25. There seems to be an adolescent form of criminality as well as of insanity. Or perverted sexual and reproductive ideas and acts show themselves. Sometimes the neurotic adolescent shows a simple diminution of the volitional

power, showing fickleness, irresolution, morbid "laziness," and paralysis of volition. I lately saw a young gentleman of 20 who said "something came on" him that prevented him using his muscles, so that, *e.g.*, in the midst of his breakfast he could not raise the spoon to his mouth. I was once consulted about the case of a lady who, up to the age of 14 or 15, had been as other children, but who, since that time, has been the despair of innumerable governesses and teachers, and the family skeleton at home. Clever intellectually, especially in defending her perverted conduct and in making preparations to shock her parents, not given to gross immorality, yet she seemed to exhaust all the arts by which disobedience, lying, and outrageous unconventionalities of all sorts could break her parents' hearts. She only showed affection or consideration towards strangers, animals, and oddities, and she only professed sympathy with the low, bad, and unfortunate. Respectability was an unpardonable offence to her. Yet she would pass muster among strangers for a month at a time as a clever, interesting, and original girl. She ultimately married one of her father's labourers and became a frugal farmer's wife, "dropping" all her former acquaintances.

LECTURE XVII.

THE INSANITIES OF DECADENCE.

CLIMACTERIC INSANITY.

The climacteric; physiological and psychological characteristics of period; melancholic symptoms in 64 per cent. of the cases, and maniacal symptoms in 36 per cent.—*Mental Symptoms* in a typical case; loss of keen interest in life; fits of depression; capacity for work diminished; irritability; suspicion; *sense of fear and impending danger;* change of connubial affection; suicidal longings; vague melancholic delusions—*Bodily Symptoms:* Sensory neuroses; vertigo; pains; sensations of heat; vaso-motor neuroses, flushings, &c.—*Motor Symptoms:* Restlessness—228 climacteric cases out of total of 3145, or 7·2 per cent.—*Prognosis:* Fair; 53 per cent. of uncomplicated cases recover—*Treatment:* Change of scene; travel; change of air and of diet; iron and quinine; sea-bathing; fresh air; fattening diet; the bromides.

As unstable brains are apt in certain cases to be upset in their mental functions by the slow development of the reproductive power and the onset of the sexual function at the periods of puberty and adolescence, so they are apt to suffer as those great powers of the organism pass away at the climacteric period. An animal has functionally and physiologically three distinct periods of existence—(1) when its life is dependent on that of its mother before birth; (2) when it lives independently, but cannot reproduce itself before puberty and after the climacteric; and (3) when it both lives and can reproduce. The mental function is non-existent in the first period, more or less imperfect in the second, and fully developed in an ideal sense only in the third. There are some animals low in the scale in whom

the reproductive act is always followed by death. At the period of the climacteric there is unquestionably a mental change in both sexes. The sexual desire, after a short period of irritable aggravation perhaps, invariably weakens in its intensity or ceases altogether, and with it the affectiveness changes in its object and greatest intensity from the mate to the progeny, losing its imaginative force, its fire, and its impulsiveness. Poetry and love tales then cease to have the power "to set the brain on fire." Action of all kinds ceases to be so pleasurable for its own sake as it has been before. Much of "the go" is out of the person. The instinctive feeling of difference of sex, and all that it implies, which has been all-pervading before, now lessens visibly. The subtile interest of the society of the other sex is less electric and overmastering. Along with these affective changes there are bodily changes too. The form alters, especially in women, and the expression of face changes, the ovaries shrivel, Peyer's patches lessen in bulk, and the spleen and lymphatic glands harden. The blood-forming and the blood-using processes slacken in speed, and the trophic energy in all the tissues is less intense in action. "Life becomes slower," in fact, mentally and physically. And as a result of this, after the climacteric has been safely passed, the organism is less liable to many diseases than it has been before. The real climacteric in both sexes is never a definite fixed time, but usually extends over a year, or two, or three, or even more. The mere cessation of the function of menstruation in women does not necessarily fix definitely the mental and nutritional changes that mark the period. I have known a woman of 50 who had gone through the mental changes of the climacteric, in facial expression and in form was post-climacteric, who had no sexual desire, yet was menstruating regularly; and, on the other hand, I have known many women of the same age, in whom menstruation had ceased from 40 to 46, who were yet quite shapely, amorous, and mentally youthful. So the mental disease that

accompanies the climacteric need not be quite coincident with the menopause, but may occur some time before or some time after that event. As a matter of fact, the ordinary sensory nervous symptoms that are connected with the climacteric in women, viz., giddiness, flushings, flashes of light, uneasy organic sensations, &c., usually precede the actual cessation of the menses rather than accompany it.

A Typical Case.—A typical case of climacteric insanity begins by a loss of energising power, bodily and mental, of which the patient is rather supersensitively conscious. Her courage is less; little things come to have the power of annoying her that she would have thought nothing of before. Groundless fears, which at first she knows to be groundless, haunt her at times. And at this stage the sleep is apt to be dreamy and broken, the appetite for food is less intense, and the bowels costive. There is apt to be some falling-off in the bloom of the complexion and in looks generally. The skin often gets muddy, and more pigmented than usual. It is a trouble for her to go into company or to move about in public, and yet she has little restful feeling and no contentment or organic happiness. At the menstrual times all these things are much worse, and there is apt to be real depression of mind, weeping, with irritability of temper and sleeplessness. I have never yet met with a climacteric case in this early stage who did not feel much better in the open air than in the house. That is an indication of treatment and of prevention of further symptoms that I never fail to find useful. I have seen iron at this stage, too, do very much good; in fact, sometimes it seemed to act as a specific. But those mental symptoms do not constitute insanity, though they have a close kinship to it.

The next stage consists of more real and continuous depression. The morbid fears and fancies assume a more intense character, though they are often indefinite. The patient is quite sure some evil thing is going to happen to her, though she cannot tell what it is to be. The self-control is often lost,

but much more frequently the patient is terrified that it is going to be lost. There are vague impulses towards suicide, sometimes towards hurting husband and children, and the existence of those add to the terror and intensify the depression. Such things are thought by the patient to be "so wrong," and she blames herself for them. A conscious loss of affection, or rather a loss of the pleasurable feeling that conscious affection for husband and children gives, is a cause of the greatest distress. There is often a sort of organic repugnance to the husband and to his attentions. By this time all the usual sensory accompaniments of the climacteric have disappeared, or rather they have been transformed into the mental neurosis I am describing. There are no headaches, nor giddiness, nor flushings. But the trophic neuroses become aggravated all the time. The thinness, the flabbiness of muscle, the pigmentation of skin, get worse. There are frequently skin irritations, and the patient picks and scratches her skin. The bowels are costive, the appetite is gone, the sleep absent, and the capacity for work greatly lessened.

In the worst cases suicidal feelings are strong and attempts frequent, but they are rather apt to be feeble. The very loss of courage and vigour of will operate against any effectual attempts at suicide, however much the wish may be there. Hallucinations of hearing are frequent. This condition may pass into acute excited melancholia and exhaustion, and death ensue, or it may become a sort of chronic shy uselessness, or "paralysis of energy," or it may gradually pass away under proper treatment and conditions of life, and the woman become strong, cheerful, well-nourished, and useful, sometimes more "healthy" in a certain sense than ever before.

The following is a case of climacteric insanity, of short duration but very acute form, and with an element of stupor: —

K. V., æt. 46, of a cheerful and sociable disposition, and good habits, but with some heredity to insanity and the neuroses, a sister having been insane, and a child having died of hydrocephalus. My impression is that, of all the expressions

of a heredity to insanity in childhood, hydrocephalus is, next to convulsions, the most common. The whole question of the transmission of the neuroses to children by mothers who are then to all appearance healthy, and in whom any nervous disease is a mere potentiality, is very interesting, and stands in need of accurate observations. The weak and troublesome point of all studies of heredity is, that they cannot be regarded as complete till all the subjects of them are dead. K. V. had over-exertion of body and anxiety of mind in nursing her husband and through his death, just as her menstruation was becoming irregular, this being the exciting cause of her attack. She had not many of the usual sensory accompaniments of the climacteric. She never slept well after her husband's death. In about two months thereafter she became depressed, and suspicious that her neighbours had an ill-will to her and that everyone was against her. It is easy to see how a lone neurotic widow with a family to support should take such ideas. But by and by she began to fancy that her friends put poison in her food; no doubt this was the misjudged sensation of the pain of dyspepsia. Then she began to groan most of the time, and to cease to attend to her work, or to take an interest in anything, her whole mind being absorbed in her morbid thoughts. On being sent to the Asylum, she picked up to some extent at once, exercising all the self-control she was capable of, the very unpalatableness of the situation rousing her. She was thin and dark skinned, and had a dull, listless look. Her sensibility to pain was dulled, there being an element of mental stupor in her case. The tongue was furred and tremulous, and the bowels costive. Her pulse was 88, and weak; her temperature 99·3°; and her weight only 8 st. 8 lbs. She was much depressed and confused, mistaking the identity of people about her. She slept very little at first. Her appetite was poor, and her notions of cleanliness and decency were meagre. She was ordered quinine and iron, warm baths, exercise in the fresh air, simple laxatives and proper supervision and nursing. In a fortnight

she was sleeping better, in a month she was sleeping well. She took plenty of food, occupied herself in useful work, and her skin began to look clearer and more healthy. Her fears and delusions became vague, and with less influence on her demeanour. She would then take a good fit of crying, which did her good. In another month she had gained over a stone in weight, and was fairly convalescent, and, being much needed at home, was sent there perhaps earlier than might otherwise have been desirable. The disease in such short cases has little tendency to recur. When she left she was getting the post-climacteric look in face and form.

The following case is one where the symptoms of climacteric insanity came on several years after the menopause, and were never very acute, yet the woman did not get over them for seven years. She was rational in conversation, and had no delusions, and her depression was by no means acute for several years, but she was so absolutely devoid of initiative power and energy that she remained voluntarily in the Asylum, being quite unfit to do her work in life. K. W., æt. 51, a widow, a healthy, cheerful, active woman, who had two children and no heredity to insanity. About 45, so far as she remembers, she ceased to menstruate, this being accompanied by fearful headaches, feeling sometimes as if she would "go out of her mind." Those headaches continued more or less up to the onset of her present attack of melancholia, but she did not change in facial expression, and did not lose her shape, in fact did not exhibit the usual bodily signs of having passed the crisis, till the depression of mind began to appear. At 51, without any cause, she became depressed in mind, nervous, anxious, and fearful. She gradually developed the delusion that her friends wished to take her life. She was sleepless, and once threatened to throw herself over the window. She lost all hope and courage and interest in life. She got occasionally excited and lost her self-control, which was the cause of her being sent to the Asylum; but during the six years she was there she never showed any sign of

excitement, except on one occasion slightly. She was a dull, anxious, retiring person, morbidly fearful of giving offence, and having a dread on her that something fearful was going to happen to her. She slept well. She did what she was told without interest. She had vague semi-delusional ideas that her friends were all dead, that the people here seemed to be the same as her former friends, that the things and people about her were not real. She had those feelings, yet she did not really believe them. She had pains and numbnesses in her joints and her limbs, probably neurotic in origin. She ate well,—far more, she said, than she ever did before,—looked stout and well, slept well, and was muscularly strong, though not alert or active. She led a despondent life, with no joy in it at all and no interest in anything, but with little intellectual impairment in the sense of dementia. She was very nearly but not quite well in mind for seven years. I have seen many such cases recover after several years. Hers appeared to me just an exaggerated and slightly morbid type of post-climacteric physiological and psychological decadence.

Some of the cases take a long time to recover. I never give up hope of recovery in a climacteric case for five or six years, except there are symptoms of dementia or fixed delusions. The physiological period of life not being a fixed nor always a short time, its nervous and mental accompaniments are often prolonged and irregular.

The Climacteric in the Male Sex.—The period of the climacteric in the male sex occurs at a later time of life than in the female, and is much more irregular and indefinite. There is nothing to mark it off so clearly as the menopause. Sexual power remains, but the appetite for it is not in normally constituted persons keen or pervading, and there is a diminished procreating capacity. There is little or no self-control needed to restrain it, as in earlier years, and indeed it is commonly dormant, except when stimulated. The common age for the "grand climacteric" in man is from 55 to 65, a few cases occurring before and after those ages. The popular

tradition puts it at 63. The procreative power of man has been demonstrated by statistics to become progressively less after 50, and to be in reality small at the later ages. The normal mental change in man is essentially the same as in woman, but not quite so marked in some particulars.

The abnormal mental changes that are seen in some cases at the climacteric period in men are the same in general type, too, as in women. The spontaneity, the courage, the mental aggressiveness, the necessity to energise actively, the poetic sentiment, the keenness of feeling in all directions, all these are impaired. There is no drawing towards the other sex, and no subtile delight in its presence. The sleep is less sound and shorter. A cloud of vague depression rests on the man, who shuns society, falls off in fat, becomes restless and hypochondriacal, and feels strongly the *tedium vitæ*. This may go on to suicidal longings and desires, which are usually not very intense. In fact, nothing is intense with the man. His energies, his functions, and his vitality have all been lowered. With this there is no atheroma, *arcus senilis*, or proper senility. But some cases go on to suicidal and resistive melancholia.

The following was an aggravated case of climacteric insanity in the male sex:—

K. X., æt. 56. A quiet man, of melancholic temperament, steady and industrious in his habits, and with no known heredity to insanity. Lately he had little work and not much food, and was therefore anxious and underfed. He gradually became dull, and possessed with the fear that something dreadful was going to happen to him and his family—a fear founded on realities at first, but gradually assuming a delusional character. He became taciturn and wearied of his life, ceased to take any interest in anything, and could not be roused. One morning, just before coming into the Asylum, he told his wife to get up at once and conceal herself, as he had a strong desire to kill her and others. On admission he said he felt very badly, that strange and frightful ideas came into his head and preyed on his mind. One minute he was

looking the picture of misery and sitting quite still, then he would lose control over himself and become restless and impulsive, and strike and bite those near him. He was thin, pale, flabby in his muscles, and his skin dark, muddy, and pigmented. He had been blistered at the back of his head before admission—blisters are good treatment for some cases of insanity, but not for a half-starved melancholic workman at the climacteric. He had a vague indefinite dread on him, and an absolute lack of interest in anything in life, though his memory and general intelligence were good. His tongue was foul, his bowels costive. There were no visible signs of atheroma of the arteries. He took his food fairly well at first, and was ordered extra diet, porter, and Parrish's syrup of the phosphates. He improved considerably for the first six months in body and mind, but he never got to enjoy life or to be sociable. After that time he got worse, did not take his food well, and fell off again in flesh. Everything was done to improve his appetite, and nourishment, quinine, cod-liver oil, the phosphates and hypophosphites, garden work and amusements, were all tried, but he got steadily worse. He became more solitary and silent. His blood got so abnormal that at one time purpuric spots appeared over his legs. His delusions assumed more of a hypochondriacal character before his death, which took place two and a half years after admission. He thought all his organs were diseased, and that he had no stomach. He died suddenly at last, being then a mere skeleton from exhaustion. The brain convolutions were found to be atrophied and very anæmic ; the arteries had begun to show the atheromatous degeneration ; there were some granulations on the floor of the fourth ventricle, and the lateral ventricles were dilated and filled with a pink serum. There was a patch of white softening, about the size of a filbert, in the centre of the left hemisphere. The aorta was markedly atheromatous. This case had not had during life any of the distinctively senile mental characters, yet the pathology was undoubtedly like that of many senile cases.

But it was a case of a man slowly dying all over when his reproductive energy failed.

Of a much more common type was the following less aggravated case:—K. Y., æt. 57, a professional man, who had worked very hard indeed. He had a slight and distant heredity to mental disease. His professional work became a burden to him, and he lost all confidence in doing it, so that he had to give it up. He did not sleep well, became much depressed, and was very miserable, obstinate, and hypochondriacal. He had quite made up his mind that he was not to get better, and would do nothing towards his own recovery. He did not lose his self-control. He simply changed his habits, avoided his friends, neglected his personal appearance, was absolutely idle, and might be said to have become morbidly "selfish." With all this there was apparently no lack of reasoning power or general intelligence, and this made the whole thing the more trying to his friends. When a man who manifestly cannot reason acts unreasonably allowance is made for him, but when a man acts unreasonably who can reason, the natural impulse is to blame him and hold him fully responsible. Fortunately he did not give up going out into the fresh air, and this was his ultimate salvation, for he slowly improved, and in the course of about five years he got perfectly well, and resumed his business, though he never could do as much, and was never "quite the same man," but was about as happy as the average of his fellowmen in their post-climacteric. No doubt if he had taken to his bed, or to staying in the house, as so many such cases do, he would never have recovered. In his case, as that of many others I have met with, the first decided symptoms of mental improvement were coincident with an eczematous skin eruption. I have seen gouty, syphilitic, and all sorts of skin eruptions come on in such cases during the disease, usually greatly to the patient's mental benefit.

Statistics.—The prognosis and other points in climacteric insanity are best brought out by a statistical study of a

number of cases. In the nine years (1874–82) I have diagnosed as such 228 cases of the 3145 that have been admitted into the Royal Edinburgh Asylum in that time. Of these the large porportion of 196 were women, only 32 being men. The following table shows their ages:—

Ages.	Males.	Females.	Total.
35 to 40	...	17	17
40 ,, 45	...	74	74
45 ,, 50	...	81	81
50 ,, 55	7	19	26
55 ,, 60	14	5	19
60 ,, 65	9	...	9
65 ,, 70	2	...	2
	32	196	228

We see that by far the majority of the female cases occurred between 40 and 50, and the majority of the men between 55 and 65. As regards the symptomatological forms assumed by the cases, only 13 of the men and 56 of the women, or 18 per cent. of the whole, were acute in character. It is essentially, therefore, a subacute psychosis in its general character. Of the whole, only 82 were cases of mania, the remaining 146 being melancholic. One-half the patients were suicidal in intent at least, but few of them had made very serious or desperate attempts to take away their lives, though to this there were some exceptions. There was a high proportion, but a low intensity of suicidal impulse.

Curability.—The results of treatment showed that 112 cases, or 53 per cent. of them, recovered, the women recovering in the largest proportion. In fact, only 31 per cent. of the men got well, while 57 per cent. of the women did so. The numbers who died, on the contrary, were greater proportionately in the men than the women, 4 of the former, or 12 per cent., and 17 of the latter, or 9 per cent., having died up to this time. This would seem to indicate that the disease is

rarer, less curable, and more deadly in the male sex than the female; but the numbers are perhaps too few on which to base a correct generalisation.

Duration of attacks.—The patients who recovered had not been so long ill as I had previously imagined. Taking the time they were under treatment in the Asylum (the only correct basis I have on which to estimate the duration), 61 of the 122 who recovered, or 50 per cent., were discharged within three months, and 80, or 65 per cent., within six months, and 111, or 91 per cent., within twelve months. There were a few patients who recovered after two years of treatment. The maniacal and the melancholic cases recovered in about equal proportion, but the maniacal in shorter time. The recoveries were much fewer in the women over 50, only 29 per cent. of these getting better. Up to 50 they recovered equally well. At the other ages, from 55 to 60, the cases were the most curable in the men. Only 3 of the 11 over 60 got over their malady.[1]

SENILE INSANITY.

Represents a special intensity or an irregularity in the Physiological decay of the brain; premature and violent dotage; relationship to atheroma of arteries, to shrinking of brain, and to degeneration and atrophy of cells of convolutions—Out of 3145 cases 203 or 6·4 per cent. Senile; heredity not so common as in other forms of insanity —*Mental Symptoms:* Loss of memory; irritability; excitement; night noise; restlessness; one-third Melancholic, one-third Maniacal, and one-third slowly advancing Senile Dementia—*Prognosis:* Bad; not hopeless in all cases; 33 per cent. discharged from Asylum "Recovered," that being a manageable mild dotage in many cases; such "recoveries" mostly take place in cases not over 75; many died within the first month, showing that the mental symptoms were a part of a general break-down—*Treatment:* Nursing; care;

[1] These statistics may be profitably compared with those of Dr Merson's admirable paper on this subject, in the *West Riding Lunatic Asylum Medical Reports*, vol. vi. p. 85.

support; sedatives; stimulants; diet—*Pathology:* Senile insanity has a visible pathology in most cases; a gross lesion, "softening" found in 42 per cent.; vascular disease very common; atheroma and arteritis; atrophy in most cases; apoplexies in only a few cases; miliary aneurisms; cells atrophied and degenerated with processes fewer; chromatolysis; a general atrophy of neurine in some cases.

Physiological Psychology of Old Age.—The psychology of normal old age has yet to be written from the purely physiological and brain point of view. Poets, dramatists, and novelists have had much to say of it from their standpoint. King Lear is beyond a doubt a truthful delineation of senility, partly normal and partly abnormal. By normal senility I mean the purely physiological abatement and decay in the mental function running *pari passu* with the brain shrinkage and the lessening of energy in all the other functions of the organism at the latter end of life. No doubt, in an organism with no special hereditary weaknesses, and that had been subjected to no special strains, all the functions except the reproductive would decline gradually and all together, and death should take place, not by disease in any proper sense, but through general physiological extinction. The great function of reproduction stands in a different position from all the other functions of the organism. It arises differently, it ceases differently, and it is more affected in character according to the sex of the individual than any other function. It is, as a matter of fact, not entirely dependent on individual organs. It may exist as a desire and an instinct without testes, or ovaries, or sexual organs. It is probably an evolution from hunger, as Clevinger puts it. It is really an essential, all-pervading quality of the whole organism, and to some extent of every individual organ, not one of which has entirely lost the primordial fissiparous tendency to multiply. But the physiological period of the climacteric has determined and ended it in its intensity and greatest power, though many of its adjuncts remain; and in the male sex we have to reckon with it and its abnormal transformations to some extent even

in the senile period of life. Physiological senility typically means no reproductive power, greatly lessened affective faculty, diminished power of attention and memory, diminished desire and power to energise mentally and bodily, lowered imagination and enthusiasm, lessened adaptability to change, greater slowness of mental action, slower and less vigorous speech as well as ideation, impaired muscularity and co-ordination, a changed facial expression and tone of voice, fewer blood-corpuscles red and white, lessened power of nutrition in all the tissues, a tendency to disease of the arteries, a lessening in bulk of the whole body, but notably of the brain, which alters structurally and chemically in its most essential elements, the cellular action and the nerve currents being slower, and there being more resistance along the conducting fibres.

In the young man there is an organic craving for action, which, not being gratified, there results organic discomfort; in the old man there is an organic craving for rest, and not to gratify that causes organic uneasiness.

Dangers of Senility.—The three great dangers to normal mental senility are hereditary brain weakness, a diseased vascular system, and the effects of over-exertion or abnormal disturbance of brain function either at the time or at former periods of life which have left the convolutions weakened. Until the organ had begun physiologically to lose its structural perfection and its dynamical force, the pathological phenomenon that we call mental disease was not developed. As we shall see from a statistical study of clinical cases, heredity to insanity is less common in the cases of senile insanity than in any other form of mental disease except general paralysis; but there is this fallacy, that the facts about heredity are farther back and more forgotten in this than in any form. An old man's living relatives are few, and his ancestors' history far off. We may put it down as a certain law of nervous heredity, that the stronger the predisposition the sooner it manifests itself in life, and the weaker it is the later in life it shows itself. To have survived, therefore, the

changes and chances, the crises and perils of life with intact mental function till after 60, means only slight neurotic heredity or great absence of exciting causes of disease.

It is impossible to fix an age at which physiological senility begins, and therefore we cannot fix an age for senile insanity. Some men are older at 50 than others are at 70. I believe that in some cases neurotic heredity assumes the special form of early senility—that is, of early wear-out or poor organic staying power. Most congenital imbeciles and idiots grow old soon, many of them dying of old age at 30. Many of the insane do so too, and in many of them the beginning of the insanity is simply the first expression of the law of decay and death. Premature age in look characterises many of those who become insane after 45. Very many races of men grow old early, like the Kalmucs and Hottentots; but, roughly speaking, in our race one cannot call a man old till he is 60, though I have often met with senile mental symptoms between 50 and 60, and, as we know, atheromatous arteries and consequent tissue degenerations are common enough before then. But in speaking of senile insanity I shall include no one under 60 years of age.

Statistics.—Only 0·9 per 10,000 of the general population under 20 are sent to asylums in a year in England and Wales, while 11·4 per 10,000 over 60 are so sent, or about twelve times the proportion.

The best foundation for what I have to say of senile insanity will be the chief statistical and clinical facts recorded about 203 cases (71 males and 132 females) that have been classified under that heading in the nine years' admissions to the Royal Edinburgh Asylum, 1874–82. The total number of patients admitted in that time was 3145, and they were of all classes, from the sons of peers of the realm down to the lowest beggar. Of these, 304, or 9·6 per cent., were over 60 years of age. One remembers this better by thinking that one-tenth of them were over 60. But of these 304 cases only 203 were called by me senile insanity. The other 101 were mostly epileptics,

old cases of long-existing mania or dementia, or cases of climacteric insanity—that is, old age had acted as a predisposing or exciting cause of the mental disease, and the symptoms were more or less characteristic of senility in those 203 cases only. Six and a third per cent. of the whole admissions, or one-sixteenth of them, were thus cases of senile insanity. It is, therefore, a common, but not the most common, form of insanity, as compared with the other clinical varieties of mental disease.

The great predisposing cause of insanity, heredity, appeared to be, as I have said, very uncommon. According to our records, only 26 of the cases, or 13 per cent., were so affected. In estimating the frequency of heredity in mental disease, one has to add an enormous margin for ignorance and conscious or unconscious concealment of facts. In the nine years under review, 723 of the whole 3145 cases, or 23 per cent., were admitted to be hereditary. The senile heredity, therefore, was little more than half the ordinary average heredity.

Symptoms and Cases.—The form assumed by the different cases is a question of great interest. I confess I was myself astonished at the immense variety of mental symptoms present. Till I had these 203 cases analysed, I had not fully realised either the character or the results of treatment of this disease. Looking first at the presence or absence of mental depression or mental pain, I find that 69 of these cases, or about a third, were depressed, and classified by me as labouring under melancholia. To feel pain, mental or bodily, the brain needs to be to a certain extent sensitive and active functionally. But the peculiarity of many of the cases of senile insanity was, that the mental depression was merely outward in muscular expression, not being *felt* in any proper subjective sense, and it was certainly not remembered. *It was, in fact, automatic motor misery, and not conscious, sensitive, mental pain. One of the cases lately under my care illustrates this very well:*—L. A., æt. 83 at death. His mental power had been failing for three or four years. At first there was

failure of memory, irritability, exaggerated opinions of himself, morbid suspicions, sleeplessness, restlessness, and lack of self-control. These symptoms gradually got worse, until his memory was quite gone, and he did not know his age, or his wife, or his home. Yet his appetite was good, his health in some respects better than it had been before, for a gouty tendency had disappeared. He looked fresh and well, and his muscular strength in spurts was very great indeed. He had, a year or so after the beginning of the attack, a sort of hemiplegic attack, transient and slight; and ever since it began, and going along with it as one of the symptoms of the disease, there was a slight indistinctness of speech, a want of motor activity, and of perfect co-ordination in the articulatory muscles, a change in the tone of the voice in the direction of feebleness, a difficulty in finding words, a tendency to stop in the middle of sentences, an omission of words, especially nouns—in fact, the typical senile speech, with its mixture of aphasic, amnesic, and paretic symptoms. The senile speech I look on as just as characteristic as the aphasic, the general paralytic, or the hemiplegic speech, and just as illustrative of disturbed brain function. He had all the signs of advanced atheroma of his vessels.

About the middle period of his disease his memory was quite gone for recent things, and you could scarcely engage his attention for more than a few seconds on any one subject. At times, in fact mostly, he showed a kind of happy negative contentment. If you could get the thread of his old life, he would tell old stories, make speeches, and look as wise as possible; but all this time he did not know who you were, or where he was, or the day of the week, or the month, or the year, or what he had for dinner. Then suddenly, without any outward cause, a change would come over him. He would look most miserable, would moan, and groan, and weep (tearlessly), wring his hands, and utter disjointed exclamations of sorrow; but he could not tell you what grieved him, and in a minute or two he might be quite cheer-

ful, and he remembered nothing about it, denying that he was at all dull or ever had been so. Or he would at times suddenly, causelessly, become intensely suicidal, trying to strangle himself, running his head against the wall, or clutching his throat with his hands. In that condition you could not rouse his attention. He was, in fact, practically unconscious, and when controlled or prevented carrying out his suicidal attempts, he would struggle and resist desperately and unreasoningly. At other times he would have sudden homicidal attacks. But in half an hour after all this he would be calm, chatty, and utterly oblivious of everything that had occurred. The whole thing, in fact, the pain, the suicidal and the homicidal impulses, were so many automatic acts unaccompanied by motive, reason, or remembrance, and were the mere motor signs of some brain disturbance. All his worst symptoms used to come on at night, when he would become noisy, restless, shouting, resisting, and quite unmanageable, alarming the household and neighbourhood. Those symptoms wore out every one connected with him. Of all forms of insanity, the senile is apt to become most aggravated at night. It might be supposed that there could scarcely be any conceivable circumstances under which a man over eighty, with means enough to procure proper attendance, would have to be sent from his own home. Yet those circumstances occurred. Home treatment was a failure, and could not be any longer persisted in. Certainly he did better in a villa of the Asylum, living by routine, with plenty of fresh air and regulated exercise "little and often," regularity of life, lots of milk and eggs and digestible plain food, and good skilled attendance; getting fat and sleeping far better. But of course he slowly got more enfeebled in mind; his suicidal impulses became less intense, his noise at night less, and his resistiveness more controllable, but his motor restlessness remained. All his symptoms were irregularly periodic and remissional. For months he would be quiet, and then would have a few weeks of motor excitement, and night noise

and impulsiveness. What is the cause of these aggravations in senile cases,—and they are very common, almost universal? I really do not know. I presume one must look on them as being partly mere action and reaction, activity and exhaustion simply. Are they the results of a brain habit, an organic memory of the former reproductive periodicity? He died of senile exhaustion, but with resistance to feeding, restlessness, and noise to some extent, up till three days before his death.

It is very difficult to know how to classify such a case symptomatologically. There was undoubted dementia, and there was maniacal excitement. There were all the outward signs of suicidal melancholia, and the symptoms of true impulsive insanity. I adopt the rule, that wherever there is marked mental pain, or emotional depression, or the outward signs of them, the case is put down as melancholia in our books. L. A.'s case is an example of senile insanity of the melancholic type. But many of the cases of senile insanity classified symptomatologically as melancholia were entirely different from this case. Several of them were cases of simple melancholia that proved to be transient, its only special senile character being that it occurred in old people, was accompanied by greater loss of memory than usual, and the recovery it ended in had somewhat of normal senility in it. Several of the cases were caused proximately by bodily disease that exhausted the strength or lessened the blood-corpuscles, or by moral causes. It is quite common in my experience, and, I believe, in that of all medical practitioners, to find certain old persons much depressed in mind by any bodily disease. Notably I have seen this happen in the course of bronchitic or heart troubles, where the blood was not aerated. In fact, given a senile brain and heart, atheromatous arteries, and non-aerated blood, and we are pretty certain to have the mental functions of the brain affected. I am in the habit of speaking loosely of "cyanotic delirium" and "cyanotic insanity" from the non-oxygenation of the blood in bronchitic and cardiac disease. Others of my cases of senile melancholia

had fixed melancholic delusions. Intense suicidal feelings were rare, and very determined attempts still more rare, but we cannot depend on this rule in all cases, for I lately read in the newspapers of the suicide of a man of 90. Of the sixty-seven melancholic cases, seventeen were acute in symptoms, and fifty were mild.

Of the melancholic patients, 30 per cent. were discharged as technically "recovered"—that is, in some of them their worst mental symptoms disappeared, they passing into normal senility, and in some they became quite well in an absolute sense. *In the melancholic patients, speaking generally, the recoveries were apt to be better than in any other class of senile cases, as in the following example:—*

L. B., æt. 77, a man of a reserved disposition, steady and temperate habits. There was no known heredity to insanity. He had never shown any disposition to depression of mind before. He had done his modest work in life well; had brought up a healthy and well-doing family, and was an intelligent and religious man. His business was not prospering, and he became depressed and restless. He imagined he was eternally lost, that the diminution of his business was a direct judgment of God for his sins. This, in religious people, and in irreligious ones too, is a very common melancholic delusion, and the public will always have it that any kind of religious delusion or "religious insanity" is a very bad symptom in every case, and necessarily incurable. Now there is only a little truth in this. The idea has arisen, no doubt, from the fact that the cases with fixed delusions of a religious kind—the prophets of the Lord, the sons of God, the possessed with a devil—are usually incurable, and such cases make a very strong impression on the public mind. L. B. gradually got worse, and talked of committing suicide by throwing himself over the North Bridge—a fearfully suggestive and then low-parapeted place. After eighteen months of treatment at home, he got so ill that he was sent to the Asylum. On admission he was depressed, restless, unsettled, and talkative,

with religious delusions. He looked an old man, with atheromatous arteries, and there were senile cataract and marked heart disease; but his appetite was good, and his general nutrition and strength very fair for his age. He did not sleep well at first. He was ordered Parrish's syrup of the phosphates, cod-liver oil, with milk diet, and fresh air when the weather was suitable. There was a hypochondriacal character about his mental depression all the time. In about two months he had strengthened and improved. He became more obviously concerned about the state of his bowels than that of his soul. He was one of the melancholics — a numerous array—who heard "the clock strike every hour of the night." In about nine months he was almost free from the mental depression, and his memory had got better, while he looked quite ruddy and hale. In a year he was really quite well, and was sent to his home just as cheerful and more active than the average man of 78. He came out to see us for three years after, in no respect the worse, mentally or physically, for his interlude of two and a half years of senile depression and insanity, and he died peacefully at home in his eighty-fourth year.

Turning now to the cases that showed no melancholic symptoms, or, at all events, where such symptoms were not long continued or prevailing: there were 134 of these, all of whom having some sort of motor excitement were put down at first as cases of "mania." As I do not recognise "dementia" to be curable when used in a correct sense, I scarcely ever at first diagnose any recent case as such, no matter what the symptoms are at the time. To my mind, a patient is only proved to labour under dementia when, by lapse of time, he is seen to be incurable, and has the symptoms of mental enfeeblement as well. Many of these 134 senile cases were really cases of dementia, but I put them down as mania at first, because their enfeeblement of mind had not been proved to be incurable, and because they had more or less motor excitement. In only nineteen of these was the excitement so

intense as to be classified "acute mania." The mental symptoms in these 134 cases, like those of the melancholy cases, were very different in kind and degree, duration and result. Some were short, sharp brain-storms preceding death, outbursts of delirious excitement accompanying the break-up of the organism—acute old age. Instead of a long and gradually progressive failure of convolutional function, in such cases it ended in a quick and tumultuous fashion. Instead of mere loss of power from innate trophic failure and want of blood, in such cases there is a vaso-motor paralysis and a development of irregular cellular energy, expressed outwardly by constant talking, shouting, incoherence, loss of memory, loss of attention, sleeplessness, and, above all, by a constant motor restlessness by night and day, but especially by night. This was such a case:—L. C., æt. 78. He had been pretty well up to three months ago, and at that time the excitement and exertion of moving from one house into another seemed to exhaust him. He first became stupid and peculiar, and this came on suddenly, being noticed particularly one morning. He gradually became excited, incoherent, threatening, unmanageable, and his memory was lost; but for ten days only, before being sent to the Asylum, had he been very excited. The whole household and neighbours were disturbed by his noise, and his friends and his doctor decided that he must be sent to an asylum. On admission he was weak muscularly, spoke with the voice and articulation of a very old man; he was confused and his memory was gone. He said he was forty, and could not answer almost any question correctly. His heart's action was weak, and there were moist râles heard all over his chest, but there was no acute disease, his temperature being 98·4°, and his pulse 80. The left side of his face was slightly paralysed, and his pupils unequal. There was no paralysis of arms or legs. He did not sleep, and was noisy and excited all night. There was much difficulty in making him take his food, too. His bronchitis was bad, and his cough very troublesome. Within forty-eight hours after admission he got

pale and weak, his breathing became laboured, and he died suddenly that day. There was no *post-mortem* examination. His relatives naturally were very sorry they sent him to the Asylum, and were inclined to blame the doctor who recommended it. No doubt, if the result could have been foreseen, no one would have recommended his leaving home, but I do not think there were any definite symptoms present pointing to the result. When consulted about cases of senile insanity, I ask myself—"*Are those mental symptoms not the mere forerunner and accompaniment of a general break-up, a sort of ante-mortem delirium?*" And to answer that question it is desirable to go into the condition of the brain, the heart, the lungs, the kidneys, and the general strength very carefully. I am always suspicious of sudden oncomings of mania in old people being of this character.

The following senile case was typical in its inception, symptoms, incidents, duration, and pathology:—L. D., æt. 78. Had been hard-working, and as drunken as his limited means would allow. Senile insanity is often the penalty for an excessive use of alcohol in earlier life. About nine months ago he got a fall down stairs, and has not been so strong or well since. About six months ago his memory began to fail, then he became stupid and confused, then suspicious, then restless, then unmanageable, then violent to his wife, and was then sent to the Asylum as a pauper patient. On admission he was confused, slightly excited, very restless, his memory gone, his general condition weak, his senses blunted, his speech senile, his pupils irregular in outline, his tongue tremulous, his pulse 90, weak and intermittent, his temperature 98·2°, his lungs and other organs healthy, and his appetite good. He was well fed and nursed in our hospital ward, but though he gained in flesh he did not improve. He was restless, especially at night, became gradually dirty in his habits, moved about in a purposeless way all the time. The motor restlessness of a senile case is an extraordinarily vital phenomenon. He never sits down, seldom sleeps, he shouts,

and walks about his room all night, and yet never tires. I found that this symptom existed in 60 per cent. of all the cases. Whence the source of all this most unnatural muscular energy? It exhausts his small stock of real strength, though weakness is not felt. It is the antipodes of the quietude and disinclination for exertion of the normal old man. It must mean that in the brain-cells the normal inhibition over the evolution of energy is lost. Instead of being stored up, it is let out all the time.

About three months after admission, as he was aimlessly carrying a chair in the day-room, he slipped, falling down and breaking his right femur at the neck inside the capsule, an accident always liable to happen to a restless senile patient. He got on pretty well, being left in bed and nursed and cared for as well as was possible. In about two months the restlessness came on again, and in trying to rise he hurt his leg again. In about a month he died of exhaustion, having been ill for ten months. There was much difficulty in preventing the formation of bed-sores before death. The difficulty of managing such cases satisfactorily in an asylum or out of it is extreme. They are very restless, always meddling with something or somebody, very obstinate, entirely forgetful and purposeless. They are constantly making their water on the floor, in a corner of the room, or in another patient's hat. They need bathing often. Their bowels are either too costive or too loose. They are liable to retention of urine from enlarged prostate and bladder paralysis. They either eat too much or will not eat at all. A slight fall breaks their bones. To be near other maniacal or irritable patients is out of the question, for they are sure to get hurt. For them one requires to use the best attendants, the best heated single rooms at night and the best parts of a fully equipped hospital ward; and all this needs to be done by nurse and doctor under the depressing feeling that it is of no use in the long-run towards the cure of the patient.

On a *post-mortem* examination of L. D.'s case the pia mater

and arachnoid were found thick and opaque, but stripping freely off the convolutions, which were over the vertex of the brain atrophied and covered with an opaque compensatory fluid. On section the grey substance of the convolutions was irregularly thinned and soft in texture, the perivascular canals being enormously enlarged. In the extra-ventricular nucleus of the left corpus striatum there was a recent hæmorrhage, the size of a pea, and in the right optic thalamus one of the same size of older date. There was a small softening from embolism or thrombosis in another part of the thalamus. The lining membranes of all the ventricles were granular, and the lateral ventricles were enlarged from interstitial brain atrophy. All the brain arteries were atheromatous in patches, causing diminution of their lumen at these points. There was dilatation of the lateral ventricles; the aorta was atheromatous, lungs œdematous, liver slightly nutmeggy, right kidney disorganised and the seat of an extravasation of blood. On microscopic examination the large cells in the inner layers of the convolutions were found in a degenerated atrophied state, with their processes gone (Plate II. fig. 5 and Plate XV. fig. 9). There was much débris round the vessels in the perivascular canals. In some few of the cases the pathological appearances are indicative of a much more intensely disturbed state of the convolutions during life. For instance, in a case I examined, L. E., æt. 76, who had been ill for fifteen months, the last three of which were spent in the Asylum, and who had, in addition to the symptoms of the last case, great violence at times, wanting to get out of his house, which he maintained was not his own, an epileptiform attack, a very indistinct, thick, scarcely intelligible articulation, all his symptoms remissional, great emotionalism, and a temperature of from 99° to 100°, we found after death great adherence of the dura mater to the skull-cap, and a very dark-coloured false membrane, varying from a quarter of an inch in thickness, covering the whole of the vertex, and descending down and covering the base in a thin layer. In

this membrane there were several pure blood-coagula, from the size of a pea up to that of a small walnut. The pia mater was not adherent—though in two or three senile cases I have found it to be so—the ventricles were granulated, and there was much general atrophy. There was hypertrophy of the muscular substance of the heart and aortic incompetence.

The following is a case of transient senile mania ending in recovery :—L. F., æt. 63, a man of a cheerful disposition and somewhat intemperate habits. By the way, liquor undoubtedly affects an old man far more than a young one in the direction of producing insanity as well as less-marked neuroses. It tends more towards tissue degeneration at advanced ages, and the nerve tissue suffers most in neurotic subjects. There was some insanity in the family, but he came of an otherwise sound, long-lived stock. Three months ago he had an old ulcerated leg healed up. Had a perineal abscess a fortnight ago, which was opened, and since then has been affected in mind. The attack is recent, and came on suddenly. He began to take fancies that he was rich, got excited, and had a great craving for drink, which he indulged, and got much worse after it. On admission he was greatly exalted, saying he was possessed of all knowledge, power, and wealth. He was excited, shouting and crying, said he was the "Messiah God," that he had millions of money. He did not sleep, and his appetite was poor. He was dirty in his habits, and constantly restless. He was fed well, and got tonics, chiefly iron and quinine. Within a month he was quiet and almost rational and free from delusions. In about three weeks more he began to suffer from headaches, and soon became melancholic and morbidly anxious about his health. After having begun to sleep well, he again lost the power of sleeping in this melancholic stage. In about another month he gradually got out of the depression, and passed into a quietly contented, rational, sane senility. He went home, and ended his days in peace after some years. He entered on the attack a middle-aged-looking man; he came out of it visibly an old

man in body and mind, but in no respect a dotard or unfit to manage his affairs in a quiet way. This was a case of senility ushered in by brain-storm. Mentally he at first resembled a typical general paralytic, and this, with the slurred indistinct speech of senility, often causes a mistake in one's diagnosis even in a case over 60.

Looking at senile insanity broadly, there is no doubt that its pure type is to be found in the restless, sleepless dotard, without memory, without true affectiveness—at the beginning of the disease there is often affective hyperæsthesia and uncontrollable emotionalism—without crisp, articulate speech, second childhood in an unmanageable form, in fact. It is an irritable dementia, out of which there can be no issue but death. Of this class of case there were in a typical form 62 cases of the 203, or 30 per cent. That statistical result was a surprise to me. I had expected more of that type. Some of the others seemed to be of that character at one period of their attack, but they came back to something like normal mild senility. As might have been expected on physiological grounds, the typical cases of senile dementia were found in greatest numbers at the more advanced ages, but from 60 up to 75 there was no regular increase in their number. Under 75 there were over 18 per cent. of typical dotards; over 75 there were only 50 per cent.

Some of the cases were quite strong in body, and, beyond some arterial degeneration, showed no signs of bodily disease, and their mental condition was a cheerful, forgetful enfeeblement. I have one such man of 70, as good a garden worker as we have, who sleeps well and eats well, but cannot tell you the day of the week, calls me an old friend, and has no idea where he is. Another marked type is that of pure senile elevation, with delusions of great possessions and power, as in L. F.'s case. Such delusions, existing along with mild maniacal exaltation and senile articulation, constitute those cases resembling general paralysis. They are constantly diagnosed as such, in my experience. But general paralysis

scarcely ever appears after 60, and never after 65. A close study of the speech, too, will usually determine the difference. There is not the true general paralytic fibrillar trembling, nor the spasmodic convulsions of the smaller facial and labial muscles. Quite a number of the cases were of that type in the early period of their disease. One such case of 65, A. H., had millions of money; the Asylum belonged to him; he would give you a thousand pounds for the asking; he was happy as a king, and he was constantly restless, pulling off his buttons and taking off his clothes. His speech was thick, hesitating, and wanting in crispness of tone. He gradually became hemiplegic, and died in about two years, a dotard. A large embolic softening was found in one corpus striatum, as well as several smaller softenings in the convolutions of the motor area of the cortex.

Hallucinations.—Lewis points out that there are a few cases of senile convulsions and epilepsy causing or combined with mental symptoms.[1] I once saw an old lady of 80 who at first had hallucinations of sight and knew the things she saw were unreal, though they were most vivid. When her daughter would be at the door she would see another figure of her on the opposite side of the room, and would not be able to distinguish the real from the spectral daughter. Many senile cases have hallucinations of hearing and of sight. I have now two old women who hold regular conversations with people in the ceiling and in the next room.

Some of the men develop a morbid eroticism and a physiological immorality. I have known several marriages to be made by commencing senile dements. I had one patient of 80, L. G., whose conduct towards his female nurses was so bad that few respectable women could be got to look after him, and yet he was of the melancholic type, "just going to die" every day. Masturbation is not unknown in senile insanity. The hypochondriacal mental symptoms that are certainly one of the most characteristic features of the cases of climacteric insanity

[1] *Op. cit.*, p. 408.

are sometimes seen in senile cases. In most cases there are morbid suspicions at the beginning. I had an old lady patient who dismissed her old faithful servant two or three times a week for stealing her clothes. I saw one lately who believes that her neighbours come into her house and plot to rob her of her money. The characteristic of the senile suspicions is that they refer to things that are possible to happen, to stealing of clothes or money, to faithlessness on the part of near relations, &c., and do not refer to the impossible things that cases of real monomania of suspicion believe, to electric and mesmeric agencies, or to elaborate social plots. The senile cases are frequently changing in their suspicions, fears, and fancies, too; one day it is one thing, another day another.

In a few of the cases food is refused—a very troublesome and a very grave symptom. To feed an old man or woman by the nose or stomach tube does not always seem, somehow, to be followed by such good results as the forcible feeding of younger patients. The mucous membrane of the mouth and fauces is apt to get dry, and diarrhœa to set in. In two or three cases *hæmatoma auris* developed during the acutely maniacal stage, this no doubt indicating marked vascular disease and trophic disturbance.

Ages.—The ages of the cases are best seen by a glance at the table below.[1] Taking the whole number of cases (203), over 60 per cent. of them were between 60 and 70, 35 per cent. were between 70 and 80, and about 4 per cent. over 80. That is not far from the proportion at those ages in the general population over 60. The chief difference is that the

[1]

Ages.	Total Nos.	Recovered.
60 to 65	62	24
65 ,, 70	63	21
70 ,, 75	40	15
75 ,, 80	30	9
80 ,, 85	3	1
85 ,, 90	5	2
	203	72

proportion of insane persons between 70 and 80 is greater, while the proportion of the sane over 80 is double that of the insane.

Curability.—One of the most interesting and important of the results I obtained from an analysis of those 203 senile cases was a clearer idea than I had before of the course of such cases, their duration, and the results of treatment. The general result was that seventy-two of the cases, that is, 35 per cent. of them, were discharged from the Asylum recovered; and sixty-nine cases, that is, 33 per cent., have died: while thirty-three cases were discharged more or less improved or not at all improved, leaving twenty-nine cases under treatment. The striking fact is the number of recoveries. I must explain that the "recovery" from any form of senile insanity need not necessarily be, and is not as a matter of fact an absolute restoration to pristine vigour of mind. Some such complete recoveries there were, men who went out and earned their own livelihood, women who went out and governed their households. But such cases were usually the short attacks of exaltation or depression that I have referred to. They mostly occurred between the ages of 60 and 75, though they were not absolutely unknown after. At least one-half of the recoveries, perhaps rather more, were returns to or gradual passings into mild, manageable, normal senility. That is all that can be expected in a case with the typical characters of senile insanity. It is all I ever led the relations to expect will occur. But it is a most happy change from senile mania. To have an aged father or mother pass out of such a condition, and become fit to go home and be lovingly cared for till death takes place, is an occurrence for which most persons of proper feeling will be profoundly grateful. When such a return to normal senility occurs, there is usually little tendency for the excitement to return, under proper care and feeding.

The recovery rate in each quinquenniad from 60 to 75 was

about the same, and the rate in that whole period of fifteen years was 36 per cent., or sixty cases out of 165. The numbers in each of the next quinquenniads were too small to give results worth generalising on, but the total number of recoveries in the thirty-eight cases over the age of 75 was twelve, or at the rate of 32 per cent. This last was one of the results that surprised me, I confess.

Duration of Attack.—The recoveries took place in about the usual time that recoveries from other forms of insanity take place. About one-half (47 per cent.) of them were discharged recovered within three months of residence, and over three-fourths (79 per cent.) of them within six months. In fact, rather a larger number recovered within six months than the average recoveries in an asylum.

Mortality.—Sixty-nine of the 203 cases have died up to this time. There is much risk of them dying within the first month, this, of course, meaning that in a considerable number of cases the mental disease is of the nature of an *ante-mortem* delirium, like L. C.'s case I have related. Seven per cent. of the cases died within the first month, making about 20 per cent. of the whole of the deaths. Far more died in the first than in any subsequent month. More than half the deaths occurred within the first six months of residence, that being a considerably earlier period of death than in most other forms of insanity.

Pathology of Senile Insanity.—The pathology of the disease is interesting because it has some approach to definiteness. It is, next to general paralysis and paralytic insanity, the form of mental disease in which the grossest pathological appearances are found in the brain. Out of the ninety-two deaths we were allowed to have *post-mortem* examinations in fifty-two cases. I often find it unusually difficult to obtain permission for *post-mortem* examinations in senile cases. An exhaustive analysis of the pathological appearances found in these fifty-two cases would be far too tedious to attempt. Many of the cases would need a special description to do them justice.

All I shall attempt is a summary of the chief appearances. The most common of all the lesions found in the brain itself was that form of combined cerebro-vascular disease, "softening of the brain." This occurred in a marked form in twenty-two cases, or 42 per cent. of the whole. I need hardly say that I use the term in the proper sense of a *ramollissement*, a localised necrosis, partial or entire, of a portion of brain tissue, resulting in most cases from a deprivation of blood through embolism or thrombosis of the arterial branches supplying it. In every case of softening there was marked vascular disease, and in many cases the obstructed vessel that had formerly supplied the starved portion of brain could be demonstrated. Commonly, the form of vascular disease was atheroma in an advanced form, sometimes aneurisms, large and small, sometimes inflammatory general thickening of the coats of the vessels. The softenings were commonly localised and seldom very extensive, in this differing markedly from the softening found in the brains of younger insane persons. They were found everywhere, but the most common sites were the great basal ganglia, notably the corpus striatum, and the convolutions of the vertex and lateral portions of the anterior and middle lobes.[1] The appearances of the softenings were very different in different cases, according to their duration and the sudden or gradual onset of the lesion. When a twig of a cerebral artery is suddenly obstructed by an embolic plug, most of the tissue supplied by it dies at once, a sort of inflammatory process (the "red softening" of the older pathologists) taking place for a few days at first. Then it liquefies from the centre outwards, appearing as the typical "white softening," the process usually tending to spread into the sound tissue; but sometimes, if the dead portion is very small, the débris gets partly absorbed and the tissue round it sacculates, or, in still rarer instances, shrinks together, forming a condensed cicatrix-looking spot. But no doubt the common

[1] See a very careful analysis of the positions of brain softening in the insane by Lewis. *Op. cit.*, p. 450.

thing is slow progression of the softening, in accordance with that fatal law of progressive nerve-tissue degeneration first described by Waller in the peripheral nerves, and which has since been found to exist in so many nervous diseases. In senile cases the softening process is commonly gradual through the slow starvation of an area of brain tissue from a gradual atheromatous diminution of the lumen of its supplying vessel. I did not at one time believe in a non-syphilitic senile arteritis affecting all the coats of the vessels. Now I do, for I have seen it. And I know of no test to distinguish such arterial disease from syphilitic arteritis. In that case there is no preliminary red softening, but a slow absorption of the neurine tissue, giving the appearance at first of a spongy grey area (see Plate I. fig. 5) and going on to its complete atrophy and disappearance. The appearances caused by the sudden and the gradual starvation process differ much in the convolutions and the white substance. The former having about five times the blood-supply of the latter, it is far more apt to be filled with hæmorrhagic débris in the sudden cases, and to have a grey, dirty, gelatinous look in the gradual cases. The convolutions or parts of convolutions affected look wasted, the pia mater comes off readily, and to the touch their resistance is very soft. It is difficult to harden them even in spirit. The chief blood-supply of the convolutions being derived from small arterial twigs from the pia mater, each twig not anastomosing much with the others, but nourishing a small convolutional area of its own, if one of these be obstructed its area dies and softens, slowly or quickly, according to the kind of obstruction. But, as Duret and Heubner show, the convolutions have a second blood-supply from within. We do not find the complete necrosis of tissue in the grey that is found in the white substance. The former commonly retains some vitality, and almost never becomes a liquid pulp, or altogether disappears, like the white substance, from this cause.

The next notable appearance observed was marked atrophy of the whole brain, or of considerable portions of its convol-

utional surface. This existed, alone or in conjunction with other lesions, in so marked a degree as to be put down as one of the direct causes of death in twelve cases, and in a lesser degree in most of the others. No doubt this atrophy is partly the same process as softening, only the starvation process is slower still, and is partly owing, not to a diminished blood-pabulum merely, but to an innate lack of trophic energy in the neurine elements—a general failure of nutrition. It manifests itself in brain sections by thinned cortical matter, many enlarged perivascular canals, and dilated ventricles. The curious way in which the cerebral envelopes and packing elements seem to make an effort to expand and compensate in bulk for the shrinking brain is, I suppose, partly connected with the physical conditions of the closed box within the cranium, inaccessible to the atmospheric pressure except through the blood-vessel openings and the foramen magnum; and partly owing, no doubt, to the congestion of the whole of the tissues supplied by the carotid arteries and their branches that accompanies the paroxysms of maniacal excitement. From whatever cause, when the brain is most atrophied we are most apt to have thickenings of the skull-cap, often taking the form of successive layerings of bone over the inner table where it covers the vertex, and especially over the anterior lobes, where the atrophy is usually most marked. The dura mater is commonly thickened, and usually adheres morbidly to the skull-cap. The pia-arachnoid is thick and fibrous, and the cerebro-spinal fluid superabundant, turbid, and full of microscopic débris.

There were recent apoplexies of such a size as to be seen by the naked eye in only five cases. Microscopic apoplexies within the pia mater, in the tissues, and round the softenings, and in the perivascular canals, are much more frequent. In fact, there are few cases of acute senile maniacal excitement where such apoplexies cannot be found in those positions. But among all those cases of softening it seems marvellous that there were not more cases of apoplexy. Given vessels

with diseased, weak, and inelastic coats, given atrophy, and softening of the brain, the place of the solid tissue being taken by mere liquids and spots of softening, and add to these conditions maniacal attacks implying intense vascular congestion, one would think that large apoplexies must occur in every case from the want of support to the diseased vessels. Yet we have seen this was seldom the case. The existence of small apoplexies probably explains the occurrence of transient attacks of hemiplegia, as in a very interesting senile case in this Asylum reported by Dr J. J. Brown,[1] where the whole of the pia mater was full of miliary aneurisms, and most of the convolutions filled with pin-point apoplexies. Such cases, as well as the cases with limited softenings, bring senile insanity into close relationship pathologically with paralytic insanity, with which it has many common features. They are the two clinical forms of insanity most allied. Senile insanity often becomes paralytic insanity. Paralytic insanity commonly occurs in old people, and always has many of the mental symptoms of senile insanity.

There was distinct meningitis in three cases, one of which was the case of L. E., with "pachymeningitis hæmorrhagica interna," referred to on page 635. Of the other organs of the body, the heart was found most frequently affected, there being marked cardiac disease in ten cases. The lungs came next, with bronchitis and broncho-pneumonia in nine cases; and next the kidneys in two cases. In many of the patients several of the above morbid conditions were combined.

With regard to the microscopic appearances in senile brains, I must refer to the careful and correct descriptions and drawings of Dr Major,[2] Dr Bevan Lewis,[3] and Dr W. Ford Robertson,[4] and to Plate II. fig. 5, and Plate XV. fig. 9. Lewis describes and figures the proliferation of the connective

[1] *Journal of Mental Science*, July 1877.
[2] *West Riding Reports*, vol. iv. p. 223; and *ibid.*, vol. v. p. 161.
[3] *Op. cit.*, plate xv. p. 518.
[4] *Edin. Med. Jour.*

tissue, the abundant scavenger cells, the fatty degenerations, and the disintegrations found by him in the brain in senile insanity. It is very striking to find so many microscopic lesions common to senile insanity, and to the forms occurring earlier in life such as general paralysis and alcoholism. The various stages in the degeneration of the large cells, the atrophy of the smaller cells and nuclei (see Plate XIII. figs. 2 to 6), the enlargement of the vascular canals, and the débris of granules and hæmatin crystals, were all well described by Dr Major. I have met with such general atrophy as is represented in Plate II. fig. 5, in several cases where the nerve-cells and fibres were gradually disappearing, leaving only an irregular loose reticulation of cell walls, neuroglia, and atrophied vessels. By the Nissl method chromatolysis is commonly met with (see Plates XVI. and XVII.).

The weak point in the pathology of senile insanity is, that we have no means of comparing those lesions and changes I have described with the appearances of the brains of old persons who were not insane. Beyond a doubt some of them, both naked eye and microscopic, are present in persons whose mental condition never got beyond normal senility; but there is less doubt that in the brains of fifty-two persons from the average population over sixty, there would not have been found so many softenings and atrophies, &c. What we have to ask ourselves, in order to form anything like a proper conception of these cases of senile insanity, is,—What was the relationship between the purely dynamical phenomena of morbid mental exaltation or depression, loss of memory, and constant purposeless motor excitement, during life, and the tissue changes of the atrophied convolutions, the degenerated cells, the diseased vascular system, and the starved areas of brain found after death? Did these pathological changes, when they advanced to a certain point, simply allow old hereditary convolutional weaknesses to come out that had been so slight, that by nothing but slow death of brain tissue could they have become actualities instead of mere potentialities? Or

had the advancing brain degeneration simply weakened and destroyed all the higher inhibitory faculties and "centres" in the brain? Is the constant motor restlessness referable to an explosive action in the larger "motor" cells of the convolutions, or to a loss of inhibitory action? Is the loss of memory a mere paralysis of the power of attention and mental concentration on sense impressions—a result of the loss of inhibitory power, in fact? Or is it, in addition, an absolute paralysis of receptive capacity on the part of the cells in the convolutions, the impressions from the senses being "writ in water"? Or do the impressions not reach the convolutions through degeneration of the white conducting fibres? What light does the whole known pathology throw on the constant connection of the mental and motor symptoms?

Treatment.—How can senile insanity best be treated and managed? I can only lay down the principles that I have found useful, and can scarcely enter into the details of individual cases or requirements. The thing of first importance is undoubtedly to get a good nurse,—a responsible, skilled, patient, experienced person. Women make by far the best nurses for old people of either sex, but for male patients they are sometimes not physically strong enough. After a good nurse—and a daughter or relative will sometimes make the best of all—comes the routine of management, diet, exercise, and regimen. Excitement, and new things or ways, or places or persons, should be avoided. Old people take best with what they have been accustomed to. Warmth by night and day is most important, combined with airiness of the apartments. The clothing should be warm by night as well as by day. Cold aggravates excitement and causes dirty habits. The night management is the most important and the most troublesome. It is better not to attempt to keep the patients in bed all the time if they will not stay there quietly. Struggling with them causes irritation and resistance. A suite of airy, not over-furnished apartments downstairs is

the best. As to exercise in the fresh air, it is most important. It makes all the difference between being able to manage a case at home at all or to manage it well in an asylum. It should not be given up to the point of exhaustion, like exercise in young acutely maniacal cases. The walks should be short and often; and, when the weather admits, sitting in the open air should be practised. Senile patients have a provoking habit of sleeping during the day and waking at night. Better sleep by day than not at all. The diet is also very important. I find the first food of man to be the best at the opposite end of life. There is nothing like milk, given warm and in small quantities at a time, and often. Fatten your patient and you will improve him in mind. Too much flesh and beef-tea are often too stimulating and indigestible; cod-liver oil often works wonders, and so does maltine. Fresh vegetables, or their juice in soups, should always be given. All the solid food should be minced or pounded for a large number of the cases.

Sometimes it is necessary to fit up a special room in a private house for night use, without furniture, warmed, and that can be cleansed daily. Night feeding as well as day feeding is often needed. Often a stomachful of hot porridge or bread and milk will give a night's sleep far better than a hypnotic medicine.

The purely medical treatment is, in senile insanity, the least important, but we can do something in that way. My experience of opium is unfavourable as a sedative. It diminishes the appetite, and often tends to kill the patient. But by means of mild doses of sulphonal, used *occasionally* as required, we can tide over bad nights comfortably, and we get the day quietude and manageability produced by the drug. Much experience enables me to say that this is, on the whole, by far the best sedative yet discovered in senile restlessness. I have enabled relatives in many cases to keep an otherwise unmanageable case at home by 15-grain doses of sulphonal. Tonics are useful, and iron and the phosphates often do much

good. Alcoholic stimulants are often useful, but not so often as is commonly supposed. Ale and porter do very well sometimes. The bowels should be regulated by the simplest laxatives, — some treacle or syrup given with the evening meal of porridge being often all that is needed.

The great aim, in most patients, is to get into comfortable normal senility as soon and quietly as possible. In some the restlessness, dirty habits, and noise are so pathological that nothing seems to have any effect in controlling or abating them. The patient and his brain simply wear themselves out, and everyone about him is thankful when all is over without accident. Few questions are so difficult to determine as the one of sending a very old person to an asylum or not. The feelings of everyone go against it if there is a good home, dutiful relatives, and sufficient means. The best way is to try all other means first. In good asylums we give the poor suffering from senile insanity a sort of treatment that the richest often cannot get at home for any price, and in many instances with remarkable success. If, therefore, there is poverty and no conveniences for treatment, one cannot hesitate about the course to adopt.

I am well aware of the imperfect view of the whole senile condition, bodily and mental, that a physician to an asylum is apt to get from seeing the very worst cases only. His picture is filled in with very black shadows. To keep himself right, he must take all the opportunities he has of seeing and studying senility outside of an asylum, trying to look at it with a medico-psychological and pathological eye. I never see an old man who fails to interest me from that point of view. I wish physicians in general practice, who have to meet the smaller emergencies of senility, would put their observations before the world more than they do. I find the management of most old cases is regarded without much interest. And yet what a field of psychological study, to be able to watch the slow and gradual process of mental and brain dissolution in strong men and subtile brained women!

LECTURE XVIII.

RARER AND LESS IMPORTANT CLINICAL VARIETIES OF MENTAL DISTURBANCE.

1. Anæmic Insanity — 2. Post-Febrile Insanity — 3. Influenza and its Mental Concomitants — 4. Diabetic Insanity — 5. Insanity from Bright's Disease — 6. Insanity of Oxaluria and Phosphaturia — 7. The Insanity of Cyanosis from Bronchitis, Cardiac Disease, and Asthma — 8. Metastatic Insanity — 9. Insanity from Deprivation of the Senses — 10. The Insanity of Myxœdema — 11. The Insanity of Exophthalmic Goitre — 12. The Delirium of Young Children — 13. Insanity of Lead Poisoning — 14. Post-Connubial Insanity — 15. The Pseudo-Insanity of Somnambulism — 16. Insanity following Surgical Operations.

In addition to the more common clinical varieties of mental disease, there are a great number of others rarer, but of much interest and instructiveness. Most of them are etiological varieties, but there are some forms where the mental affection must be considered an essential part of the disease, as in myxœdema. I cannot enter fully into any of these forms, but I shall glance at some of those that have come under my own observation.

1. *Anæmic Insanity.*—There are a few cases of mental disease due to pure anæmia of the brain from starvation, chlorosis, or prolonged indigestion, or other cause of anæmia. We had in the Royal Asylum fifteen of those, out of the 3145 in the nine years 1874–82. Two-thirds of these fifteen were cases of melancholia, and the rest acute mania. Eighty per cent. of them recovered. This was one of them who did not: —L. H., æt. 29, of a quiet and reserved disposition and temperate habits. No neurotic heredity known. He had

had no work and little food for some time before coming into the Asylum, and had become weak, anæmic, and run down. He then got restless, sleepless, and unsettled, and next melancholic, attempting to go over a window. Then he became acutely maniacal. He was utterly exhausted in strength, though acutely maniacal when he came into the Asylum. The maniacal condition alternated with depression, fearfulness, fits of weeping, and partial consciousness, saying he "did not mean to do any harm." He was fed up, but he became demented and incurable very soon. Most of the cases were mild melancholia, some of them having an element of stupor, and those nearly all recovered within three months under good feeding, fresh air, and quinine and iron.

2. *Post-Febrile Insanity.*—The next form of insanity I shall refer to is that called by Dr Skae post-febrile insanity. The exhaustion of the vital powers that is caused by zymotic diseases sometimes takes special effect on the higher functions of the brain, and we have an attack of insanity resulting. The nervous affections that often follow fevers in children are well known. These, no doubt, are precisely analogous to the post-febrile insanity of the adult. The insanity which sometimes followed fevers was known from the earliest times, and was evidently much more common two hundred years ago than now, but it was then ascribed, not to the exhausting effects of the fever, but to its not having been treated with "sufficient dilution" and purges to carry of the entire *materies morbi*, thus leaving a dangerous element in the system, that was liable to fly to the head and cause insanity. Arnold thought that insanity was much less common in his time than in Sydenham's after fevers and agues, because they purged more than the old physicians, and used the Peruvian bark more freely. Post-febrile insanity is not specially confined to one kind of fever.

I went over the records of over a thousand cases of insanity that were sent to the Carlisle Asylum, and I found that among those there had been ten cases of such post-febrile insanity,

four of which followed scarlet fever, two small-pox, one typhus, one typhoid, one intermittent, and in the tenth case I could not ascertain the exact form. Those are small numbers on which to base any conclusions in regard to a disease, but I am not aware of any fuller statistics on the subject. I think those numbers represent in a general way the comparative frequency of its occurrence after the different fevers.

Scarlatina is unquestionably the most frequent cause, and small-pox the next. It is said to follow typhus more frequently than typhoid, and as intermittent fever is now very infrequent in this country, this is a very rare cause of the disease.

Whether this represents the comparative exhausting powers of the poisons of those fevers on the brain, or whether scarlatina stands at the head of the list, from its greater frequency or from its more common occurrence in youth, when the brain has not attained its maturity, I am unable to say with certainty. The form of insanity that results after scarlatina is frequently followed by dementia which is incurable.

We might expect this from the well-known occurrence of idiocy and epilepsy in children after this disease as sequelæ and complications. More frequently than after any other fever we hear the remark—"Such a person has never been the same since he had scarlet fever." On the whole, I think there is fair ground for the assumption that the poison of this disease is more apt to leave permanent brain disease than any of the others. When mental symptoms follow the disappearance of scarlatina, they do so at once; the patient not having an attack of acute excitement so commonly as being left after the disease in a state of partial dementia. The weakness of mind is not complete, but more of a partial imbecility, a blunting of all the mental faculties and affections, with attacks of sub-acute excitement and irritability. In two of my four cases there was deafness along with the imbecility, showing that the effects of the disease had not been confined to the brain convolutions, but had also affected the organs or centres

of special sensation directly, or through mastoid inflammation.

The form of insanity that follows small-pox is of the same character as that of scarlatina, but is even more incurable. That of typhus and typhoid is more clearly the result of brain exhaustion from those diseases in cases where they have continued for a long time. The patient seems to come out of the fever, showing no particular mental symptoms or insanity until some weeks afterwards, when he is attacked with acute excitement, or "gets into a low way," and a long-continued intractable depression results. Tuke and Bucknill and Maudsley say that the insanity that follows typhus is of a more incurable kind than that resulting from typhoid. Sydenham describes the form of insanity that used to follow ague, and in his time this seems not to have been uncommon. He calls it a peculiar form of mania, and says that the long continuance of the fever, and its being of a quartan type, seemed to produce the mental symptoms more than any other circumstances. If treated by the exhibition of strong evacuants it degenerates into hopeless fatuity. My single case of the disease was that of a sailor, who had regular attacks of ague, drank hard, lived on salt provisions during his voyage, and on his arrival had an acute maniacal attack. He was thin, pale, and slightly scorbutic. I treated him with abundant diet, malt liquors, fresh air, quinine and iron, and a few draughts of chloral at bedtime, and he was quite well again in two months, having gained 20 lbs. in weight in that time. In this case, of course, there were the other causes of brain exhaustion as well as the ague.

Of my ten cases, only the above-mentioned patient and one of the scarlet fever patients had acute symptoms of any sort, and they were the only ones who recovered. All the others were incurable, six of them becoming hopelessly demented, and the other two hopelessly melancholic. There was hereditary predisposition to insanity in only three of the ten cases.

Post-febrile insanity may be said, therefore, to be generally characterised by sub-acute symptoms, to result from the brain

being poisoned by zymotic poison and exhausted by fever, not to require a hereditary tendency for its development, and to be a very incurable form of insanity from the beginning.

I once met with a peculiar form of transient mania following an attack of erysipelas of the face in a lady, L. M., with a strong heredity to insanity, who, a fortnight before, had been attacked with erysipelas of the head and face of a very severe character, causing much swelling, shutting up of the eyes, and being accompanied by slight delirium. All the acute symptoms of this had passed off, the temperature was down from 104° to normal, and the swelling of the face was abating, but still she could not open her eyes. She then began to wander in mind, and to have hallucinations of sight and hearing, to mistake identities, and to fancy she had a child. She would go on talking to imaginary people, would especially keep up long conversations with God, would speak to Him quite familiarly, and would fancy she got an immediate reply. Her amatory propensities were exalted, and her religious feelings and emotions were both excited and perverted. Usually she lay in bed, but was at times very violent indeed. Her pulse was 86, and of fair strength, and her temperature 98·6°. She slept little. She took liquid food. She could open her eyes slightly and with difficulty, but seldom did so, and evidently preferred to keep them shut, and live in her own world of fancies. Her state much resembled a "waking dream." Impressions, however, on her senses of hearing and touch were acutely felt, and often were strong enough to divert her from her unreal beliefs and hallucinations. She got quite well in a few days.

I lately had a case of acute delirious mania of a very severe type following an attack of measles in a young, strong, healthy lady, L. M. A. It ran a typical course, and she made a perfect recovery in a few months. Dr Gordon Bell of Sunderland tells me that he has had four cases of typhoid ushered in by attacks of insanity, two being melancholic and

two maniacal. Murchiston had referred to such attacks early in the disease. He refers fully too to the post-febrile mental symptoms.

3. *Influenza and its Mental Relationships.*—During the years 1890–91, '92–94, and '97 severe epidemics of influenza affected every class of the community in almost every portion of the country. This disease was universally found to affect the nervous system and the nerve energy most severely wherever else it localised itself, whether in the respiratory mucous tract, the lungs, the heart, or the gastric and intestinal tract. Its effects on the mental functions of the brain, both during the attack and afterwards, were marked, and often specific. Depression of spirits and loss of volitional power were the two great symptoms present. I had a number of cases of melancholia following the attacks sent into the Asylum, and I saw many more in consultation or heard of them from my professional brethren. In my opinion the microbe or the poison of influenza destroyed the cortical energy to a much larger extent than any of the continued fevers or zymotics, nay, its effects on the mental condition of Europe during the years of its prevalence far exceeded in destructive powers all those diseases put together. It left the mental and nervous tone of Europe lower by some degrees than it found it. The form of melancholia was usually the simple variety, with lethargy, anæmia, and thinness of body. Mental disturbances may arise after influenza just as other neuroses arise, from the direct influence of the disease on the brain cortex, and also from its generally weakening and exhaustive effects after the acute symptoms have passed off. Dr Elkins[1] found that melancholia was by far the most common variety of mental disturbance, but that there were no series nor sequence of symptoms that marked out post-influenzic insanity as a special type. Some of the cases had motor symptoms, simulating general paralysis. Mental symptoms short of insanity, loss of energy, loss of power of application, low spirits, change

[1] *Edinburgh Hospital Reports*, vol. i.

of affective condition, loss of memory, loss of interest in life, premature senile mental conditions, drink craving, are all effects I have met with. Fortunately a reasonable number of the post-influenzic cases of all kinds recover, especially if they are young. On the other hand, there is no doubt that the weakened resistive power of the constitution produced by it leads to the development of senility and senile tissue degenerations, phthisis, cardiac affections, cancer, chronic dyspepsia, and many other bodily complaints. Rest, tonics, nutrients, and especially change of air I found most useful. I believe no epidemic of any disease on record has had such mental effects. Ever since the first epidemic in 1890 we have had an enormous increase of cases of melancholia, at the expense, it would seem, of mania; now our melancholics are as numerous as the cases of mania instead of being only one-half or two-thirds as numerous, as was the case before 1890.

4. *Diabetic Insanity.*—I have met with two cases in which melancholia was associated with diabetes mellitus, and one, which was a case of melancholia, complicated with diabetes insipidus, passing 250 oz. of urine daily. The mental condition of diabetic patients has attracted the attention of clinicists, but not so much as it deserves. We, whose practice lies chiefly in mental diseases, are often accused of seeing nothing but the mental symptoms of our cases; but we have good reason to complain of the way in which the mental symptoms of ordinary diseases are overlooked or neglected by general physicians. The psychology of most bodily diseases has yet to be written, and one hopes that the clinical study of mental diseases by students of medicine may so familiarise their minds with mental symptoms that they will be more on the alert to look for them in their ordinary practice than they would otherwise have been. When they are looked for by those who know how to observe and name them they will be found. The whole history of medicine is one long tale of finding things when they were looked for. Taken in conjunction with the peripheral neuritis sometimes seen in

diabetes, the melancholia with which nearly all the cases are affected suggests a toxic auto-poisoning.

The first case was that of L. K., æt. 59, a lady whose disease showed itself by mental depression, irritability, incapacity for work, a lack of interest in anything, and an indecision of character quite foreign to her, all these symptoms following a carbuncle on the occiput. She had diabetes mellitus, which had existed probably for a year before the mental symptoms came on. She had the usual bodily symptoms of diabetes—thirst, frequent micturition, much sugar in urine, thinness, and dry skin. On account of the difficulty of getting her to take enough food, to dress herself, to go out to walk, as well as her noise and restlessness at night, she was sent to the Royal Asylum about three months after the depression began. The usual treatment was adopted for the diabetes, but with no avail. Her mental energy got enfeebled, until she was utterly languid, with no volitional power. She had the delusion that she was ruined, and could not pay her debts, and kept up a continual wail by day and night. She became steadily weaker, and was giddy when she stood up, and towards the end became sleepy all the time. Her urine was never very copious, and its specific gravity was always about 1030. She had a small ulcerated spot on her ankle, which could not be healed. She died rather suddenly six weeks after admission.

On *post-mortem* examination we found the scalp and skull-cap of a yellowish hue. The inner table of the skull-cap was irregularly thickened by bony masses; the dura mater was leathery; the pia mater was thickened and could be removed from the convolutions with abnormal ease. The convolutions and brain generally were much atrophied, compensatory fluid taking its place. The convolutions stood out thin, small, loosely packed, and wedge-shaped. The fornix and corpus callosum were pale and soft. The lining membranes of the ventricles were roughened, with a trace of granulations. Sections of the brain showed an irregular mottling of a pink hue, and pallor of the grey substance of the convolutions.

The whole of the cerebral substance exhibited a loss of consistence, and in the left corpus striatum there was a small localised softening, the size of a split pea. The encephalon only weighed 38 oz.

Dr Campbell Clark made some sections of the medulla for me, and they all showed (1) great looseness of texture, (2) localised atrophies, (3) abnormally enlarged perivascular canals, (4) degenerated and partially atrophied cells, very many of which have undergone fuscous degeneration, their processes having largely disappeared, like the cells in senile dementia (Plate XV. fig. 9). On the whole, therefore, the pathology of diabetic insanity, so far as that case throws light on it, seems to be an innutrition and general atrophy of the brain, especially affecting its convolutions. This form of melancholia and its pathology may be conveniently studied in connection with the neuritis common in this disease, and also with diabetic coma. The neurotic hereditary history of diabetes and its connection with insanity, of which I have seen many examples, is of great interest and importance.

5. *Insanity of Bright's Disease.*—This is a variety of mental derangement, half delirium and half mania, which results from uræmic poisoning. I have met with several cases of this disease. Dr Wilks[1] has published several cases of this kind, and Sir T. Grainger Stewart says he has also seen similar cases. It usually occurs in chronic cases of Bright's disease, with contracted kidneys, where there has been enlargement of the heart and a tendency to dropsy for some time, and where the central nervous system has been long subjected to the influence of imperfectly purified blood. The symptoms present are mania of a delirious kind, with extreme restlessness, delusions as to the persons round the patient, an absolute want of fear of jumping through windows or other actions that would kill or injure. The symptoms are characterised by remissions, during which the patient is quiet, rather composed in mind, and rational, but very prostrate in body. One of my cases

[1] *Journal of Mental Science*, July 1874.

was L. L., a man of 50, with a family history of insanity, who had once been much depressed in mind—but was not sent to an asylum—after a fever. He seems to have had heart disease for many years, and to have had Bright's disease for at least two or three years previous to his admission into the Asylum. He had dropsy of his legs for some weeks before the mental symptoms began. He was at first morose and irritable to a morbid degree, and steadily got worse in mind, his symptoms changing to exaltation and excitement, fancied he could do wonders, had absurd schemes for making money, and threatened to murder every one near him. On admission he was in a state of mental exaltation and excitement, gesticulating, saying he had been married and had no children (which were delusions), and his memory quite gone. His speech was thick and indistinct, his tongue coated, his pupils dilated, and slowly sensitive to light, the reflex action of the cord dulled, and the temperature below normal; legs œdematous; his lungs were dull at bases, his heart hypertrophied, with a loud murmur with first and second sounds, urine contained much albumen, and a few tube-casts, sp. gr. 1020. This man alternated between this state of mind and that of a drowsy, stupid, but fairly rational condition till two days before his death, when he became semi-comatose, with periods of delirium. He only lived five weeks after admission, or about two months from the appearance of his mental symptoms. This was a typical case of the disease. No doubt the mental portions of his brain were the weak points of his central nervous system from his hereditary predisposition to insanity, and the uræmic poison took effect there instead of causing convulsions. I have had on two occasions patients sent to the Asylum with uræmic delirium and uræmic coma who died within twenty-four hours of admission, which shows that in some cases this needs to be remembered before a diagnosis of insanity is made and the patient sent to an asylum.

6. *Insanity of Oxaluria and Phosphaturia.*—All writers on the urine have noticed the hypochondriasis, depression of

mind, want of energy and originating power, and the irritability that so often go along with the presence of much oxalate of lime or phosphates in the urine. Dr Prout[1] thought that the mental state was probably the cause of these abnormal products in the urine, and he especially mentions "a nervous state of the system, and particularly mental anxiety or fear," as causes that "will frequently produce in many people an excess of the salt in the urine." Golding Bird[2] says that "persons affected with 'oxaluria' are generally remarkably depressed in spirits, hypochondriacal, extremely nervous, painfully susceptible to external impressions, and in many cases labour under the impression that they are about to fall victims to consumption." He says in reference to phosphaturia, that there are cases with this condition characterised by high nervous irritability, following injury to the spine. The late Dr Begbie directed special attention to oxaluria as a cause of a nervous disorder which was characterised by a very highly neurotic condition of the patient. He says such patients are commonly in the prime of life, belong usually to the upper classes, and have indulged freely in the good things, especially the *sweets* of the table. He says their sufferings often threaten their mental condition. "They are usually peevish, sensitive, and irritable, or dull and desponding and melancholic." His theory of the causation of these miseries is, that they "flow from the oxalic diathesis from a poison generated during the process of digestion and assimilation, carried into the blood by the ordinary channels, but limited in its pernicious consequences by the busy agency of the urinary organs in separating it from the circulation, and discharging it from the system." Several of the cases he gives were almost insane, but I fancy few such require asylum treatment. He shows that the nervous symptoms are apparently a result of the oxaluria, and disappear under the treatment that cures it. There is, on the other hand, no doubt of the fact that oxalates may be found in very great abundance in the urine of persons

[1] Prout, p. 176, 2nd ed. [2] G. Bird, pp. 250 and 307.

in good health. Lehmann, Bence Jones, and Garrod, and many others direct special attention to this fact. The former, along with many other physicians, thinks that its appearance is not at all essentially connected with any special disease or train of symptoms. Speaking generally, the chemical physicians who have written on the urine take this view, while the clinical physicians take the opposite.

In a very considerable number of a certain class of melancholics—the irritable hypochondriacs—we find oxalates or basic phosphates in the urine, and the special treatment suitable for those conditions as an adjunct to the moral and tonic treatment of the melancholia seems certainly to be useful. I think there is scarcely enough evidence to show whether this condition of the urine is a cause or an effect of the brain state.

7. *The Insanity of Cyanosis from Bronchitis, Cardiac Disease, and Asthma.*—This is a form of delirium, with confusion, hallucinations of sight, sleeplessness, sometimes suicidal impulses, and vague fears. Those symptoms are usually worst at night, and often end in mental torpor, passing into coma. It is more commonly seen in persons of advanced age than in young people. In some degree the mental power is usually affected in most old persons who have diseases that prevent the blood being properly oxygenated. No doubt an hereditarily weak or a senile brain suffers more than a stronger brain in this way, and both combined suffer most of all.

8. *Metastatic Insanity.*—The typical rheumatic insanity is essentially a metastatic insanity, the diseased process leaving the joints, its normal seat, and attacking the nervous centres. I have seen more than one case where the healing of an old ulcer was followed by an attack of insanity. I have seen instances of erysipelas of the face "striking inwards" and causing an attack of acute mania (see p. 654, L. M.). I have often seen the disappearance of a syphilitic psoriasis to be followed by melancholia, and its reappearance on the skin to precede mental recovery.

9. *Insanity from Deprivation of the Senses.*—I saw a gentleman, L. M. B., some years ago, who became melancholic and suicidal coincidently with his loss of sight from cataract, and who improved greatly after the operation for removing it was partially successful, so that he could again see even in a dim way the outer world. It is very common indeed for those who are deaf to become quiet, depressed, and irritable. It is also common for such persons to become subject to hallucinations of hearing, and so insane as to need to be sent to asylums. I have now at the Royal Asylum four or five such cases. It seems as if they were so cut off from social intercourse and the outer world by their deafness that their subjective experiences became objective realities to them. In the case of all men the senses correct many "delusions."

10. *The Insanity of Myxœdema.*—I have now had eight cases of myxœdema sent to my care as patients at the Asylum who were positively insane, and all the examples of the disease I have ever seen were more or less affected mentally, if they were not technically insane. The first case sent to the Asylum was L. O., a woman of 38, whose mother was "nervous." The patient was said to have been "dropsical" for thirteen years, which no doubt was the time she had laboured under myxœdema. She had become lately violent, excited, confused, and full of changing delusions, with hallucinations of hearing. On admission she was incoherent and sleepless. Under discipline and nursing she became more quiet and slept better, but was still confused and stupid. She was sent home after about five weeks, her symptoms having become so much better that she did not require asylum treatment, the mania and delusions having disappeared, though confusion and mental enfeeblement remained. The next case I had was the Asylum plumber, L. Q., æt. 54, who, having laboured under myxœdema for four years, suddenly one day tried to poison himself in a deliberate reasoning way on account of a bad wife. In consequence of this and of his mental weakness he was made a patient in the Asylum, but he soon got into such

an improved condition that he was discharged from the books as a patient, and remained a sort of special indoor pensioner of ours, and an illustration of myxœdema for the Cliniques and Medical Societies of Edinburgh till his death. Mentally he was contented, torpid, enfeebled, suspicious, with no initiative, no temper, and no affection left for any one, slow in his mental movements as he was in his muscles—in fact, he was mildly demented. The third case was that of L. P., æt. 37, on her admission to the Asylum in 1878. Three years before admission she became depressed, with hallucinations of smell —affirming that everything smelt of gunpowder. After three years of depression she became exalted in mind, with much excitement. Her mental condition was like that of a typical general paralytic, hilarious and facile, contented, impulsive, with delusions of grandeur, thinking her husband had lately come into a fortune. After eight years she was enfeebled in mind, silly in speech and conduct, very contented, with a thick, slow articulation, expressionless puffy face, with no affection and no keen desires, and lived at home, but took a drive to see me sometimes to ask for payment for the work she did in the Asylum, leaving me to pay the cab. The fourth and fifth cases were also of this kind, but made such a partial recovery that they were able to live at home after a time.

From the first patient described by Sir William Gull[1] in 1873 on to the latest clinical case of myxœdema put on record, mental symptoms have been described along with the well-known bodily symptoms of the disease. Though the etiology is here so definite, yet there are great varieties in the mental symptoms produced by it. They all have slow voluntary movements, a lower vaso-motor tone, the reaction time, mental and bodily, is prolonged. Most of them have loss of memory, depression, irritability, delusions of suspicion, loss of energising, diminished attention and affective faculty and impaired volition. In a few cases there were maniacal outbursts and some enfeeblement and much hebetude.

[1] *Clin. Society's Transactions*, vol. vii., 1874.

I have now had three cases since thyroid treatment has been introduced, and they were all completely cured mentally by thyroid treatment under my care, two of them being of several years' standing, and one that I was so fortunate as to diagnose within three months of the onset of the disease. It is better to make the treatment slow and a little prolonged on account of the cardiac and general depression that results from too rapid cure. The contrast between the disturbed, stupid, inert subject of myxœdematous insanity, and the active, intelligent, bright and alert person who is seen after two or three months' treatment is most dramatic.

11. *Insanity associated with Exophthalmic Goitre.*—I lately had the following very interesting case, which has been more fully reported by Dr Carlyle Johnstone,[1] the assistant physician who was in charge of it:—

L. S., admitted into the Royal Edinburgh Asylum on the 26th November 1881, æt. 32. She was a working-man's wife, of active steady habits and cheerful disposition, and the mother of three children. For the last three years she had been gradually losing flesh and strength, and had latterly been treated for goitre. A few days before her admission she suddenly began to express delusions, and soon became intensely excited. When brought to the Asylum she was in a condition of acute excitement, writhing, struggling, and violently resisting all attempts at interference; talking incessantly, and incoherently using profane and obscene expressions, and displaying many vague and fleeting delusions. In some respects her excitement was hysterical in its character. She was very emaciated, and her physical condition generally was very weak. She presented the ordinary signs of exophthalmic goitre—prominent eyeballs, cardiac disorder, and enlargement of the thyroid gland. There was slight elevation of the temperature, with a rapid, irregular, and feeble pulse.

The maniacal condition persisted, with frequent remissions and exacerbations, for about a couple of months, and her

[1] *Journal of Mental Science*, January 1884.

general health remained wretchedly poor. She was ordered tonics and the bromide of iron continuously. A gradual improvement was then observed in the mental symptoms, and the relapses became less frequent and less serious. Five months after her admission she was able to employ herself usefully in the female infirmary, and as her convalescence appeared to become established she settled down into a steady house-worker, and behaved, except for occasional hysterical outbursts, in a sober, rational, and tolerably cheerful manner. With the abatement of the excitement the state of nutrition became greatly improved—the increase in body-weight being very rapid. There was little alteration, however, in the signs of exophthalmic goitre, and during her residence the patient only menstruated once. In addition to these adverse symptoms, nervous phenomena of a very grave nature began to make their appearance between three and four months after admission. These began with fainting seizures, followed by a feeling of numbness in the left arm, which, in subsequent attacks, extended to the whole left side. Gradually the power of the left limbs was entirely lost, and the sense of touch disappeared from the whole of the left side, while the sense of pain was increased. The left eyeball became more prominent than the right, violent headache set in, and patient began to vomit persistently. She died on the 19th November 1882, about twelve months after admission.

The Autopsy was performed thirty-six hours after death. The calvarium, dura mater, and pia mater were considerably injected. There was great hyperæmia of the left hemisphere, but in consistence and other respects that portion of the brain was tolerably healthy. The right hemisphere was very extensively diseased. Over the whole of the superior and lateral aspects the pia mater was more or less firmly adherent, dragging with it on removal, in several places, the whole depth of the cortical matter. The white matter was pink and mottled, and the cortical matter universally soft and red, and in many places quite disorganised.

The optic nerves and tracts presented no abnormality; the cellulo-adipose tissue in the orbits was increased in quantity; the thyroid gland was much enlarged; there was a large thymus gland; the heart was slightly hypertrophied; the other organs were tolerably healthy.

This case suggests several questions. If the extensive disease of the grey matter of the convolutions existed all the time, how was she so sane mentally for a portion of it? Was the origin of the case a cortical one? What was the relationship between the exophthalmos, the goitre, and the brain disease? In such a case should we not now excise part of the thyroid? I have met with several cases of mild mental symptoms in this disease, mainly depression, lassitude, irritability, and want of power to do ordinary work, and one case of marked moral perversion with dipsomania. If I had such cases now I should be inclined to advise partial or complete surgical removal of the thyroid gland.

12. *The Delirium of Young Children.*—Few mothers of large families but have had experience of the delirium of young children. Some children are much more subject to it than others. Some children, in fact, never have an increase of temperature over 99·5° without being delirious at night. In most cases it is a pure delirium without normal consciousness, attention, or memory, but in some instances there are frightful hallucinations; in others an excited melancholia of short duration, with violent screaming, tearless weeping, and all the usual signs of mental depression, this being very common after severe injuries and surgical operations. I have seen a child of six have a regular attack of melancholia of this character lasting for a few days. The bromides and cold to the head with hot baths are, no doubt, the best treatment, with non-stimulating nutrients like milk, and febrifuges and diaphoretics. The delirium of children is determined by their neurotic heredity. Its great value is to show the quality of the brain at early periods of life. In my experience the same children who suffer from delirium during childhood at

temperatures not high are those subject to "night terrors," to chorea, to epilepsy, to hysteria, and even to adolescent insanity in later ages.

13. *The Insanity of Lead Poisoning.*—This is a variety of toxic mental disease which Drs Rayner, Savage, A. Robertson, and Atkins have lately[1] directed attention to. Though diseases of the nervous system from lead poisoning have been long known to medicine, I have only seen one or two cases, and those not well marked, and they were complicated with alcoholism. All the cases have motor symptoms, either convulsions, or paralysis, or muscular tremblings. The mental symptoms are most various, from coma down to slight lassitude; but hallucinations, morbid elevation, maniacal attacks, and delusions of persecution, are the chief symptoms.

14. *Post-Connubial Insanity.*—I lately had a patient, L. R., who became melancholic, suicidal, and very stupid three days after his marriage. He soon got well. This has not unfrequently been observed. The mental excitement of marriage culminating in an excess of sexual excitation, is liable to upset the convolutional stability in certain persons predisposed to mental disease. In my experience it has been a curable and not a prolonged form of insanity. Some brains are so liable to be upset in their mental working, that it is no wonder the intensest known mental and physical excitement produces this effect, just as other brains are upset in their motor stability in like circumstances, and an epileptic fit occurs on each occasion of intercourse.

15. *The Pseudo-Insanity of Somnambulism.*—One cannot admit that the actual state of somnambulism is a form of mental disease in any true or scientific sense, for the patient is necessarily asleep. But hereditarily it is often very closely allied to mental disease and to epilepsy, and I have ascertained that some of my insane patients had been sleep-walkers during the period of adolescence. Most bad and confirmed sleep-walkers have a neurotic heredity, and a nervous tempera-

[1] *Journal of Mental Science*, July 1880.

ment, or both, though it is fortunately quite certain that few of them ever become insane. Acts of violence, homicide, and suicide may be done in a state of somnambulism. I saw in the Edinburgh prison a man named Simon Fraser, whose heredity was highly neurotic, who had been an aggravated sleep-walker all his life, who during his somnambulism had vivid conceptions, hallucinations, and illusions, and who in that condition did all sorts of purposive acts in accordance with those false beliefs. He remembered his somnambulistic impressions in a vague way after he awoke. He was most difficult to awake. He once went up to his neck in the sea in Norway, and did not awake. At last, one night he got up, and while in a state of somnambulism, imagining he saw a white animal in the room, he seized it and dashed it against the wall. This turned out to be his child, whom he thus killed on the spot.[1] He was passionately fond of the child, and had played with it the last thing before it had gone to sleep. The question is—What should be done with such a man to protect himself and others, he being perfectly sane when awake? Neither the lunacy nor the criminal laws at present make any provision for the treatment of such a state and its consequences, and Fraser was accordingly handed over to his friends, with instructions to lock his door from the outside every night.

16. *Insanity following Surgical Operations.*—In addition to the foregoing forms of mental disease, I have seen several cases of sudden melancholia occurring after surgical operations,—several of them having occurred after cystotomy, one after removal of the breast, and one after amputation of the leg. In most of the cases iodoform had been used as a dressing, and the question arises whether poisoning by that substance did not originate the delirium which they all suffered from. All recovered but one, who died.

[1] Dr Yellowlees has given a full account of this case and the trial in the *Journal of Mental Science*, vol. xxiv. p. 451.

LECTURE XIX.

THE MEDICO-LEGAL AND MEDICO-SOCIAL DUTIES OF MEDICAL MEN IN RELATION TO MENTAL DISEASES.

1. Taking the responsibility of advising the restriction of liberty, and placing cases under the care of attendants at home. 2. Signing Medical Certificates of Insanity, in order to place patients in Asylums, and under care in private houses; never act without full consideration: (*a*) Is the patient insane? (*b*) if so, is he "a proper person to be detained under care and treatment"? (*c*) why should he be placed in an Asylum or sent from home? (*d*) is there any legal risk to those who take the steps for Asylum treatment? (*e*) fill up the first part of the Certificate up to "Facts" most carefully, remembering it is to go before lawyers; (*f*) "facts indicating insanity observed by myself" the most important part of Certificate; delusions most important; appearance and manner of patient; expression of face; incoherence; want of memory; change from natural condition; suicidal or homicidal expressions, taciturnity; inability to answer simple questions, and negative symptoms; quote words used; put no redundancies; cumulative facts; (*g*) "Facts communicated by others," corroborative; attempts at suicide; assaults; paroxysmal aggravations; conduct when not watched; (*h*) Get the cue to delusions, &c., from others before you see patient; (*i*) Necessity for tact; sometimes a little stratagem; cunning and reticence of patients; (*k*) Can't keep patients in private houses "for profit" without certificate in England, or notice to Commissioners in Scotland. 3. Giving Certificates of sanity; need for care and caution. 4. Giving Certificates as to the appointment of a *Curator Bonis* in Scotland, and making affidavits and giving evidence before a Master in Lunacy in England or a Judge in Ireland when a lunacy inquiry is held by him. 5. Giving evidence as to the existence of mental disease or not in criminal cases, to enable the law to fix or absolve from responsibility, before higher and lower courts, and as adviser to Procurator-Fiscal in Scotland. Crimes most commonly committed in *Mania;* epileptic, alcoholic, puerperal, and simple—*Melancholia:*

Excited and delusional—*Dementia:* Impulsive violence—*Impulsive Insanity:* Homicidal, Kleptomania, Pyromania, Animal Impulse; complications of Insanity with Drunkenness; somnambulism and allied states, divergence of Medical and Legal views—*Successive Legal Views:* Wild beast theory (Tracey); knowledge of right and wrong (Mansfield); knowledge of right and wrong as to the act (Twelve Judges); delusional test (Denman); habit and repute (Moncreiff); power of control (New Criminal Code, Stephen); difficulty of cases on the Borderland; necessity for caution, full knowledge of all the facts, and strict impartiality. 6. Giving evidence as to civil capacity; management of property, making wills, contracting marriage, &c.; great caution here; get facts on both sides of the question; don't promise to give evidence till you have got all the facts—Mode of life; "habit and repute;" eccentricity; youthful extravagances; wide views of the law on this matter; Scotch provision of *Curator Bonis* without deprivation of personal liberty—*Will-making:* (*a*) Is he free from influence of drink or drugs? (*b*) does he understand the nature of the act he is doing, and the effect of the document? (*c*) can he state his reasons for making a will? (*d*) is the disposition of the property a natural one, and if not, why? (*e*) is it not influenced by insane delusion or insane state of mind? (*f*) is there no facility with undue influence being exerted? (*g*) can he tell twice over the disposition he wishes to make? (*h*) can he tell his relations and their claims on him? (*i*) can he tell the amount of his property? (*j*) is there any brain disease or aphasia? don't let a good motive sanction a bad will. 7. *Detecting Feigned Insanity:* No general rule; are the symptoms those of any known type of insanity? is there any motive?—Watch the patient when he thinks he is unobserved; commonly overdoes his part; power of endurance; sleep; sensibility; sudden shocks, shower bath, electric battery, &c.; hysteria; effect of drugs; Difficulty of the question, Was Hamlet mad? Self-accusations of really insane people. 8. Giving confidential family advice as to such matters as engagements to marry, education, choice of profession, sudden change of conduct and morals, &c.; Dreadful effect of helping to increase the neuroses, the insanity, and the idiocy in the world; on the other hand, Maudsley's opinion as to genius resulting from neurotic marriages; Special mode of education sometimes needed for neurotic children.

THE medical profession has grave medico-legal responsibilities thrown on it by the provisions of many of the forty enactments that stand on the Statute Book relating to the insane. In addition to their statutory duties, judges, lawyers, and administrators of the law constantly call in medical men to

help them in the solution of questions that they only can solve. There are few things about which the British public is more sensitive than those relating to the liberty of the subject, to civil capacity, and to the control of property. In addition to these responsibilities, there are most delicate duties of a purely medical and medico-social kind thrown on our profession by the exigencies of practice, and the impossibility of finding elsewhere so qualified and wise an adviser as the family doctor. There is no doubt that all those duties should be done with much care, and after searching inquiry into facts, and a grave consideration of the whole effects of any opinion expressed or of any act done. A special knowledge of the subject, experience, sound judgment, conscientiousness, and caution, are all qualities requisite in dealing medico-legally with the insane.

The chief medico-legal and medico-social duties of medical men in relation to mental diseases may be thus classified:—

1. *Taking the responsibility involved in treating cases at home, placing them under the care of attendants, advising that they should be put under a certain degree of control, and prevented from transacting business.* This in doubtful cases and in the early stages of the disease, is often a very serious thing to do. The patient may not know he is ill, says in fact he is quite well, resents as an insult and a degradation being put under control, and threatens all who have to do with it with the most dire consequences. The only sound and safe rule for the doctor is to make it clear that he only advises, and does not take any legal responsibility whatever for the steps by which a patient is controlled. Let that fall on a relation who has the legal right or moral duty to take measures for the safety of the patient, and on no account be assumed by the doctor, to whom the law gives no authority whatever but to grant certificates. If the patient is removed to lodgings to be under treatment, the relatives must authorise this step. It need not be the nearest relative. It is often desirable to have family councils under those circumstances. Especially when hus-

bands or wives are mentally affected, "both sides of the house" should, if possible, be taken into consultation. But as regards the doctor the rule is clear. Let him advise but not act. I have even in some rare cases refused to take the responsibility of regular attendance and treatment, without first getting a letter of protection from legal risk. The attendants in charge are the servants of the relatives, and under their orders technically and legally, however much in fact they may be under the doctor's deputed authority.

In England a patient can be treated at his own home or anywhere else, if not "for profit," without certificates of lunacy, as long as his friends desire, and so long as he is not badly treated, which last procedure subjects those responsible for it to very heavy punishment. In Scotland a patient can be treated, with a view to cure, anywhere out of an asylum for six months without formal certificates, if a medical opinion to that effect and intimation is sent to the Commissioners in Lunacy. This is a most valuable and common-sense provision. The time might very well have been extended to twelve months. If treated at home or anywhere else "without profit," and his treatment implies control over his actions, his case must be intimated to the Commissioners at the end of twelve months.

2. *The most common of all the medico-legal duties thrown on medical men is that of signing the statutory medical certificates for placing patients in asylums or under care in private houses.* This is done for the proper treatment of the patient, and often for his safety as well as for the safety of the public. The form of certificate is fixed by statute, and no other form will do. The form is practically the same in England, Scotland, and Ireland, though the mode of placing a patient in the asylum is different in the three countries. In England a private patient can be placed in an asylum only on the "order" of a magistrate after the two medical certificates and a petition from a relative have been obtained; in Scotland the sheriff must sign the "order," after having seen the

petition, statement, and medical certificates. Pauper patients are placed in asylums in England and Ireland on the order of a magistrate, who must see the patient, and on one medical certificate; while in Scotland pauper patients are placed in asylums in the same way as private patients, that is, on a petition and statement by the inspector of poor, two certificates, and a sheriff's order.

As to the grounds on which a British subject can be legally deprived of his liberty on account of insanity, the common law of England only recognised as a sufficient cause danger to the patient or the public, and a recent decision seems to imply that some Judges still hold that to be the law. But by the universal practice of the country, sanctioned by the Commissioners in Lunacy, the recent statutory law is taken as superseding or supplementing the common law; and the former, without defining insanity, or prescribing any specific grounds on which a patient may be detained as a lunatic, clearly enacts that "care and treatment" are the chief objects of his detention, and his being dangerous is nowhere made a *sine qua non*. This being so, the first thing a medical man with an insane patient who needs care and treatment in an asylum, or to be boarded with a private family, has to do, is to make up his own mind in regard to the definite grounds on which the steps are to be taken. Having done so, his next business is to convince the patient's responsible relatives of the necessity for certification. In doing this it is far better not to press them too strongly at first if they do not see the necessity for it. All that is necessary is to explain the reasons for his opinion, point out the risks, and that the responsibility rests on them, not on the doctor. It may in some rare cases be necessary, before certifying, to get a letter from a responsible person, protecting the doctor from risk of a legal action. This is a risk no medical man in signing a certificate of lunacy should subject himself to if he can help it. Recent English lunacy statutes debar actions if there is no reasonable ground for imputing to the doctor want of good faith or

reasonable care, a Judge of the High Court having power to stop proceedings on application; while the Scotch law debars actions after twelve months from the patient's discharge from the asylum; but if, in spite of this, under the common law, actions can still be brought against medical men for doing a statutory duty in a legal way, they must just protect themselves by a letter of indemnification, or as best they can. In the case of pauper patients the chief responsibility undoubtedly rests on the medical man, to whom the relieving officers or inspectors of poor must refer the question of asylum treatment, and virtually are obliged to act on his opinion. The doctor runs the risk of an action accordingly.

In solving the question of whether a patient should be certified as a lunatic or not, the first thing, of course, to ask oneself is—"Is the patient insane?" And it is well to be prepared to say what kind of insanity he labours under. To determine this question, one must have evidence of mental disease observed by oneself, but may also use any facts proving it as ascertained from others who have seen the patient. If he is insane, then comes the further question—"Is he a proper person to be detained under care and treatment?" Many persons are insane in a medical and even in a legal sense, yet have so much self-control left, or their mental peculiarities are so slight and harmless, that they are not proper persons to be detained under care and treatment. I would say that the chief things that constitute the statutory fitness are—danger to themselves or others; disturbance of the public peace; inability to care for and manage themselves and their affairs; acute mental symptoms of any kind; or amenability to curative treatment which cannot be applied without certification. No doubt all sorts of considerations—social, monetary, and domestic—come in before determining the expediency of certification. One has to ask what are the reasons for his removal from home, how he will be likely to look on it after his recovery, and how will it affect him and his affairs generally? Then, of course, it is proper, having

determined that he should be certified, to ask what legal risk there is to yourself or to his relations. I knew an undoubtedly dangerous lunatic who kept himself out of an asylum by bribing one member of his family by money gifts to oppose his seclusion under all circumstances, and by threatening any one of his children who might move in the matter with disinheritance in his will. It may be necessary to see the patient several times before you can make up your mind. When those questions have been answered, and you proceed to certify, then (*a*) fill in the first and purely formal part of the certificate in all cases as if it were an important business and legal document, *looking at the directions on the margin.* Our profession is not always sufficiently particular about this. Lawyers look on this part as of much importance. Not to designate the patient, and put in his residence at the proper place, is, according to Sir Cresswell Cresswell's judgment, to invalidate the whole document, and the English Commissioners always return it to the writer for correction if this is not done. The reason, no doubt, is, that there being ten thousand Thomas Jones in the country, it is necessary to discriminate clearly which one is the lunatic you are certifying. In England and Ireland you must have seen the patient within a week of certification, in Scotland on the same day.

(*b*) Then comes the most important part of all, viz., the "facts indicating insanity observed by myself." Without these facts the certificate is not valid at all. Think of what the patient says, what he does, and what he looks like. By all means put in first the most evident and indisputable insane delusions the patient labours under, in as crisp and clear a way as you can. No evidence of insanity is so satisfactory to lawyers as insane delusions. Next to those in cogency come incoherence of speech, or shouting, or outrageous conduct, or loss of memory and reasoning power. Put into the certificate some of the patient's very words, if possible. Next to those come such "facts" as relate to the

patient's appearance, expression of face, and manner. If you have known him before, any changes from his normal condition should be noted. By the way, in putting down delusions it is necessary often to add to a statement of one, the words "which is a delusion." Some things may be quite true, *e.g.*, "He says he has £10,000 a year," and therefore needs this explanation. On the other hand, such delusions as "Says he is God Almighty" do not need anything of the kind. If any suicidal or homicidal expression can be got hold of, put it among the facts, but usually these have to come under the "facts communicated by others." Negative signs, such as absolute taciturnity, insensibility to impressions from without, are good enough "facts." It is better to put no "facts" that do not clearly indicate insanity, but there are some cases where the evidence must consist of lesser things than those I have mentioned, put in a cumulative way, *e.g.*, "His manner is very peculiar. He is slightly incoherent and silly in speech. His memory is impaired somewhat. He has no sane interest in his affairs or in his relations or belongings. His eye is vacant in expression. His whole conversation gives me the impression that he is unfit to manage his affairs," were really all the facts observed by myself which I could put down as the result of one interview with a person of mildly enfeebled mind. It is better to use facts observed at the last interview.

I could give instances of most ridiculous "facts" put into lunacy certificates by medical men. "He is incoherent in his appearance." "Eyes restless and wandering, but following the usual occupation of breaking stones." "Says she is in the family way (she had a baby in a few months)." "Reads his Bible, and is anxious about the salvation of his soul," are examples.

Never put in such statements as these—"He has no delusions." "His self-control is not lost." Those are not uncommon, but they go to prove sanity, not insanity.

(*c*) The "facts indicating insanity communicated to me

by others," that follow, are very important as subsidiary and not essential points of the certificate. Among them you can insert descriptions of previous aggravations of conduct and speech, of attempts or threats of suicide, or danger to others. You must put down the name of your informant.

(*d*) The signature, residence, and dating must be carefully done. After the whole certificate is completed, I advise every man to run it over carefully. Few men are so accurate that they will not sometimes omit something.

The greatest tact is necessary often to bring out the real condition of a patient's mind. This is often impossible, in fact, even when you know on good evidence that he is insane. Especially is this the case when he thinks you are a doctor come to certify him. He then naturally conceals his delusions, and puts his best foot foremost. Sometimes a little stratagem is necessary. The weak are always cunning, and it seems as if this quality was exaggerated in some insane patients. By all means get the cue to his delusions, if they exist, and as full a knowledge of the patient's case as you can before you see him. I have more than once entirely failed to educe facts enough on which to found a certificate in the case of a man I knew to be insane and dangerous. I do not consider it a justifiable thing to give the patient drink in order to make him speak what is in his mind, or to bring out his peculiarities.

In England and Scotland patients may be placed under treatment in asylums on "emergency orders," given by a relative or friend and one medical certificate. In England they can be detained on such orders for seven[1] days, and in Scotland for three days without any magistrate's or sheriff's order, which can be got within these times.

3. *Medical men have to give certificates of sanity as well as of insanity sometimes.* These need great care, much circum-

[1] A new Lunacy Bill now before Parliament reduces this to four days.

spection, and considerable inquiry into the facts of a man's life and behaviour. I have on two occasions had insane patients leave the Asylum and return to me with certificates of sanity got from incautious doctors. In one case the patient produced and kept it as a good joke. It would be an awkward thing for the certifier if, after getting such a certificate, the patient went and made a will, or killed himself. In a way, a certificate of sanity needs more inquiry before it is given than a certificate of insanity. Certificates of sanity are needed to set aside a *Curator Bonis*, or committees of the person and estate in England, and often also before a man is allowed to resume employments and public appointments.

4. *Management of Property; Civil Rights—When a man is* ipso facto *deprived of his civil rights and the control of his property by being put into a lunatic asylum, or is so insane or weak-minded that he cannot properly transact business, he must have his property looked after and administered for his benefit, and a legal process has to be gone through for that purpose.* In England and Ireland affidavits have first to be given, stating facts indicating insanity, and especially incapacity to manage property, which are sent to the Lord Chancellor. On them, as *prima facie* proof, an inquisition *de lunatico inquirendo* is held by a Master in Lunacy, sent to the patient's residence for the purpose, at which medical and other sworn evidence is taken. If the patient is found lunatic, one person is commonly appointed "committee of the person," to control the person, and another "committee of the estate," to manage the property, and no further certificates are needed for placing him in an asylum. If the patient demands it, and the Court thinks it right, a jury may be called; if not, the Master sits alone and reports his decision or that of the jury to the Lord Chancellor. This is a cumbrous and expensive, though an efficient and fair process. If the property is small, the process is simpler and cheaper. Some such process should be provided for doubtful and important cases, but in ninety-nine out of a hundred it is an unnecessary waste of money and

judicial talent. The ordinary Scotch process is far simpler and less expensive. Two doctors sign certificates "on soul and conscience" of the man's "insanity or incapacity to manage his own affairs, or to give directions for their management," or some such form, and those are presented with a petition from all his near relations, stating the amount of his property, to a Judge of the Court of Session, who orders them to be served on the patient and intimated in a certain place in the Court for eight days, after which, if there is no opposition, a *Curator Bonis* is appointed, who then manages the lunatic's property, and acts for him, after finding due caution for the proper performance of his duties. He has to present an account of his intromissions to the Court every year. The weak point of the Scotch system is, that usually no proper guardian of the lunatic's person is appointed. The nearest relative commonly acts as such. If the application is opposed, the Judge has power to investigate the facts in almost any way he thinks best, through the Sheriff of the County, through an expert, or by means of evidence in open Court. Occasionally a *Curator Dative* is appointed to control the person, but this, with the process of "Cognition," are cumbrous antiquated processes seldom resorted to. We need in Scotland an inexpensive but efficient process, combined with the procedure for the appointment of the *Curator Bonis*, to appoint a guardian of the person. Differences of opinion between the curator and the relatives I have known to occur with us as to the disposal of the patient.

5. *Medical men are often called on to give evidence as to the existence or not of mental disease in persons accused of crime, to enable the law to fix or to absolve from responsibility.* In Scotland the procurator-fiscal usually has a medical adviser, with a view to determine the kind of proceedings to be taken in cases where crime, danger, or disturbance may have been the result of mental disease.

The forms of insanity in which crime is usually committed are mania, epileptic insanity, delusional insanity, and alcoholic

insanity, and sometimes puerperal insanity, delusional and homicidal melancholia, sometimes dementia and congenital imbecility, and also impulsive insanity where there are uncontrollable homicidal, kleptomaniacal, pyromaniacal, destructive, or animal impulses. Some of the complications of mental disease with the effects of drunkenness are often most puzzling both to medical men and to lawyers when crime has resulted from them. My experience is, that crime is usually committed at the same stage of attacks of insanity that suicides are ordinarily committed, viz., in the incipient stage. Drunkenness is held to aggravate crime, but alcoholic insanity exempts from punishment.

There has always been a tendency towards a divergence of view between medical men and lawyers in regard to the amount and kind of mental disease that should exempt from punishment for crime. Certainly the law has gradually come round more and more towards the medical view,—has, in fact, recognised the facts of nature in mental disease. Judge Tracey held that, except a criminal was irresponsible as a "wild beast," he should suffer punishment. Lord Mansfield held that a "knowledge of right and wrong" was the test. The twelve Judges declared in M'Naughton's case that a knowledge of right and wrong in relation to the act committed should be the true legal test; Lord Denman said that legal responsibility should depend on the presence or absence of insane delusion; Lord Moncreiff has laid it down that a man's habit and repute as to sanity among his fellow-men who knew him well should determine his legal responsibility for any crime committed. At last the new criminal code as proposed by Mr Justice Stephen would make the man's power of controlling his actions the test, and with that view every medical man will agree. He says—"The proposition which I have to maintain and explain is, that if it is not, it ought to be, the law of England that no act is a crime if the person who does it is, at the time when it is done, prevented, either by defective mental power or by any disease affecting his mind, from con-

trolling his own conduct, unless the absence of the power to control has been produced by his own default." While Judges during three centuries were laying down these rules of law, men that we now hold to be insane were taking away their own lives by the hundred every year, most of them knowing it to be "wrong" and yet doing it—a "crime," and a "motiveless" one in most cases. Those suicides, legal "crimes," were surely thus exhibiting to all who had eyes to see, that, in such cases at all events, something was interfering to make inoperative every natural instinct, every effort of will, and every motive of ordinary human action—that something being disease and disordered function of the brain. But judges and lawyers often use terms in a technical sense, and in the same way construe statutes and former judicial decisions so that their effect becomes entirely different from what they seem.

No doubt there are many difficult cases — cases on the borderland of disease, cases where vice and mental disease are mixed up puzzlingly, cases of mild enfeeblement of mind, cases of drink voluntarily taken, when its effects were well known, and after being taken crime has been committed in a condition of delirium or short frenzy. We must admit we have no definite test as yet for detecting minute degrees of mental disturbance. I only wish we medical men were placed in a more satisfactory position before giving evidence. The whole facts on both sides are seldom put before us, and we are often regarded and treated in the witness-box as partisans —a position that we should resent as derogatory to science. Either we ought to be appointed as Assessors to the Court, or the Court should ask for our Report on which we could be cross-examined. At present many of the persons solemnly condemned to death for the crime of murder are found afterwards to be insane by a private medical inquiry ordered by the Home Secretary, no evidence as to the prisoner's mental state having been submitted to the judge and jury, a proceeding that surely tends to show that our methods of trial are far from being perfect.

6. *We are often appealed to as to the capacity of a man to make a will, or to transact ordinary business, to enter into ordinary contracts, or to contract marriage.* The principles on which our opinion should be founded for the three latter purposes are just those on which we act in determining the question of sending a patient to an asylum. In regard to will-making, great attention has been directed to the subject, and there are certain fixed legal and medical principles that should be kept in mind by us. The great trouble is that we are usually not consulted at the time of making the will, when the real capacity of the testator could be examined into, but are placed in the witness-box after he is dead, with one-sided imperfect information, and with every motive operating on the side that consults us to prevent us getting at all the facts. In will-making we must enlarge our ideas of the disturbances of the mental functions of the brain beyond those comprised under technical insanity. The senile dotard, the apoplectic, the man exhausted in strength from disease and approaching death, the man confused in mind from fever and drink, the man distracted by terrible pain, the man whose condition is weakened so that he is made mentally unresisting and facile by disease and by the near approach of death, may all require their testamentary capacity to be tested. It is most important that a skilled and experienced medical man should be asked to examine impartially into the testamentary capacity of such cases before the destination of great sums of money is irrevocably decided by a document that above all things needs soundness of judgment for its validity. It would be well were our profession more called on for this purpose. I was once told by a distinguished counsel, with a large experience in the Probate Court, that he had never known a will upset where a respectable doctor had witnessed it after examining into the testator's state of mind, and an agent of repute had drawn it up, neither of them taking any benefit under its provisions.

It may be held as proved by legal decisions that a lesser

amount of mental capacity is needed for making a valid will than for managing property or enjoying personal liberty. Patients in asylums have made good wills during remissions of their disease, the "lucid intervals" of the older writers. Patients with insane delusions that did not affect the provisions of the will have been held by the highest tribunals to have made good wills (Banks *v.* Goodfellow). Very facile persons have made good wills, and those on the point of death constantly make wills that stand, while wills with the most absurd provisions have stood in law. There are now three cases in which wills have been made by patients immediately before they committed suicide, and they have been upheld by the Scotch Court of Session.

When a medical man is asked to examine into the testamentary capacity of a patient he should insist on seeing the patient alone, or at all events only in the presence of a nurse or a family agent, and the first thing to be ascertained is this —(*a*) "Is the patient free from the influence of drink or drugs, and in his usual state?" Then—(*b*) "Does he know the nature of the act he is to perform, and the effect of the document he is to sign?" The next thing (*c*) is to find out if he is not influenced in the doing of it, or in regard to any of its provisions, by insane delusion, or by an insane or morbidly enfeebled state of mind. Then (*d*) ascertain if there is facility of mind from bodily disease, intemperate habits, weakness or any other cause, or undue influence being exercised from without. Here is where you will find the benefit of being alone with the patient. I remember an old dying man confessing to me, when alone with him in these circumstances, that his niece, who was also his nurse and constant companion, was really compelling him against his judgment to make a will in her favour, his own volitional and resistive power being weakened by his state of bodily weakness and dependence. The influence exerted on many patients in bodily weakness, especially if it has been prolonged, by a nurse constantly in attendance is sometimes absolutely

dominant, and quite irresistible by the will of the patient. A very interesting bit of medico-psychology this is. The influence of previous intemperate habits is often so damaging to the mental power as to interfere with proper testamentary capacity. The memory is then chiefly affected, but nothing is more common than for alcoholics to take morbid and irrational prejudices against their relations, and delusions of all sorts, especially of suspicion, as the result of the brain damage from alcoholic poisoning.

Supposing you are satisfied so far; the next thing (*e*) is to make the intending testator go over the particulars of the disposition he wishes to be made, without prompting, or suggestion, or leading questions. And he should be made to do this twice with certainly a quarter of an hour's interval between the two statements. It is often well to make him tell the names of all his near relations. Sometimes a man wants to make a will, whose memory is so affected that he has forgotten the existence and the names of relations so near that they have claims on his attention at such a time. You can then see if the disposition is a natural one, and find out from him the motives for the will being made, for the omission of any relatives, and for any provision of it that may seem strange. Lawyers and the public are apt to regard the naturalness and reasonableness of the will as being an absolute test of whether it should stand, irrespective of the state of brain and mind of the testator. We have to ask whether the whole motives of action of the man *quoad* the will, are sane, reasonable, and uninfluenced by morbid motives? Is it a natural will in the circumstances? Is it the act of the man himself exercising his own will spontaneously. I remember being called to see a man who was dying of bronchitis and heart disease, with his breathing impeded, his strength ebbing away, and his mental power impaired by the non-oxygenated blood supplied to his brain. He had made a will in favour of a former mistress, and was in a state of great remorse, and wanted to leave his money, which was considerable, to his relatives. But he could

not twice over remember all the provisions—these being a little complicated. I refused on this account on two occasions to say he had testamentary capacity. But, as sometimes happens, he became more clear in mind before death, and I was hurriedly sent for late one night to see him. He went clearly twice over the provisions he wished made in his will, and told me why he wished these made. His reasons were natural and right. The lawyer was there with the document drawn up, and the testator had just power to make his mark before he died. Yet this will was held good in law in spite of an attempt to upset it. (*f*) Ascertain if possible from him if he had intended to will his property as proposed before his illness, and for how long. Try and get independent testimony from others on this point. The next thing (*g*) you have to ascertain is if the intending testator knows in a general way the amount of the property he has to bequeath. I lately, on getting to that point in the case of a very sensible-looking man, was astonished at being told by him that he was worth £100,000, which I knew to be quite impossible, and of course no will was made. (*h*) Ascertain what brain disease, if any, the patient labours under, carefully considering the question as to whether the convolutions are affected by such disease. The most common brain disease under which patients will be found to labour is apoplexy or paralysis. This may exist in any degree, and may be accompanied by any mental condition from almost perfect soundness and force up to complete fatuity, facility, and want of memory. The usual morbid emotional outbursts of weeping, or irritability, especially if the patient is aged, often indicate loss of mental power and of volitional resistance. Persons so damaged in brain are often irritable, prejudiced, delusional, and even vindictive as the result of their disease.

It is most necessary not to let a good motive make us sanction a bad will, however natural its provisions may be, however much trouble or expense it may save. I am frequently asked to sanction wills being made by persons unfit

to make them, on account of the convenience of having a will or the saving of expense and trouble. I have found but little realisation of the impropriety or illegality of getting dying people, or those whose minds were enfeebled from paralysis, who did not really know what they were doing, to sign wills as a matter of convenience, even among conscientious reputable people. In examining patients as to will-making it is very necessary and desirable to be perfectly impartial, to make no suggestion and express no opinion of one's own as to the justice or propriety of the settlement to be made, and on no account to say anything that would influence the testator in his views as to the disposition of his property.

7. *The detection of feigned insanity is a duty sometimes laid on a medical man.* There are no fixed rules or tests by which feigned insanity can be detected. I need hardly say we have first to see if the type presented is that of an ordinary kind of insanity. Most imitators mix up incoherent maniacal symptoms with silliness, and will talk no sense at all, and pretend to know nothing. In fact, they overdo their part. The patient should be carefully watched all the time, sometimes ostentatiously watched to keep him at it for a long time, and then again when he does not know he is observed. No sane man can imitate the dry skin and lips, furred tongue, constant restlessness by day and night, high temperature, and constant sleeplessness of acute delirious mania which for a short time feigners often try to simulate. A man imitating the shouting, &c., of acute mania perspires freely, while an acutely maniacal patient seldom does so. The sensibility to pain should be tested, and sometimes, in prisons, a battery is found useful in the case of old crafty malingerers. I have heard of a man being put under the influence of a drug before the doctor was known to be coming, in order to produce a real stupidity with confusion of mind. I have been deceived by a clever imitator of acute mania so far as my conclusions were arrived at from one visit. Epilepsy and epileptic mania are very commonly imitated.

I have known a really insane man assume an exaggerated insanity to make his friends think the asylum was doing him harm; and a sort of grotesque semi-volitional imitation of mania is common in hypochondriacal melancholics to convince their friends how ill they are; while in hysterical girls imitations of maniacal attacks and of unconsciousness are very common to excite sympathy and attract attention.

8. *One of the most difficult and often most responsible duties that fall to a medical man's lot is to give confidential family advice about engagements to marry when one party has been insane, is threatened with insanity, or has an insane heredity, to advise as to the education and profession of children of a very neurotic heredity, or to advise as to the significance of sudden changes of conduct and sudden outbreaks of gross immorality, or of a tendency to unnatural crime, or other motiveless and unaccountable conduct in previously reputable sane people.* Such advice may have the most serious consequences. My feeling is always against the marriage of women who have been insane. I always advise young men or young women to avoid marrying into a very neurotic and insane stock. The risk is very great. I quite agree with the French medical opinion that there is a special tendency for members of neurotic families to intermarry, and an affective "affinity" among such that tends towards love and marriage. That is no doubt bad for the race, and as physiologists we should try and stop it when we can. To have a neurotic young man marry a fat, phlegmatic young woman may be admissible, and a good safe stock may result. But what are we to say about the marriage of the neurotic, thin, hysterical young women, with insanity in their ancestry? We know they will not make good or safe mothers. Therefore, in them we ought to discourage marriage. However good its physiological effect might be, in some cases, on the individual, bad mental and bodily qualities, as well as tendencies to disease, are thus propagated to future generations. They leave the world

worse than they found it thereby, the disease and therefore the misery in it being increased. The possible compensation of a genius once in an age is not to be trusted to. I believe a healthier kind of genius would result from better stock. Science, till it discovers a way of correcting such bad stock, must say, "Do not propagate it." A sporadic case of insanity, or of senile break-down imitating insanity, may occur in almost any family. That would not warrant any such advice about the marriage of relations as I have been giving. The relatives of such a case may all be perfectly sound. I am speaking of families in which the neurotic temperament, and especially those in which the nervous diathesis, is present. If such persons are to marry, do not let them marry too young, and let them marry into a sound, muscular, fat, non-nervous stock. Though the contrary has been the rule, my advice has over and again been taken, and engagements to marry not entered into on the ground of bad heredity. If you are asked about any young man or woman—"Will he or she become insane or not?"—say that science does not yet enable us to answer that question certainly.

As to the mode of education of the children of insane or neurotic parents, there can be no doubt whatever that it ought to be on very stringent physiological lines, and under medical advice. Such children should all be brought up in the country, and fed mostly on milk and cereals, and should have lots of fresh air, and no improper excitement; they should have well-ventilated class-rooms, short school-hours, and their lives and time should be systematised. Their weak points should be corrected by their modes and conditions of life. They should be kept fat, if possible, one and all. They should have no alcohol, and no tobacco till after twenty-five. At the coming on of the reproductive period of life special care should be taken with them. The sexual appetite is most difficult to manage in them and by them. It is often strong, disturbed, and apt to take unnatural forms, while the power

of control over it is apt to be small. Erotic imaginations are apt to become the dominant factors of life and conduct. The development of control should be the chief aim in their education. The occupations they choose should not imply intense head work, nor a sedentary life, nor excitement. Make them colonists, sending them back to nature, or get them into fixed salaried places with systematic work and a regular holiday. The worst of it is that such persons often tend to do exactly the reverse of all this. Some especially neurotic children need very special modes of education. I have seen cases who could not safely be sent to ordinary schools. Through precocious stealing, lying, and vice they were constantly getting into trouble. They were without much moral sense or self-control, and had erratic, motiveless ways. I have seen good results with such children sometimes by placing them in a quiet family in the country, under motherly care, under special rules and guidance, and away from much temptation. Such children are the stock out of which the insane, the persistent masturbators, the dipsomaniacs, and the motiveless "instinctive" criminals arise, with a poet or a genius to redeem the class once in a century and to vindicate nature's law of compensation in the world.

LECTURE XX.

A SUMMARY OF THE GENERAL TREATMENT AND MANAGEMENT OF INSANITY LOOKED AT AS A WHOLE: AND ON THE USE OF HYPNOTICS, SEDATIVES, AND MOTOR DEPRESSANTS.

Insanity as a disease—Urgent questions to be faced as to causation, heredity, diathesis, former diseases, concealment of symptoms—Mental symptoms—Bodily symptoms—Examination of patient—Diseases that simulate insanity—Dangers—Treatment—Nursing—Home treatment—Treatment in lodgings or hired house—Asylum treatment—Why a patient should be sent to an asylum—Legal forms—Food and feeding—Food-medicines—Alcoholic stimulants—Tonics and nerve stimulants—Exercise and fresh air *versus* rest—Occupation and amusements—Hypnotics, sedatives, and motor depressants—General principles of use—Dangers of abuse—What do we desire to attain?—Opium in melancholia—Paraldehyde—Sulphonal—The bromides and cannabis indica—Hyoscine.

Insanity a disease.—The different varieties of insanity have for the most part different symptoms, risks, and terminations, and they commonly imply some difference of treatment, but they have also many features in common in management and treatment. A man's "mind is affected," and with this there are bodily symptoms. The practitioner has therefore before him a "disease," as popularly understood, to treat. From this point of view it may be useful, especially to busy practitioners, in this closing lecture to summarise and condense the views scattered over the preceding lectures, and to enunciate the general principles of treatment applicable to insanity as a whole. I have often been asked to do so by medical friends,

who found the discussion of the special varieties of the disease and the clinical illustrations too long for emergencies.

Urgent Questions.—When a patient's mind has given way, or is threatening to do so, there are certain questions that the doctor should pass before his mind *seriatim*, and come to some sort of conclusion about them, either at the time or as the case develops. The chief of these are:—What is the probable cause of the mental disturbance? Is it from within the man or from without him? An evolution of his heredity? An almost necessary incident in his development or decadence? A result of the conditions of his previous life, his environment having been inharmonious? Had he by his conduct or mode of life anything to do with bringing on the disease? Or is it the direct result of some cause from within? Then comes the further question—Are there more causes than one in operation? Most cases have more than one cause. It will depend on how these questions are answered whether the next can be favourably regarded. Can the cause or causes be removed, and how? The relatives will always assign a cause for such a strange thing as insanity, but they will be wrong as often as not.

It is most important in most cases to get information as to the heredity of the patient, both in regard to mental disease and the neuroses; and it is well to find out the heredity and personal diathesis especially in regard to consumption, rheumatism, gout, syphilis, &c. The developmental diseases which the patient has suffered from should not be lost sight of, especially the early neuroses. The next set of questions relate to the symptoms present: Are all the symptoms really exhibited? or is the patient, by voluntary effort or otherwise, concealing important symptoms? Is there anything below the surface of the case? Remember that relatives and friends tend to minimise certain mental symptoms and greatly to exaggerate others. They think little of mental depression and delusions so long as the outward conduct is not much changed, while they are frightened unduly about incoherence,

threats, noise, or violence, or about what seems to them loss of consciousness. To what extent are the symptoms purely mental or chiefly mental, and to what extent are there bodily symptoms or accompaniments? Have they come on gradually or suddenly? Are they progressing or stationary? Are the great organic functions affected or not?

Mental Symptoms.—Depression, suicidal tendencies, elevation, excitement, delusions, stupor, impulsiveness, silliness, loss or perversion of affections, incoherence of speech, loss of memory, mental automatism, dominating and fixed ideas, suicidal and dangerous tendencies, are the chief mental symptoms to be inquired into.

Bodily Symptoms.—These are present in most cases of insanity. Preliminary headaches, all kinds of perverted sensations in head and in body, sleeplessness, losing of flesh, anorexia, constipation, changed expression of face and eye, changed tastes for food and drink, altered secretions, slightly elevated temperature with a tendency to an evening rise, tremblings of facial muscles, impaired articulation, especially in the case of difficult words, a dry skin, motor paralysis, are the chief bodily symptoms in ordinary cases to be inquired into. The question must always be asked, Is there organic disease of the brain or spinal cord, or nerves?

Examination of Patient.—The examination into every bodily symptom, into the condition of every organ, cannot be too thorough. Mental symptoms constantly depend on reflex irritation of the cortex from the peripheral organs. Always, for instance, try to find a bodily cause for a delusion.

Diseases that Simulate Insanity.—Keep in mind that though the delirium of fevers is emphatically mental disorder, it is not reckoned technical insanity that should be certified and sent to asylums. The following are the chief diseases that may be attended by cerebro-mental symptoms simulating insanity, viz., typhoid, typhus, small-pox, scarlet fever before the eruption comes out, meningitis, traumatic injury to head, mental shock, hysteria, uræmic delirium and coma, cerebro-

spinal meningitis, drunkenness, the effects of opium and other neurotic drugs.

Danger.—Then comes the very urgent question of *danger*. Does it exist? and in what form? What are the risks, in short? Are they to the patient's life, by direct attempts at suicide? or by indirect means, such as taking too little or no food? Are there risks to others? And to whom? Is there risk of exhaustion by excessive cortical action? Or are the risks those of neglect of organic functions? Or neglect of the conditions of life necessary for health or recovery, such as exercise, fresh air, rest or sleep? Risks to reputation, to fortune, to business, to position, have all to be thought of. A medical man cannot be too candid with the relatives and friends of a mentally affected patient as to the risks of the case.

Treatment.—Then comes the most serious question of *Treatment and Management*. Almost the first thing to be considered in all such cases is: who is to be the responsible nurse, or companion, or observer of the case? Can a really good, experienced, skilful nurse or attendant be got? This is a *sine qua non* in most cases. A "bodily nurse," even a good one, is often quite unreliable, both for the observation of mental symptoms, for appreciating risks, for acting in emergencies, and even for the routine treatment and management. Good nurses can often be got from asylums, and most nursing institutions have nurses with "mental" experience and training. The Medico-Psychological Association has lately instituted a course of training and an examination that will no doubt in time produce a body of trained male and female attendants and mental nurses available for the public, each with a certificate that will be a guarantee of special knowledge. In some cases the disease can be cut short by treatment or by altering the conditions of life. Change of scene often is good. Travel is good in the very beginning of a few mental cases, but it should not be fast travel. A sea voyage, that favourite recommendation of despair, often does far more harm than good, and is attended with many risks.

How many suicides have I known to result from this cause! But there are cases where it is the best thing to advise. A course of mineral waters and baths, or a hydropathic with a good system of baths, is a far safer recommendation, and suitable for most cases, but even that is often too public or too exciting.

Home Treatment, Treatment in Lodgings, and Asylum Treatment.—It is one of the most important decisions that has to be come to in the treatment of decided mental disease, whether the patient shall remain at home, shall be sent to suitable lodgings, or shall be sent to an asylum. There are comparatively few grave cases except acute puerperal mania, short attacks of delirious mania and alcoholism, that can be best treated at home, and then only among the well-to-do, where good nursing and suitable rooms can be got, and the attack does not last long, runs a definite course, and does not need for its treatment much open air and exercise. When a case of mental disease becomes quiet and chronic, with no urgent symptoms and no great tendency to degeneration of habits or mental condition, home is sometimes a suitable residence if there is a responsible head of the house, personal nursing, and general medical guidance.

When the case is not doing well at home or is not likely to do well, then comes the question of a hired house or rooms, to be tried before an asylum is resorted to, or during the whole attack. In selecting a house or rooms the following principles should guide us. It should be in the country or in the quiet suburbs of a town, but not too isolated. It should have an inclosed garden with good walks. It should have easy access to the country roads. Rooms on the ground floor should nearly always be selected. Before use, all door keys should be taken out and kept by the nurse. If an inside bolt is on the W.C. it should be taken off, and the windows should have stops put on, so that the lower sash cannot be raised more than five inches. Sunshine and cheerfulness should be prime motives for selecting a living-room.

During the treatment in rooms medical visitation should be frequent; this has a good moral effect on the patient, and keeps the nurses up to the mark and prevents them thinking they are only "keepers" for the safety of the patient rather than nurses for his cure. All precautions against suicide and danger should be carefully taken and stringently enforced. If the case lasts long, special means must be taken to provide amusement for the patient and break the monotony. Visits of relatives, while often exciting and harmful in the acute stage, do much good, and keep everybody up to the mark later on. Change of rooms may be needful to secure change of air and scene.

I have treated almost every kind of case, from acute, violent, raving mania to the mildest melancholia, in private houses and in lodgings, and very many with success. It is largely a question of house, nurse, and money. It is of course very expensive, and fails in many instances.

The forms of insanity most suitable for treating in such a way, or that it is most desirable so to treat, are mild melancholia, adolescent insanity while recent, puerperal insanity, some cases of hysterical insanity, mild cases of mania that look as if they would run a short or regular course, lactational insanity, that of pregnancy, senile insanity in the very aged, and some cases of alcoholic insanity.

The advantages are that the "name of an asylum" and of technical insanity is avoided, a most important matter in some cases. Professional reputation and success are less likely to suffer; appointments run less risk; the patient is far better pleased when he recovers, and his friends are more satisfied. But the patient's recovery must be the paramount consideration. He has the right to have the best chance of living, and not dying mentally. Its disadvantages are the want of constant medical supervision and of a medical routine of life and discipline, the difficulty of getting responsible and skilled nurses, the want of freedom of walking in some cases, the risk of disturbing neighbours, the greater risk of suicide, the

friction of nurse and patient left so long together, the irritation of personal control, the monotony of the life, and the want of the stimulus of institution life.

Poverty almost always implies an asylum as securing the best treatment in nearly all forms of insanity. Long continuance of acute symptoms also does so. Intense and subtly-schemed suicidal attempts, great violence and homicidal impulses, very dirty habits, much noisiness, and non-recovery after a reasonable time, should suggest asylum treatment. Remember that the nurses may be a little influenced in their reports by the fact that their pay ceases when the case is removed from their care, and we ourselves are in the same position. A good asylum has the advantage of a healthy situation, large grounds, extensive walks, a suitable dietary, a healthy regime of living, regularity, order, system, which in many cases are all most therapeutic. It has proper rooms for violent cases, plenty of skilled nursing and medical supervision that can scarcely be obtained at home or in lodgings; then it has suitable occupations and amusements. Good modern asylums have special means of segregating the different classes of patients. The different parts of the house are specially adapted to the state and cure of the different varieties of mental disease. They have villas, hospital wards, and seaside houses. They are, in fact, mental hospitals, built and conducted on scientific principles, with everything to cure and to antagonise mental disease. The effect of being placed in such a hospital is in some cases simply wonderful. All this makes for recovery most powerfully. No case should be allowed to drift into incurability without such an institution being tried.

Its disadvantages are the risk of annoyance from the presence of fellow-patients in a still worse state of mind, the chance of seeing dirty and degraded cases that shock a patient during convalescence, the risk that listlessness and apathy should degenerate into dementia from want of interest in life, and too little exercise of volitional power. Some people, too,

and they are of the predisposed neurotic supersensitive folks, have all their lives a foreboding horror of "a madhouse." How great a blessing it would be to poor afflicted humanity, both the insane and their much to be pitied relatives, if every vestige of prejudice and terror were removed from the idea of a mental hospital.

A doctor sending a case to an asylum should have in mind that there are two events, either of which will probably make the relatives blame him and say that he has made a mistake in recommending the step—these are death, or recovery within a week or a fortnight after admission. If the latter occur, the patient will be likely to join in the disapproval.

Legal Forms.—Before an asylum is decided on, the relatives should be distinctly told that it implies formal legal papers and medical certificates being filled up, and that a magistrate's or sheriff's order will be needed—all this, though not implying publicity, yet placing the patient in the category of the technical insane. The full reasons, *pro* and *con*, should be explained to them, and I always advise my medical friends not to be too urgent, but to temporise for a little if the relatives are unwilling or will not give immediate consent, except the symptoms are very urgent or very dangerous in character. Let them see the patient, and be fully convinced of the expediency and necessity of the step in the patient's interests. The forms required can be got at any asylum, usually also from any inspector of poor in Scotland. When there are no special reasons to the contrary, it is usually far better for the patient to be taken to the asylum by a near relative and nurse or attendant than the family doctor. Especially the asylum doctor should have nothing directly to do with it if he can. Don't let him be connected, in the patient's mind, with the decision to be sent from home, and avoid deceiving the patient. Commonly say that he is to be placed under a doctor's care in order to get better. I know the difficulty of this, and the terrible temptation to deceive him as to his destination; but the effect of such deception is

often very bad for him, and lastingly so. It makes him suspicious of every one, and sets his back up against necessary treatment. In my experience, human ingenuity in prevarication reaches its limits in the lies told to patients as to where they are going, and why they are going, when they are being brought to asylums.[1]

Food and Feeding.—In all cases the questions of food and feeding is one of the first considerations. Food must always be tempting, nourishing, and well served. For most acute cases it requires to be liquid or nearly so, and often repeated. Nothing is so good, and nothing can be given so easily, as milk or liquid custards, each made of a pint of milk, just under the boiling point, into which two or three eggs, after being beaten, are stirred in with sugar, a tablespoonful of sherry, and a little nutmeg. One of these custards is a meal, which the patient can drink off in a minute; or if he refuses absolutely, it can be poured into his stomach quite easily through a funnel attached to a long rubber tube, No. 12 or 14 catheter size, passed through one nostril. Strong soups, with plenty of vegetable juice, jellies, and fruit juices, can also be easily given. Depend upon it, under-feeding is far more risky to recovery than over-feeding. Fatten and nourish your patient is a rule to which there are marvellously few exceptions in mental medicine.

Food-Medicines and Stimulants.—Cod-liver oil and the emulsions of which it is the chief constituent, and the malt extracts, are exceedingly useful in melancholia, senile insanity, and other cases with innutrition. In many such cases and in neurasthenic cases wines and malt beverages are useful both for digestion, nourishment, and sleep, and they are easily given. Try stiff doses of spirits, suitably diluted and hot, to procure sleep in some cases of acute excitement.

Tonics and Nerve Stimulants.—I use an enormous quantity of quinine in the treatment of all my patients who are run down in body, or whose appetites are poor. I also use much

[1] See paper by Dr F. A. Elkins in *Edinburgh Medical Journal*, March 1892.

iron in anæmic cases, and the dilute mineral acids are distinct brain stimulants, as experimentally demonstrated by Professor Roy. The whole class of tonics is of undoubted service and should be largely given, each medicine for five or six weeks, and then a change of tonic being made. The class of direct nerve stimulants, of which strychnine is the best type, and which forms the most active constituent of the numerous syrups (Easton's, Fellows', &c.), should not be given indiscriminately. They may cause cortical excitement; they often stimulate the sexual nisus, and they frequently aggravate insomnia. They are not suitable in most acute cases, nor in excitable motor melancholics, in most supersensitive neurasthenics, in most hysterical and masturbational cases, and whenever convulsive symptoms exist. But in early simple melancholia, in most cases where, the acute symptoms having passed over, there is lethargy and a tendency to fall into dementia, and where the nerve tone is low without much nervous excitability, they do much good.

Exercise and Fresh Air versus *Rest.*—In my experience, moderate and suitable exercise in the fresh air is one of the sheet-anchors of treatment, and is worth all the physic if there was no choice between the two. Of course it must not be taken up to exhaustion. It must be prescribed and watched as a powerful medicine is prescribed and watched. We all know that it can soothe and stimulate, can cure insomnia and cause it, can help digestion and stop it, and that it may tend to good bodily nourishment or to thinness according as it is physiologically or injudiciously used. It manifestly tends towards glandular action, towards regularity of action of the bowels, towards normal metabolism of every kind. Wherever there is motor restlessness or nervous fidgetiness, it affords the best outlet for superfluous energising. I have tried massage as a substitute, so as to get its good effects without exhaustion. My opinion of massage in mental diseases is that it suits very few cases indeed, and does positive harm to most melancholics,

but there are marked exceptions to this. Some psychiatrists have lately taken up rest as if it were the opponent and opposite instead of being the complement of exercise in the fresh air, and as usual when a matter looks controversial, have run down exercise and accused it of doing serious harm, or said it was in many or most cases not needed; they quote the starved and exhausted early melancholic when he first comes to an asylum, or the case of "typhoid" mania, or the acute puerperal woman, or the weak and restless senile case, and they say, "We put such cases to bed and give them rest." But who in his senses ever exercised such cases more than in the gentlest way, and that only after some days or weeks of restful treatment? Some physicians are now talking of "brain rest" by lying in bed and being confined to his room, with gentle massage, or even by being confined in a strait jacket, for the acutely maniacal patient who is fairly strong and stout. By all means let this plan be tried, but my whole medical experience has been valueless and misleading if for the majority of such cases regulated exercise in the open air is not a remedy, natural and rational, and such "rest" as confinement and restraint is not an aggravation. "Rest" of this sort for the acutely maniacal was tried in old times by restraint and seclusion in rooms and airing-courts, with the result of a high mortality, a low recovery-rate, and an abundant residuum of chronic mania and dementia, degraded habits, and danger to themselves and others. I know one or two physicians who get most of their cases from large cities adopt this routine method of putting every patient to bed for a few days, with feeding and observation. This may suit some cases well, but I cannot agree that it is a rational mode of treatment as a routine measure.

Occupation and Amusement.—The insane man like the sane must have something to do, and we must so condition his work that it takes up his attention, diverts him from introspective morbidness, and keeps the current of his thoughts and feelings in physiological channels. Simple mechanical

work such as gardening is best; along with that the natural tendencies towards social pleasures and amusements must be strengthened. For mental disease tends to arrest and destroy the social instincts. To take a man "out of himself" when melancholy, to make him laugh when he is sad, to provide him with cheerful company when lonely, seem such obvious measures of treatment that one would have thought them psychiatric truisms as well as being the alphabet of common sense. Asylums for the insane have become pleasant hospitals and homes largely through the slow development of suitable occupations and amusements for the patients. The most experienced and the most thoughtful of their physicians have devised new amusements, and have endeavoured to apply them as they would medicines to each individual case. They one and all have lauded and encouraged such a system of moral and mental therapeutics, and distraction from morbid thinking and feeling. But lately voices have been raised against this assured dogma of mental medicine. As usual there is some truth in the contention. There are certain of the insane for whose morbidly excitable brains certain amusements are unsuitable or harmful, and in a few of the most acute cases they are out of the question. But no physician that I have ever known ever used unsuitable amusements to any extent or persistently for such cases any more than they used strychnine in a convulsive case or the bromides in stupor.

Difficulties.—The general treatment of insanity needs never-ceasing care, endless devising to meet individual symptoms, sleepless vigilance to avert serious catastrophes, and the most watchful observation of symptoms bodily and mental. It implies a medical alertness and resource, a provision for emergencies of all sorts, and a knowledge of human nature that are needed in no other branch of therapeutics. Anything that implies that "medicine out of a bottle" only will cure the disease is utterly to be deprecated. The whole conditioning of a patient's life must be faced. Any mode of treatment of insanity that is easy is sure to be wrong.

Human nature is not simple, and insanity is a disorder of human nature in its deepest recesses. It has resulted from departures from nature's laws for many generations. It means evolutionary unfitness for the life struggle. We have been wearedly struggling to understand what it is, and slowly advancing in the knowledge that makes for cure. Let us not lose ground by retrograde experiments.

On the Use of Hypnotics, Sedatives, and Motor Depressants in the Treatment of Mental Diseases.[1]—Four cases out of five of recent mental disease have either sleeplessness, or active brain excitement, or morbid motor activity, as part of their symptoms at some time. The other symptoms present, mental and bodily, often seem to be of less importance than those to the patient's relatives and to his physician. Their urgency and troublesomeness seem to call for direct and immediate medical treatment in a very large number of such cases. While as physicians we fully recognise that these are symptoms, and not the disease itself, yet they all so manifestly tend toward brain exhaustion, that it is very natural to adopt means for their relief. And the most obvious medical means are the use of hypnotic, sedative, and motor depressant drugs. I do not say that such drugs are as curative as they seem, though I fully admit that their use is sometimes curative. And few practitioners but frequently find their use inevitable. The temptation to use them is sometimes overwhelming. But the dangers of using them to excess are great and numerous. I hope I am not wrong in the opinion I have formed that as they have been used they have often done more harm than good as regards cure, though it may be said that the sum-total of the present relief they have afforded has been so great a boon to the sufferings of humanity, that their disuse would be a cruelty not to be thought of.

To go into their use fully in each form and phase of mental disease, in each several temperament, diathesis, and age, would

[1] Vide *American Journal of the Medical Sciences*, April 1889. A paper by author.

require a treatise, and our knowledge is not yet exact enough to enable anyone to do so. Even fully to state the principles that should guide us in their use, so far as I know them, and the risks to be guarded against, would take up much time. Nowadays most of us want to take our medical reading in a concentrated form. I have had much experience of their use and some proofs of their abuse. I have experimented carefully with many sedative and hypnotic drugs, but I find it very difficult to condense my experience, and lay down such rules or principles of general application that would be of use to others.

When one considers for a moment the conditions of giving hypnotics and sedatives, it is seen how complicated those conditions are. We are giving drugs to act primarily and chiefly on the functions of the cerebral cortex, that representation of all organs, that co-relator of all functions, that differentiator of all sensations, that only true originator of the higher activities, mental and bodily, and that most delicate and complex of organised structures in nature. It is the great inheritor, too, of hereditary qualities, good and bad, and the "seat" of mind. This governing organ, of such infinite delicacy, has gone wrong in some of its highest functions, and we send up to it, through the blood, coarse chemicals, or alter its blood supply, or affect its functions by reflex influences in order to set them right. In order to have most kinds of mental disease at all we commonly need bad conditions of living for many generations.

The cortical protoplasm has become degenerate or disturbed through its bad heredity, and is unresistive to unphysiological conditions affecting the individual, who has probably for years lived under such evil conditions. The sins of ancestry and of self at last produce their natural fruit in an attack of what we call mental disease, but which would be better named cortical disease. We then use powerful poisons in modified doses to arrest or modify cortical function. Who can think that the evil conditions of generations and the unphysiological courses of half a lifetime will be counteracted by a few doses of drugs?

For we must never forget in the use of all hypnotic and sedative drugs whatsoever, that essentially they are cortical poisons and arrestors of function when given in full doses. By experimenting we have found out the doses that first stimulate and then half arrest function. But young medical men have to learn for themselves by experience the practical lesson that all neurotic medicines are in their full action poisons, before they realise the fact. We use their half effects to modify nervous energising in order that modification in one direction may arrest dangerous action in another, may stop dynamic exhaustion, and encourage trophic repair, may so diminish undue reflex excitability in nervous centres that dangerous reaction, mental and bodily, shall not take place. Such good results we try to attain while we know that in most cases favourable conditions of life or the *vis medicatrix* really "cure" the disease. The mere statement of the problem shows its difficulties and its risks.

I would lay it down as a principle that few cases of mental disease should be treated by hypnotics and sedatives alone. They may be necessary in many cases as a part of the treatment, but there are always other indications which must be carried out to secure real and permanent recovery. To feed the patient, to restore his nervous and nutritive energy, to rest his brain in some cases, to restore to normal action every function that is abnormal, to direct his mental working into healthy channels, to exercise his muscles and lower centres so as to get physiological and safe outlets for spare energy, to improve his controlling powers, to restore his emotional faculties by getting him to feel natural pleasure and interest in something, to rouse his power of attention to healthy and safe objects, and by healthy and pleasant surroundings to make his environments healing—these must necessarily be our first considerations.

The chief questions we should always put to ourselves, when using hypnotics and sedatives, are—Are those drugs disordering any other functions, while mitigating the wakefulness and

restlessness? Is the patient's mental state really improved through the sleep and quiet produced? Is the natural tendency to recover in any way interfered with? Does the patient gain or lose weight?—a most important test. If sleeplessness is the most urgent symptom, is the continued use of a hypnotic tending to restore the natural sleep habit or not? How does the patient look as to expression of face and eye after the drug sleep we have been giving him? How does he feel in the morning—refreshed or otherwise? Is the use of our drug forming a bad brain habit that it will be difficult to overcome? Is it causing a loss of the higher inhibitory power, while giving the patient present relief? There are very many cases of mental disease in the incipient stage, where what is pleasant to the patient is not necessarily good for him. There are many others where we require especially to strengthen his own volition to help his cure. An early case of melancholia that takes opium or chloral may get to like these drugs so well that he will not follow out the measures that will lead to his real and complete recovery.

We need, before giving such drugs to any case, first to make up our minds from the symptoms present whether it is a pure hypnotic that is needed, or a general sedative, or a diminisher of reflex irritability, or a motor depressant, or a combination of these. Different cases have such totally different symptoms in mental disease, the same person is often variously affected by the same drug at different times and phases of his malady; and the drug tolerance and idiosyncrasy are so different as between one person and another that we have much need to select our drugs carefully for the symptom and the patient to be treated. I would put paraldehyde and chloral as the types of pure hypnotics; sulphonal as a hypnotic sedative; the bromides and their combinations with cannabis indica and hyoscyamus as the types of the sedatives and diminishers of reflex irritability, cerebral and spinal; and hyoscine, as the type of drug that especially depresses the functions of the cortical motor centres.

The effects we may legitimately aim at and hope for in the treatment of mental diseases by hypnotics and sedatives combined with other treatment are:—1. To cut short a commencing attack of melancholia or mania in some cases. 2. To re-establish the sleep-habit of the brain. 3. To tide over short attacks that have a natural tendency to recover, through making the patient manageable by nurses in an ordinary private house. 4. To enable cases with severe attacks to be kept home long enough to satisfy patient's relatives that the attack is a "confirmed" one. 5. To give needed sleep and rest to relatives and nurses. 6. To combat temporarily dangerous symptoms. 7. To take the edge off the worst symptoms of cases who are being treated during a long attack, so letting other measures have full effect. 8. To subdue severe and exhaustive symptoms, and so save the patient's strength and life. 9. To satisfy and soothe the minds of such patients as will have some such drug. 10. To quiet screaming or noise for the sake of others.

The most common case that has to be treated by the general practitioner of medicine is that of a man threatened with melancholia, who has the preliminary symptoms of sleeplessness, depression of spirits, want of interest in anything, and irritability with fears and, perhaps, suspicions of all sorts —who has, in fact, the general symptoms of brain exhaustion. In addition to the rest, the exercise, the change, the fresh air, the fattening easily digested food, the tonics and nerve stimulants, and the walking we prescribe for such a case, we are justified, and frequently compelled, to try a hypnotic, if fresh air and fatigue, baths hot and cold, modified massage or warm bottles to abdomen do not restore the sleep. I am not in favour of opium for many such cases in however small doses, because my experience is that it diminishes the appetite, and the patient does not gain, but tends to lose in weight, while a habit and a craving are apt to be set up. But competent and experienced physicians in Germany, France, and in this country use opium or morphia in small doses in such cases,

and commend it highly. They say it promotes the nutrition of the brain, soothes mental depression, and causes sleep. I have seen such effects in a few cases. Chloral I once believed in far more strongly than I do now. It is a drug, the prolonged use of which in some cases certainly tends toward thinness, toward a haggard look in the morning, and toward diminished mental inhibition, as shown by a habit and craving for its continued use. Combined with the bromides, in 15 or 20 grain doses, it is a good hypnotic for short periods, especially in alcoholism.

Paraldehyde.—The drug I have used most extensively for the past nine years, and like far better than any other pure hypnotic I have ever tried, is paraldehyde. This is so valuable, so reliable, and so free from risks, near or remote, that I think it cannot be too widely known by the profession. It is mainly a pure hypnotic, though I have lately seen it recommended in small doses as a stimulant, and for the vomiting of pregnancy. It acts so quickly, that often the patient is sound asleep in five minutes after getting the dose. Out of hundreds of cases in which we have used it here it caused sickness in only a few, headache and disagreeable feelings in a few, a general "discomfort" in one, or diarrhœa and sickness in a very few. It does not interfere with the appetite for food next morning, nor ordinarily disturb the stomach or bowels. After a paraldehyde sleep there is no headache, no lassitude, and several sane patients to whom I have given it have said that even the refreshed, comfortable feeling they have after natural sleep is present after it. That seems too good to be true in very many instances. I have no belief in any drug sleep being quite equal to natural sleep, in being "Nature's sweet restorer." I am satisfied of this important fact, however, in regard to paraldehyde, that while the first part of the sleep after a dose is drug sleep, this passes gradually into what is really natural slumber. In fact, it *puts to sleep*, and nature *continues* the slumber. Another fact of perhaps greater importance still is this, the use of paraldehyde

for a time will, in some cases, *restore the sleep-habit* of brain, and its use can then be discontinued readily, and with no felt want and craving by the patients. It is of no use, but the contrary, given through the day as a sedative. It seems to act on the very highest cortical cells, and not on the motor areas, cortical or basal. In cases of mania I often add a drachm of one of the bromides to the dose at bedtime, and in very acute and restless cases a drachm of "bromidia." It sometimes excites when given in too small doses. Its nauseous taste is the worst thing about it. It may be given *per rectum*, and acts well in this way.

The proper dose of paraldehyde varies enormously according to the case. Generally I begin with 40 minims or a drachm, and go up to 2 drachms in ordinary cases. In very many cases of confirmed insomnia, in melancholia, and in acute mania, I have given 3 and even 4 drachms, and in one case 6 drachms. I had a general paralytic patient who took 4 drachms every night for a fortnight. A lesser dose did not cause sleep. Here we commonly give it mixed with tincture of quillaya and a few drops of chloric ether in cinnamon water or in capsules. Its bad taste cannot be quite got over, however, and patients always smell of it for twenty-four hours after the last dose.

I do not know how much would be a poisonous dose, but a nurse by mistake once gave a patient of mine, a small-sized woman in weak health, an ounce, with the result that she slept a stertorous sleep for twelve hours, the heart's action not being interfered with, nor the reflexes, but rousing and coffee on several occasions during the night only very partially brought her to consciousness while under its influence. She seemed none the worse afterwards.

I have never seen paraldehyde affect the heart's action in any way except to strengthen it shortly after being given. I look on its action as being in some respects half-way between that of ether and alcohol, but with a far more decided hypnotic effect than either.

I have had many cases in which its nightly use for periods of from one week to six has been followed at once, on its being stopped, by a restoration of the natural sleep-habit. The first case of that kind I had was a recent but very marked one of suicidal melancholia with restlessness in a woman at the climacteric, who, after its use for a month, at once began to sleep soundly for six hours every night, and soon made a complete recovery. The next, and the most remarkable I have yet met with, was one of suicidal melancholia with great impulsiveness, who had not slept naturally for more than an hour or two at a time for two years. As she required a special night attendant, I knew the facts accurately. She was put on paraldehyde in drachm doses every night. This dose needed to be doubled to get seven hours' sleep. This was continued every night for six weeks. She gained in weight, and took her food well during that time. It was then stopped, and the patient at once began to sleep naturally, has never needed a draught since for a period now of eighteen months, and very soon we were able to discontinue the special night attendant. Such a case makes a very deep impression on anyone who has the heavy responsibility of treating it. The result is in accordance with the physiology of the brain so far that we know that habits and "periodicities" are normal characteristics of its functions that can often be broken or restored by outward conditions.

There are some cases of very acute mania and melancholia, and especially of the acute excitement of general paralysis, where half-ounce doses will not procure sleep, and I commonly do not push it beyond this.

Sulphonal.[1]—Next to paraldehyde, and many physicians would place it before that drug, comes sulphonal as a hypnotic. In addition to its sleep-producing effect, sulphonal acts very markedly as a sedative and motor-depressant, and can be

[1] I have not had the same experience of trional as of sulphonal, but their effects are very analogous, and in one or two cases trional seems to act as the better hypnotic. Its dose is about 15 grains.

used during the day for those effects. Its action is entirely different in many ways from paraldehyde. It takes from an hour to two hours instead of five minutes to act. Its effects last often for two days and nights instead of one night. It often causes giddiness and unpleasant sensations in the morning. It should be used in doses of from 10 to 40 grains, with a very rare use of 60 grains. It should be given at least one hour before bedtime if used as a hypnotic. It is best given in hot milk, not being soluble to any extent.

The kind of cases in which it acts best are those with some motor excitement, restlessness, noise, and general troublesomeness of management. In the stage where the patient feels agitated and afraid of an acute attack coming on I have over and over again seen its use produce calm and comfort, apparently arresting the attack at an early stage. It acts admirably in small doses, say 15 grains twice a day, in senile restlessness and mild excitement. I have thus kept many such cases at home, soothing gently their downward path, who would have had to be sent to asylums. It acts well in simple mania with restlessness, but fails except with dangerous doses in very acute or delirious mania. In melancholia with agitation it subdues the motor symptoms, but leaves the patient usually more depressed in mind. It stupefies and bewilders such cases too much. In recurrent cases of mania and *folie circulaire*, and in chronic mania, its effects are admirable and often, as I have already pointed out, curative, or nearly so. It may be safely used in moderate doses in cases with organic brain disease. In the first stage of general paralysis, with intense maniacal excitement and impulsiveness, I have used it in large and repeated doses with the effects of immediate quietude and manageability, and after a few weeks of this, the patients were found to have passed out of the excited stage into that of the quiet of the second stage. Alcoholic insanity is often controlled and cured by the drug. I have referred (p. 247) to its remarkable effect in arresting the tendency to mania in *folie circulaire*.

The evil effects and dangers of suphonal are its tendency to accumulate and cause a drowsy stuporose hebetude, with a collapsed appearance and weak pulse, resembling bromism, and in a very few cases to cause the very serious and dangerous condition of hæmatoporphyrinuria. The urine[1] becomes bright red, and the patient is found to be low, exhausted, sometimes paralysed, and often vomits. There is the utmost risk to life. We as yet cannot tell why this condition should occur. It should always be kept in mind as a possible contingency. In moderate doses sulphonal does not depress the vasomotor tone or the heart's force to any extent. Its use should always be intermitted for a day or two once a week. Frequently one dose every other night will produce sleep for two nights running. In mania one dose twice a week I have known to keep the patient manageable till the attack ended in its ordinary course. It does not excite a craving for its continuance, and it does not prolong the brain disturbance.[2]

The use of other mental and motor sedatives and depressants during the day in those forms of mental disease characterised by motor excitement is a still more difficult problem than the use of hypnotics at night. Such a use is far more liable to abuse, and is essentially more unphysiological. The temptation towards such a use, for present ends, is so great without reference to the "natural course" of the case toward recovery that we need to be very careful how we employ them. The former heroic doses of antimony, digitalis, and of opium, the prodigious douches of old, we have now almost absolutely discarded. We see plainly that the motor quiet thus obtained was not half-way to cure, but perhaps part way to death. The questions we ask now are, Can we conserve strength and prevent exhaustion and death through over-motor energy by the use of sedatives? Can we take off the keen edge of the motor

[1] Dr Oswald, *Glasgow Medical Journal*, Dec. 1894.

[2] See two papers, one by Dr J. C. Mackenzie in the *Journal of Mental Science* for Jan. 1891, and the other by Dr Carlyle Johnstone in the same Journal for Jan. 1892.

excitement, so that some patients can be made more manageable, and be treated at home. Can we so diminish motor excitement that the patients can be safely taken out to walk and work, and so get rid of part of their spare energy in normal ways? Can we so diminish impulsiveness that danger to the patient and others may be lessened without interfering with recovery, or with health in incurable cases? Can we, during special paroxysms and bodily diseases, temporarily diminish motor action with safety? If excessive motor energy is generated in the brain cortex, it is surely a reasonable hypothesis, that it should generally get its natural outlet in muscular action. But there are limits to all excesses of action. If antipyrin, on the whole, does harm in an ordinary case of pneumonia with a temperature of 103° and puts off recovery, it does not follow that it or a cold bath does not save a patient's life when the temperature is running above 106°. Patients sometimes die of the exhaustion of over-motor excitement. How do we know in any such case that if over-exertion had been controlled by drugs or mechanical restraint for a few days, the crisis might not have passed in the ordinary "course of the case"?

There is, in my opinion, legitimate scope for the use of sedatives and motor depressants in mental diseases both from physiological and clinical data. Which are the best and safest measures and drugs to use? A categorical and unconditioned answer cannot be given to this question. Of one thing I am quite sure from my experience: Do not use during the day a pure hypnotic like chloral or paraldehyde, either alone or in combination, as a sedative or motor depressant. That is the weak point of "bromidia."

Another principle which I laid down twenty years ago I still adhere to—Use the bromides frequently in combination with nearly all sedatives and motor depressants. They make a lesser dose of the latter more equably and more safely effectual as compared with a large dose given alone. They prolong the sedative effect. They diminish motor reflex

excitability in the whole of the motor centres, and they may be said to strengthen the whole function of inhibition thereby. They are very safe and do not commonly tend to affect nutrition, but often the contrary.

The Bromides and Cannabis Indica.—The combination of the bromides with cannabis indica, which I recommended in 1868,[1] and have used continuously since, I still think one of the best sedatives, because it is mild in general effect, and does not affect the nutrition. Patients often gain in weight during its use, they can work and walk while under its influence, and impulsiveness of all kinds is diminished by it. My original experiments, which were very carefully made, have been confirmed in the main by a very large subsequent clinical experience. Not that all my hopes and expectations of twenty years ago in regard to the curative effects of this or any other sedative on cortical brain excitement have been realised. Few men have had to treat diseases for twenty years who are not at the end of the time more sceptical about drug treatment, and more inclined to trust to the *vis medicatrix* under favourable conditions than they were at the beginning, on the whole. There are marked exceptions, no doubt, and the use of this combination as a sedative, motor depressant, and diminisher of reflex irritability in mildly maniacal cases, in certain cases of acute mania with hysterical symptoms and noise in women, in epileptic mania not of the unconscious delirious type, in chronic mania with paroxysms of exacerbation, in all cases of brain excitement with more or less regular periodicity of symptoms, and in many cases of suicidal melancholia characterised by motor excitement and homicidal violence—in all these I have used this combination, and found it an admirable sedative without disturbance of digestive functions and without loss of nutrition in a very large number of cases. I always weigh my patients while

[1] "The Action of Narcotic Medicines in Insanity," being the Fothergillian Prize Essay for 1872, by the author, *Brit. and Foreign Med.-Chir. Review* for 1870 and 1871.

they are taking any sedative or hypnotic drug, and if there is a continuous loss of body-weight I am inclined to stop the medicine and try how the case will run on without it. I commonly now begin with 10 minims of the tincture of cannabis and 30 grains of one of the bromides for a dose, rising to 45 minims of the former to a drachm of the latter. I commonly add some aromatic spirit of ammonia to the mixture as a cardiac stimulant, and also to keep the resin more in solution. The most alarming symptoms I have ever seen after its use in large doses resulted from the temporary failure of the heart's action in one anæmic case of chronic mania after a drachm dose of the tincture of cannabis with a drachm of bromide, and in another instance from a semi-comatose condition in a case of *folie circulaire*, during the excitement which I was attempting to "keep in check" by a continuous use of the mixture. In the former kind of case I now add some digitalis. In other cases, and for special indications, I am in the habit of adding the ammoniated tincture of valerian to the combination. This does specially well where there are hysterical symptoms. I sometimes add a little lupuline, hyoscyamus, or belladonna.

The cannabis indica often increases the appetite and acts on the kidneys. The taste of this mixture is very bad, however, and we often have much difficulty with maniacal and suspicious cases on this account. In some patients a few doses will be sufficient for the purpose we aim at, in other cases the drugs have to be given for weeks and even months. I have certainly kept many patients out of asylums by its use. When the excitement is very intense, and tending toward "delirious mania," with dry tongue, sordes, and repugnance to food, then I cannot recommend this combination, nor indeed any other sedative, hypnotic, or narcotic drug. Nursing, stimulants, suitable feeding, tonics, and fresh air are in these circumstances alone to be relied on, if we wish our patients to have the best possible chance of recovery. In general paralysis and the excitement of organic brain disease I have often seen

the combination give great relief and quietude without any ill effect.

The mental results were the following: There was less sudden impulsive action, the constant talking got less, the tendency to shouting was lessened or stopped, there was less resistiveness to control, there was a drowsy quietude induced. The emotional state was one of greater happiness, and intellectually there was less suspicion. In some cases hallucinations of hearing abated. In many cases walking and working could be engaged in. Inhibition was improved.

The following symptoms should in my judgment make us hesitate to use the combination or stop its use, viz., a very weak, thready pulse, a very foul, creamy tongue increasing under the use of the drugs, a dry tongue and mouth, an increase of motor paralysis, a difficulty in equilibration and walking, a tendency to stupor, very cold extremities and pinched face, as if the general nervous and vital energy was very low and diminishing.

Hyoscine.—If a pure motor depressant is indicated, there is no doubt that hyoscine is the best drug to get the effect of simple motor quietude. I have many cases of mania where the chief symptoms, and by far the most troublesome, are excessive restlessness, shouting, tearing, violence, and motor impulsiveness of all kinds. All the morbid energising of the cortex seems in such cases to be concentrated in the motor centres. Such patients are always troublesome, sometimes dangerous to others, and many of them tend to exhaust their strength to a dangerous extent. Now if any such case is in strong and vigorous general bodily health, and has a sound heart, hyoscine may be tried hypodermically in small doses of $\frac{1}{200}$ gr. carefully watched, and going up to $\frac{1}{80}$ gr. It is, so far as I have yet used it, a safe and a moderate depressant of voluntary motion, without narcosis or much mental confusion or drowsiness. So far as I have yet observed its effects, it is the best drug for this special effect. It has not in my cases affected the appetite, nor depressed the heart's action unduly,

except in one case when $\frac{1}{75}$ gr. produced alarming stupor. I must say I have been afraid to push it in very restless and violent cases. Several strong persons of this kind labouring under acute mania resisted $\frac{1}{80}$ gr., and I was afraid to push it further after my experience of hyoscyamine—an altogether dangerous drug. I should give it very guardedly indeed in general paralysis or in any case in which I suspected organic brain disease. The great facility of its hypodermic use makes it suitable for emergencies, and where the patient will not take a drug by the mouth.

There are other drugs of this nature at our disposal. Chloral-amide, urethan, croton-chloral, monobromide of camphor and lupuline are all mild and useful hypnotics and sedatives.

I shall conclude with a few principles of general application:

1. Make up your mind clearly from the symptoms present whether your patient needs a pure hypnotic, a general nervous sedative, or a simple motor depressant before you use any of these drugs.

2. Use all such drugs experimentally in each case at first, and watch their effects not only on the higher nervous functions, but on all the organs and their functions; and on the general organism.

3. Even where there is sleep and quiet produced for the time with no apparently bad results, look to the general feeling of *bien-être*, the recuperative energy, the expression of face and eyes after their use, and see if there is any undue reaction as if some energy that must have an "outlet" were merely being "suppressed" for the time being.

4. Stop using such drugs as soon as possible, trying experimentally how the patient gets on without them.

5. Keep asking in every case—"Are we sacrificing in any degree the highest function of mental inhibition by their use?"

6. Never omit general measures for the restoration of the health, nutrition, and higher nervous functions while you use such remedies. Keep weighing your patients regularly.

7. Paraldehyde is the purest and least harmful hypnotic

yet introduced when the insomnia is marked and intractable. Urethan and chloralamide cannot compare with it. Opium and chloral have special dangers and disadvantages.

8. Sulphonal and trional are safe and excellent hypnotics and sedatives as well as motor depressants. They seem to have a larger field of application than almost any of this class of drugs in mental disease.

9. Use the bromides as accentuators and prolongers of the effects of other drugs, and in order to be able to employ smaller doses than otherwise.

10. A combination of cannabis indica and the bromides is one of the most useful and least harmful of general sedatives.

11. Hyoscine is the best pure motor depressant, and its easy hypodermic use makes it very convenient where the patient refuses to take medicines by the mouth; but it needs care.

12. We should never deeply narcotize an insane patient or one threatened with mental disease.

13. It is often as dangerous to use mere anodynes by the mouth or subcutaneously to relieve mental pain, as to subdue bodily pain by these means only, perhaps more so.

14. It is generally far better therapeutics to enable your patient to bear his mental pain and the effects of his insomnia by improving his general nervous tone and the nutrition of his brain and body, than merely to produce quiet and sleep by drugs.

15. It is commonly a safer thing for the patients, and tends more toward natural recovery from his disease, to provide a physiological outlet for morbid motor energy, than merely to depress it directly by drugs.

16. It is almost always preferable to treat cortical exhaustion, irritability, and undue reflex excitability by alternate rest and exercise, and by improving the fattening and nutrition of the body, than by continuous sedatives, the great exceptions being the treatment of epilepsy and convulsive affections by the bromides.

17. The use of a course of thyroid extract, given in 60

grain doses a day, to produce a short five or six days' fever, as recommended by Dr Lewis Bruce (see pp. 192, 294), is a most powerful therapeutic means in many cases. No case should be allowed to become incurable without a trial of this method.

INDEX.

Acute mania, 160.
Acute dementia, 306, 321.
Adolescence, psychology of, 590 ; insanity of, 596 ; mortality in, 609 ; recovery, signs of, in, 609 ; symptoms of, 606 ; treatment, 601 ; psychoses of, 609.
Affections cooled by insanity, 167.
Age at which insanity occurs, 211, and Plate V.
Ague, insanity from, 653.
Alcohol a cause of insanity, 481.
Alcoholic insanity, 480 ; degeneration, 490.
Alcoholism, acute, 482 ; chronic, 487.
Alimentation psychologically considered, 3.
Alternating insanity, 219.
Alternation in insanity, 240.
Amenorrhœal insanity, 522.
Amentia, 10, 285.
Amusement, 700.
Anæmia in insanity of lactation, 563.
Anæmic insanity, 650 ; brain, 506.
Animal food : its effects on neurotic children, 216, 602.
Animal impulse, 350.
Aphasia and insanity, 425.
Arnold, post-febrile insanity, 651.
Arteries, lesions of, in brain syphilis, 469, and Plate VII.
Asthma, insanity of, 661.
Atkins, Dr, 667.
Automatic Misery, 89.

Baillarger first described circular insanity, 221.
Ball, Prof. B., 198.
Baths in melancholia, 132.
Baths, hot, in mania, 176, 194 ; Turkish, in melancholia, 132.
Begbie, Dr Warburton, 478, 660.
Bell, Dr Luther, 172, 198.
Belladonna as a sleep producer, 218.
Benedikt on the brains of criminals, 333.
Bird, G., on oxaluria, 660.
Blandford, Dr G. Fielding, 197, 401.
Blistering in mania, 192.
Boils in mania, 192.
Brain, anæmic, 505, 650.
Brain, functions of, as related to mental diseases, 13–20.
Broadhurst, 464.
Bromides in mania, 179 ; in circular insanity, 246 ; in epilepsy, 453, 457 ; as hypnotics, 218 ; as sedatives, 713.
Bright's disease, insanity in, 658.
Brown, J. J., 87, 112 ; a new lesion in acute mania, 196, and Plate II. figs. 2, 4 ; on lesions in senile

dementia, 645; on syphilitic arteries, 471.
Brown, Dr R., 205.
Bruce, Dr Lewis, 192, 294, 455.
Bucknill and Tuke on post-febrile insanity, 653.
Bucknill, Dr J. C., 197.
Burton, 128.
Buzzard, Dr T., 464.

Cadell, Dr, his case of syphilitic insanity, 466.
Campbell, Dr J. A., cases of visceral melancholia, 60.
Camphor as a sleep producer, 179, 218.
Cat, maternal instinct in, 338.
Cannabis Indica in melancholia, 90, 133; in mania, 179; in alternating insanity, 246; as sedative, 713.
Certificates of lunacy, 675; for *Curator Bonis*, 679.
Certificates for treatment in private houses, 673.
Certificates of sanity, 677.
Chancery, affidavits for, 678.
Children, insanity in sensitive, 31, 135, 139, 584.
Chloral as a sleep producer, 218, 707; use and dangers of, in mania, 177; insanity from use of, 491.
Chorea, its connection with rheumatism, 494; delirium of, 502.
Choreic insanity in early youth, 502; its epidemic forms, 503; prognosis, 502; treatment, 503.
Christison, Sir R., 268.
Chromatolysis, 20, and Plates XVI., XVII., and XVIII.
Circular insanity, 219: causes of, 242; duration of, 226–236; frequency, 243; its nature, 221; pathology, 249; symptoms, 235; treatment, 245; termination, 244.
Clark, Campbell, his case of hydrocephalic idiocy, 304, 318, 371, 562; diabetic insanity, 658.
Classification of insanity, 10–13.
Climacteric insanity, 611; suicidal longings in, 614; pathological appearance in, 619; prognosis in, 620; statistics, 621; symptoms, 613.
Climacteric, psychology of, 612.
Climacteric in man, 617; in woman, 612.
Communicated insanity, 375.
Competitive examinations, mischief from, 135.
Congestion of brain in acute mania, 195, and Plate IV.
Conium in acute mania, 179.
Connubial affection altered in climacteric insanity, 614.
Conscience a brain quality, 372.
Consciousness lost in mania, 163; in epilepsy, 449; in stupor, 310.
Convolutions, their structure and function, 14; supply of blood to, 5, 18.
Convulsive melancholia, 96.
Craving for stimulants in melancholia, 120.
Cresswell, Sir Cresswell, 675.
Cretinism, 305.
Croom, Dr Halliday, on perversions of appetites during menstruation, 522, 523.
Custards, 698.
Curator Bonis, appointment of, 679.
Cyanosis, insanity of, 661.

De lunatico inquirendo, 678.
Decoration, insane, 255.
Deaf-mutism a hereditary neurosis, 305.
Delirium in young children, 666.
Delirium tremens, 22, 482.

Delusions of melancholia, list of, 80 ; in idiots, 253.
Delusions, sane and insane, 251 ; insane defined, 253 ; their legal importance, 274 ; should be tested, 23.
Delusional mania, 198.
Delusional melancholia, 57.
Dementia, 280 ; its varieties, 285 ; alcoholic, 490 ; organic, 285, 420 ; primary, 297 ; secondary, 285 ; senile, 622 ; prognosis in, 290.
Demonomania, 73.
Denman, Lord, 680.
Deprivation, idiocy by, 304 ; insanity by, 662.
Desquamation, 119.
Destructive impulse, 359.
Diabetic insanity, 656.
Diabolic possession, superstition of, 72.
Diathesis, the insane, 375 ; doctrines of, 2.
Diet. *See* Animal Food ; in melancholia, 127 ; in circular insanity, 245.
Dietetic management of the *nisus generativus*, 541.
Dipsomania, 361.
Dissolution, 17.
Dowse on prevalence of syphilis, 464, 465.
Drummond, Dr, 405.
Duncan, Dr Matthews, on fecundity, 590.
Duret, 643.

Education of girls, 581 ; of neurotic children, 688.
Eggs in the treatment of acute mania, 182.
Electricity in stupor, 293, 317 ; in detecting feigned insanity, 686 ; delusions of being tortured by, 71.
Eliot, George, 593.
Elkins, Dr F. A., 354, 655, 698.
Enfeeblement, morbid, 280.
Epileptic insanity, 435 ; counter irritations in, 455 ; hallucinations in, 447, 448 ; pathology, 445, 450 ; prevalence of, 456 ; religious emotionalism in, 440, 441 ; suicidal impulses in, 447 ; treatment of, 453.
Epileptic, suicide of an, 449.
Epileptics, criminal, 439.
Epileptiform melancholia, 96 ; impulse, 350 ; convulsions in general paralysis, 394.
Epilepsy, pathology of, 450 ; vacuolation of nucleus in, Plate IX., 451 ; compatible with sanity, 435 ; masked, 206, 438.
Epithelial granulations in ventricles, 411, and Plate II. fig. 3.
Ergot in melancholic stupor, 317.
Erotomania, 339.
Evolution, 17.
Esquirol's classification, 7, 161.
Exaltation, physiological, 138.
Examining patients, rules for, 20.
Excited melancholia, 83.
Expression of face in insanity, 78, 168.

Falret on circular insanity, 221.
Fattening an adolescent, 602.
Feeding, forcible, 108, 698.
Fears, morbid, 50, 266.
Ferrier on brain localisation, 71, 165, 380.
Flesh meat. *See* Animal Food.
Folie à deux, 375.
Folie à double forme, 219.
Folie circulaire, 219 ; commencement of, 243 ; termination of, 243 ; treatment of, 245 ; pathology of, 249.
Folie raisonnante, 159, 222.

Food, 698.
Friends, Society of, insanity in, 600.

Garrod, Dr A. B., 505, 661.
General paralysis, definition of, 380; developmental, 403; etiology and distribution, 405, 419; pathology, 406, and Plates I., II., VIII., XIII., XIV., and XV.; stages of, 381; varieties, pathological, 390; varieties, symptomatological, 392; prevalence and ages, 419, and Plate V.; its nature, 416.
Goltz, Prof., 14.
Gouty insanity, 504.
Gowers, Dr W. R., 453.
Greenlees, Dr T. D., 416.
Gudden, Prof. V., 411.
Gull, Sir Wm., 663.

Hæmatoma auris, 96, 388, 597.
Hæmatoporphyrinuria, 178.
Hallucination, a, defined, 165.
Hemiplegia, 422; alternating, 86.
Hereditary tendency, 3; of melancholic diathesis, 124.
Heubner, 643.
Hitzig, 165, 380.
Home treatment expensive, 24; its advantages, 25.
Homicidal mania, 207; melancholia, 103; impulse, 351.
Howden, Dr J. C., 440.
Howe, Dr, 304.
Hutchinson, Jonathan, 464.
Hygiene in neurotic children, 688.
Hyoscyamus as a hypnotic, 217.
Hyoscine, 133, 179, 715.
Hyperkinesia, 329.
Hypnotics in insanity, 177, 702.
Hypnotism, 130.
Hypochondria, 31.
Hypochondriacal melancholia, 48.
Hysterical insanity, 528; statistics of, 531.
Hystero-epilepsy, 529.

Idiocy, definition of, 297; by deprivation, 304; eclampsic, 301; epileptic, 302; genetous, 300; hydrocephalic, 304; inflammatory, 303; microcephalic, 303; paralytic, 302; traumatic, 303; 461.
Illegitimacy a cause of puerperal insanity, 548.
Illusion, an, defined, 165.
Imbecility, 297; congenital, 298.
Imperative Ideas, 375.
Impulse, animal, 350; destructive, 359; homicidal, 351; insane, 329; suicidal, 356; uncontrollable, 329.
Impulses, morbid, 341.
Impulsive insanity, 329; a remarkable case of, 343.
Incoherence in mania, 164, 166, and Plate III.
Indecision, morbid, 39.
Influenza, mental relationships of, 655.
Inhibitory power defective, 331.
Inhibitory insanity, 329.
Inglis, T., on hystero-epilepsy with insanity, 529.
Insane impulse, 329.
Insanity of adolescence, 596; alcoholic, 480; amenorrhœal, 522; anæmic, 650; of asthma, 661; of Bright's disease, 658; of cardiac disease, 661; choreic, 494; circular, 219; climacteric, 611; of cyanosis, 661; by deprivation, 662; diabetic, 656; epileptic, 435; of exophthalmic goitre, 664; feigned, 686; gouty, 504; hysterical, 528; inhibitory, 329; of lactation, 562; of lead poison-

ing, 667; masturbation, 532; metastatic, 661; moral, 371; of myxœdema, 662; ovarian, 527; of oxaluria, 659; paralytic, 420; phthisical, 505; phosphaturia, 659; post-connubial, 667; post-febrile, 651; of pregnancy, 569; of puberty, 578; puerperal, 545; rheumatic, 494; senile, 622; syphilitic, 464; traumatic, 459.
Insomnia, 702, 706.
Ireland, W. W., 277; on idiocy, 297, 300, 303.
Irritability defined, 336.

Jackson, J. Hughlings, 17, 33, 206, 380; on syphilitic insanity, 464; epileptic insanity, 436.
Jealousy, insane, 268.
Jones, Dr Bence, 661.
Johnstone, Dr Carlyle, 664, 711.

Kahlbaum, 239.
Kalmuck, 301.
Katatonia, 239.
Keith, Dr T., 602.
Kleptomania, 11, 339, 368.
Krafft-Ebing, Prof., 173, 198.

Lactation, insanity of, 562; prognosis, 567; statistics of, 565; symptoms, 562; treatment, 565.
Ladd, Prof., 17.
Lancereaux, 465.
Lawlessness, organic, 333.
Laycock, T., on organic memory, 164; on the reflex function of the brain, 337; on general paralysis, 392.
Laziness often a disease, 45.
Lead poisoning, insanity of, 667.
Lehmann, 661.
Legal views about insanity, 680.
Lewis, W. Bevan, 33, 123, 197, 401, 404, 412, 413, 414, 415, 451, 455, 492, 606, 638, 642, 645.
Locke, John, 255.
Lycanthropia, 339.

Maclaren, J., case of impulsive insanity, 343.
Mackenzie, Dr J. C., 711.
Macleod, Dr M., 562.
Macphail, Dr, 286, 454.
Macpherson, Dr J., 274, 419.
Major, Dr H., on senile brains, 645.
Mania, 8, 137; à potu, 489; acute, 160; in children, 139; acute delirious, 163; chronic, 198; delusional, 198; emotional conditions, 212; ephemeral (transitoria), 205; homicidal, 207; simple, 143; diagnosis, 272; definition of, 141; diet in, 174; first stage of, 161; second stage of, 163; pathology of chronic, 199; and Plate VIII. fig. 2; prevalence, 211, and Plate V.; delusions in, 211; prognosis of, 212; terminations of, 214; prophylaxis in, 215; treatment of acute, 174, 180; caused by a new lesion, 196; and Plate II. fig. 2; periodic, 219; recurrent, 219.
Marriage in circular insanity, 245; in masturbational insanity, 542; with neurotic persons, 687.
Mansfield, Lord, 680.
Massage, 44.
Masturbation, insanity of, 532; bodily signs in, 535; bromides in, 540; self-learned, 539; treatment of, 540; statistics of, 542.
Maudsley, Dr H., 278, 375, 502, 509, 653.
Mechanical restraint in mania, 171.
Medico-legal duties of medical men in mental diseases, 669.

Megalomania, 119, 254.
Melancholia, its definition and nature, 31 ; in children, 666 ; convulsive, 96 ; delusional, 57 ; epileptiform, 96 ; excited, 83 ; homicidal, 103 ; hypochondriacal, 48 ; organic, 99 ; resistive, 91 ; simple, 34 ; suicidal, 103 ; causation of, 123 ; bodily symptoms of, 121 ; prognosis of, 48, 124 ; prophylaxis, 134 ; delusions in, 80 ; religious, 73 ; termination of, 125 ; inception of, 119 ; prevalence and ages, 121, and Plate V. ; lesions in brain in, 62, 70, 102, and Plate II. fig. 1 ; hereditary predisposition in, 123 ; treatment of, 126, 293.
Melancholic diathesis, 30 ; persons, 29.
Melancholy *v.* Melancholia, 31.
Melancholy hereditary, 30.
Memory, morbid, 165 ; in acute mania, 163.
Mendel, Prof., 411.
Menstruation, 75 ; insanity from suspended, 526 ; in acute mania, 190 ; psychology of, 522.
Mental conditions liable to be mistaken for insanity, 22.
Merson, Dr, 622.
Metastatic insanity, 661.
Meynert, 83, 121, 411.
Mickle, Dr J., 132, 411.
Middlemass, Dr J., 389, 399, 407, 412, 452.
Mierzejewski, 414.
Milk in melancholia, 128 ; in acute mania, 174 ; in adolescent insanity, 602.
Moncreiff, Lord, 680.
Monomania (mono-psychosis), 8, 11, 251 ; of grandeur, 254 ; of suspicion, 265 ; of unseen agency, 261 ; diagnosis of, 272 ; origin of, 273 ; prognosis, 275 ; prophylaxis, 276 ; treatment, 275.
Moral insanity, 371 ; Prichard's, 145, 222.
Moreau de Tours on human degeneration, 481.
Morel, 12, 206, 341, 375, 481, 508.
Morselli on suicide, 104, 107.
Motor depressants, 702.
Mouth-openers, 109.
Myxœdema, 662.

Narcotics, in melancholia, 132 ; in mania, 177.
Necrophilism, 339.
Neuralgia analogous to melancholia, 8.
Neurasthenia, 44.
Neurosis, insane, 11.
Newington, Hayes, on alternating hemiplegia, 87 ; anergic stupor, 310 ; mania à potu, 490 ; syphilomatous insanity, 469.
Nitrite of amyl in mania, 179.
Nothnagel, Prof., 14.
Nymphomania, 339.

Obstinacy, morbid, in melancholia, 91.
Old maid's insanity, 527.
Opium useless in melancholia, 132 ; and in mania, 177 ; useful against sleeplessness, 218, 706.
Organic dementia, 420.
Organic melancholia, 99.
Oswald, Dr, 711.
Ovarian insanity, 527.
Oxaluria, insanity of, 659.

Paraldehyde, 133, 707.
Paralysis. *See* General Paralysis.
Paralysis of energy, 42 ; of feeling, 44.
Paralytic insanity, 420 ; analogies, 423 ; causes, 422 ; congestive and

epileptiform attacks in, 424; pathology of, 433; statistics, 432; symptoms, 424.
Paranoia, 159, 277, 378.
Pathology of visceral melancholia, 60, 71, and Plate II. fig. 1; of acute mania, 195, and Plates XVI. figs. 3 and 4, XVII. figs. 1 and 2, XVIII. fig. 2, XIX. figs. 1 and 2; of excited melancholia, Plate XVII. fig. 3; *Folie circulaire*, 249, and Plate VI.; general paralysis, 406, and Plates I. fig. 3; VIII., XIII., XIV., XV., and XVII. fig. 4; of syphilitic insanity, 470, and Plate VII.; of cells, Plates I. fig. 1; VIII., IX., XIII., and XV. figs. 6 to 10; of vessels, Plates II. fig. 4; VIII. fig. 1; IX., XIV., and XV. figs. 1 to 5; of neuroglia, Plates VIII. fig. 1, and XIV. fig. 2; of pia mater, Plate XIV. fig. 1; of epithelium, Plate II. fig. 3; of skull-cap, Plate VI.
Periodicity in mental diseases, 221.
Philipps, Dr Rees, 177.
Phosphates in melancholia, 127.
Phosphaturia, insanity of, 659.
Phosphorus in mental depression, 127.
Phthisica spes, 508.
Phthisical insanity, 505; pathology of, 514, 516; prognosis, 519; statistics, 519; symptoms, 510.
Phthisis common among the insane, 507; mental condition, 518.
Pia mater adherent in general paralysis, 409, and Plate I.
Pinel, 7.
Planomania, 339.
Podagrous insanity. *See* Gouty insanity.
Post-connubial insanity, 667.
Post-febrile insanity, 651.
Pregnancy, insanity of, 569; character of, 569–572; prognosis, 573; suicidal tendency in, 573; statistics of, 573.
Pregnancy, its psychology, 569; suicidal tendency in, 573.
Prichard's moral insanity, 145, 222.
Primäre Verrücktheit, 159, 378.
Prout, Dr, 660. (*See* Oxaluria.)
Psychalgia, 8, 10.
Psychlampsia, 10, 137.
Psychocoma, 9, 11, 306.
Psychokinesia, 10, 11, 329; general, 342.
Psychology of menstruation, 522; of adolescence, 590; of the climacteric, 612; of old age, 623.
Psychoneurosis, 10.
Psychoparesis, 9, 11, 280.
Psychorhythm, 8, 11, 219.
Puberty, the period of, 578; insanity of, 578, 587.
Puerperal insanity defined, 545; frequency, 555; heredity in, 556; pathology of, 554; prognosis in, 559, 560; statistics, 555; symptoms, 546.
Pulse in melancholia, 122.
Pyromania, 339.

Quinine in melancholia, 127, 293, 555.

Rayner on the insanity of lead poisoning, 667.
Reade, 464.
Reasoning insanity, 222.
Relapses in insanity, 219.
Religious melancholia, 73.
Reproduction psychologically considered, 4, 581.
Resistive melancholia, 91.
Responsibility, legal, 335.
Rest, 699.
Reversion, 17.

Restraint in mania, 171.
Rheumatic insanity, 494.
Robertson, A., on the insanity of lead poisoning, 667.
Robertson, Dr G. M., 130, 141, 212.
Robertson, Dr W. F., 389, 407, 452.
Romanes, Prof. G. J., 17.
Ronaldson, Dr Bruce, 539.

Satyriasis, 339.
Savage, Dr G. H., 197, 198, 290, 406, 667.
Schroeder, Van der Kolk, 12, 451, 507.
Sedatives, 702.
Self-control, sane lack of, 331.
Senile insanity, 622; statistics of, 625; hallucinations of hearing in, 638; motor restlessness, 627; pathology of, 641; prognosis in, 640: treatment, 647.
Senility, psychology of, 623.
Sensibility diminished in mania, 170.
Septic inflammations in mania, 192,
Septicæmia, and puerperal insanity, 555.
Shaw, Dr Clay, 409, 419.
Shower baths, 293.
Skae, C. H., case of trephining, 275, 461.
Skae, Dr, his classification, 12, 435, 527, 531, 651.
Smith, Willie, the homicide, 208.
Somnambulism, 667.
Spencer, Herbert, 17, 33.
Spider-cell, 413.
Stephen, Mr Justice, 680.
Stewart, H. G., on monomania of unseen agency, 262; on delusional syphilitic insanity, 468.
Stewart, Sir T. G., on insanity from Bright's disease, 658.
Stimulants in melancholia, 128.
Strychnine in mania, 180; in melancholia, 127; in threatened dementia, 293, 699.
Study of mental diseases, 13–25.
Stupor defined, 306; varieties of, 310; anergic, 321; epileptic, 326; melancholic, 311; paralytic, 326; suggestion, 66, 130; sudden change of mind, 241; secondary, 325; causation of, 326; prognosis in, 327; treatment of, 328; pathology of, 327.
Suicidal melancholia, 103; impulse, 351; frequency of, 113.
Suicide, case of, 307; a determined, 110; in an epileptic, 449; letter of a, 109; modes of committing, 107; watchfulness against, 112.
Sully, J., 165.
Sulphonal, 133, 178, 247, 709.
Suspicion, monomania of, 265.
Sunstroke, a cause of insanity, 459.
Sydenham on insanity from gout, 504; from ague, 653.
Syme, Prof., 443.
Symptomatological classification, 10.
Syphilis, its prevalence, 465.
Syphilitic insanity, 464; delusional, 468; secondary, 466; syphilomatous, 469, 475; vascular, 469; cephalalgia in, 478; pathology of, 470, 476; prognosis of, 480; treatment of, 478.
Symmetrical lesions in brain, 477.

Temperaments, doctrine of, 2; sanguine, 138.
Temperature in insanity, 21; in mania, 148, 170; in children, 139; in puerperal insanity, 557.
Tests of insanity made by lawyers, 680.
Thyroid feeding, 192, 294, 664.
Tracey, Judge, 680.
Traumatic insanity, 459; idiocy,

461 ; trephining in, 460 ; prevalence of, 462.
Travel, 52, 129.
Treatment, 693.
Trional, 709.
Tuczek, Prof., 413.
Tuke, Dr D. Hack, 197, 308, 653.
Tuke, Dr J. Batty, 304, 409, 411, 419, 561, 566.
Tumours of brain and insanity, 427.
Turner, Dr John, 169.
Twins with hereditary neurosis, 216 ; with general paralysis, 406.
Typhomania, 198.

Uncontrollable impulse, 329.

Vacuolation of nucleus in epilepsy, 451, and Plate IX.
Vaso-motor spasm, 103.
Verrücktheit, primäre, 159, 378.
Visceral melancholia, 60 ; pathology of, 61, 71, and Plate II, fig. 1.
Voisin, Dr A., 411.
Volitional insanity, 329.

Waller, 643.
Wallis, Dr J. A., 455.
Wiglesworth, Dr J., 328, 562.
Wilks on insanity from Bright's disease, 658 ; on syphilitic affections, 465.
Will-making, 683.
Wilson, Dr G. R., 405, 587.

Yellowlees, Dr D., 108 ; his case of homicidal mania, 208 ; his case of somnambulism, 668.

NEILL AND COMPANY, LTD., PRINTERS, EDINBURGH.

PLATE II.

Five microscopic drawings. Fig. 1. Cells of semilunar abdominal ganglion of a very bad case of visceral melancholia, in a condition of atrophy, degeneration, and pigmentation. This patient had intense delusions that she had no stomach, and that her bowels were never moved. She had no appetite, she obstinately refused food, and died of exhaustion, though regularly fed with the stomach pump.

Fig. 2. Shows a new lesion of the brain discovered by Dr J. J. Brown, in a case of acute mania in the Royal Edinburgh Asylum in 1877. This is a section from a convolution, showing its free surface at upper part of section, from which the pia mater had been removed, and in the part of grey substance drawn an enormous deposit of a new substance, taking up most of its middle layers. It appeared in masses, in smaller nuclei-like bodies, and also round the vessels. The larger cells seen in the inner layers of the grey substance were somewhat degenerated and atrophied, their processes having disappeared.

Fig. 3. An epithelial granulation, from the floor of the fourth ventricle of a case of advanced general paralysis, showing enormous proliferation of the epithelial cells. There is one, or, at the most, two normal layers of delicate epithelial cells in this position; but as seen in the section they have increased greatly, and have altered in appearance. At the summit of the granulation they are round, at its base flattened, while under it we observe a sclerosed layer of nervous tissue, with the neuroglia enormously increased in volume.

Fig. 4. A small artery in the brain with all its coats enormously thickened, separated from each other, and its lumen almost obliterated, as found in some cases of syphilitic insanity, senile insanity, and other forms (after Dr J. J. Brown).

Fig. 5. A portion of starved and atrophied brain substance, from a convolution of a case of senile insanity. The whole substance is loose, recticulated, and almost destitute of brain-cells in upper part of section, with only the packing tissues and vessels left.

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

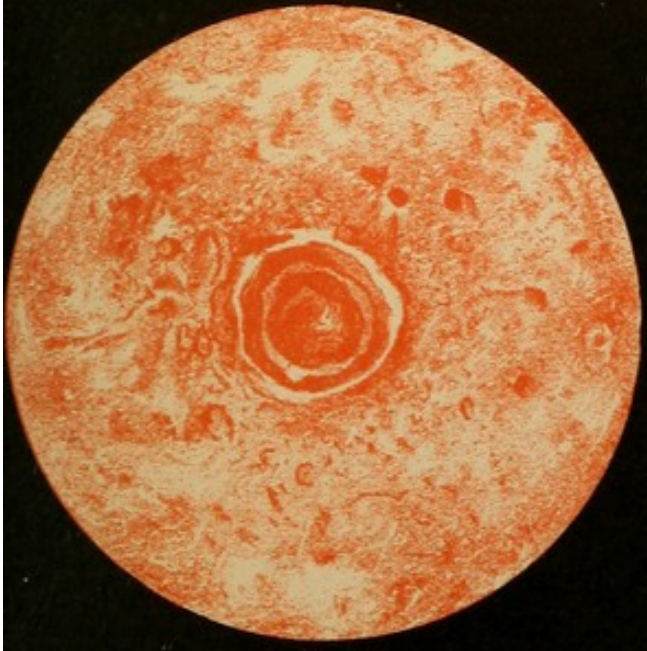
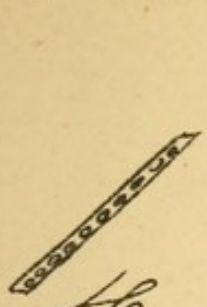


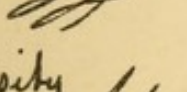
FIG. 5.

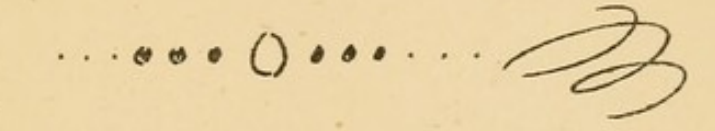
PLATE III.

Facsimile of a letter written by a maniacal patient, showing incoherence, rapid change of ideas, delusions, hallucinations of sight, an insane association of ideas, and an insane symbolism.



etc
ad libitum





Hamlet
Macbeth

University

Yes.

£1,000
£500-

Fifeheadmagdalen

Fife
Coblentz

Iam,

Dear Sir,

Your very obedient,
very humble servant

Posset.

Last new Song which I have heard is
"Kiss me Quick me Honey"- Please tell Mary-Hardonezmon.

C. WATERSTON & SONS.

PLATE IV.

The appearance of a section of the anterior lobe of the brain in a patient who had died of the exhaustion of acute mania. It shows—

a. The congested grey substance of the convolutions.

b. Congested white substance near grey matter.

c. An inner ring of still more intense congestion along the line of junction of the grey and white substances, and extending into the white substance.

d. Limited vaso-motor areas of congestion in the white substance.

This is a type of the irregular vascularity seen in the brain very commonly in acute insanity, indicating probably during life a disturbed vaso-motor condition, which is a necessary accompaniment, and probably the effect of the cell disturbance.

COLUMBIA UNIVERSITY LIBRARY

 PLATE IV.

COLUMBIA
UNIVERSITY
LIBRARY

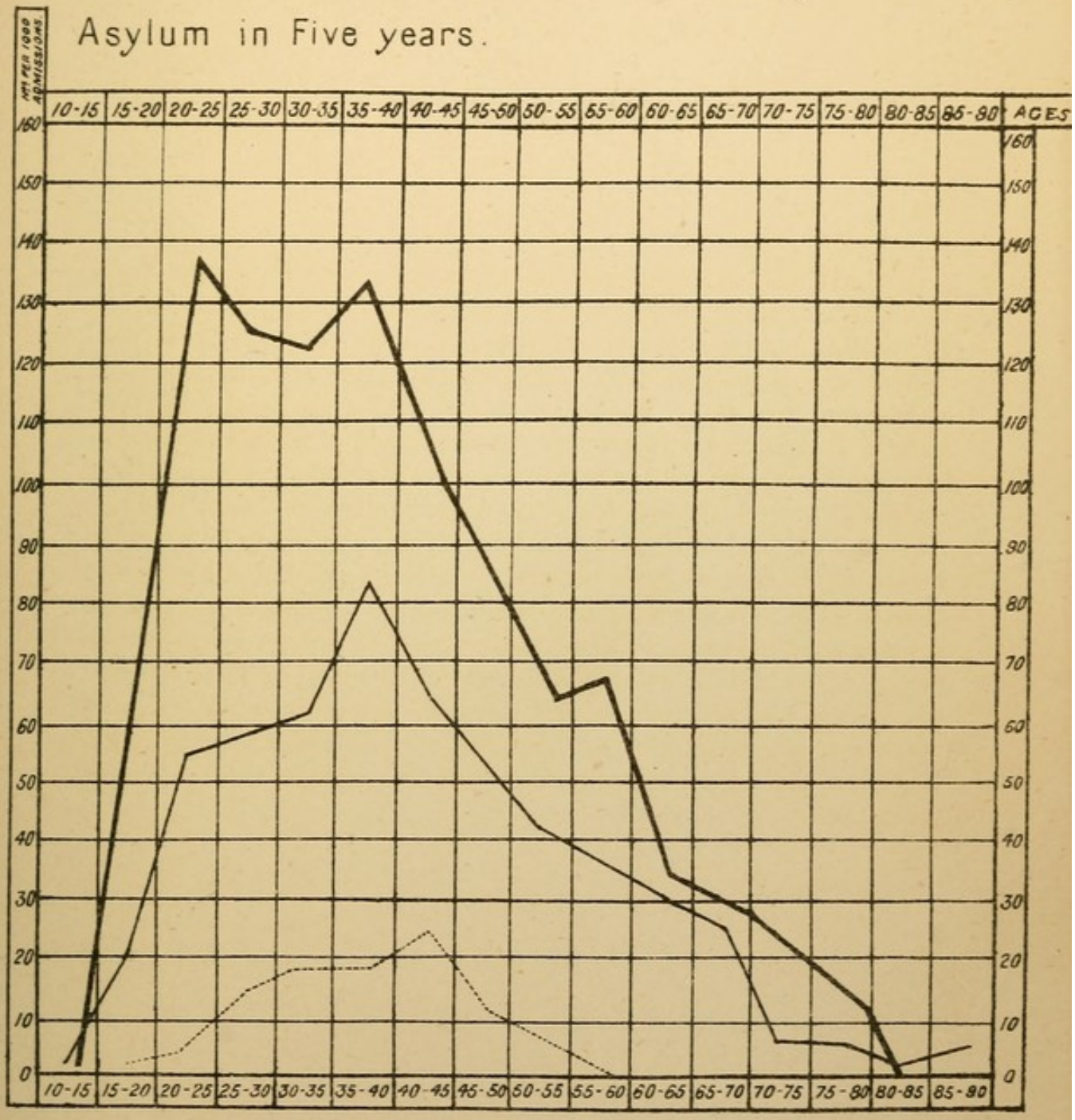
PLATE V.

A chart showing the relative prevalence of Melancholia (thin line), Mania (thick line), and General Paralysis (dotted line) in the Royal Edinburgh Asylum, and the age at which those three conditions are most prevalent. The numbers per 1000 of the total admissions run along the sides, and the ages along the top and bottom of the chart. It is seen that most cases of melancholia occur between 35 and 40, while the highest number suffering from mania occurred between 20 and 25. The melancholic line keeps high all through the end of life. General paralysis is scarcely found at all before 25, reaches its acme between 40 and 45, and is scarcely found at all after 57. While maniacal conditions rise highest as adolescence is completed between 20 and 25, they rise very high again at the period when melancholic conditions prevail most, between 35 and 40; that is when the mental and moral causes of insanity are most prevalent, when the business troubles, domestic worries, the afflictions, and the keen competitions of life are most common or most keenly felt.

COLUMBIA UNIVERSITY LIBRARY

CHART.

Showing the numbers per 1000 of Total admissions, and the Ages of 996 cases of Mania, 535 cases of Melancholia, and 104 cases of General Paralysis, making together 1635 cases of the 1778 Total cases admitted into the Royal Edinburgh Asylum in Five years.



MANIA _____

MELANCHOLIA _____

GENERAL PARALYSIS .....

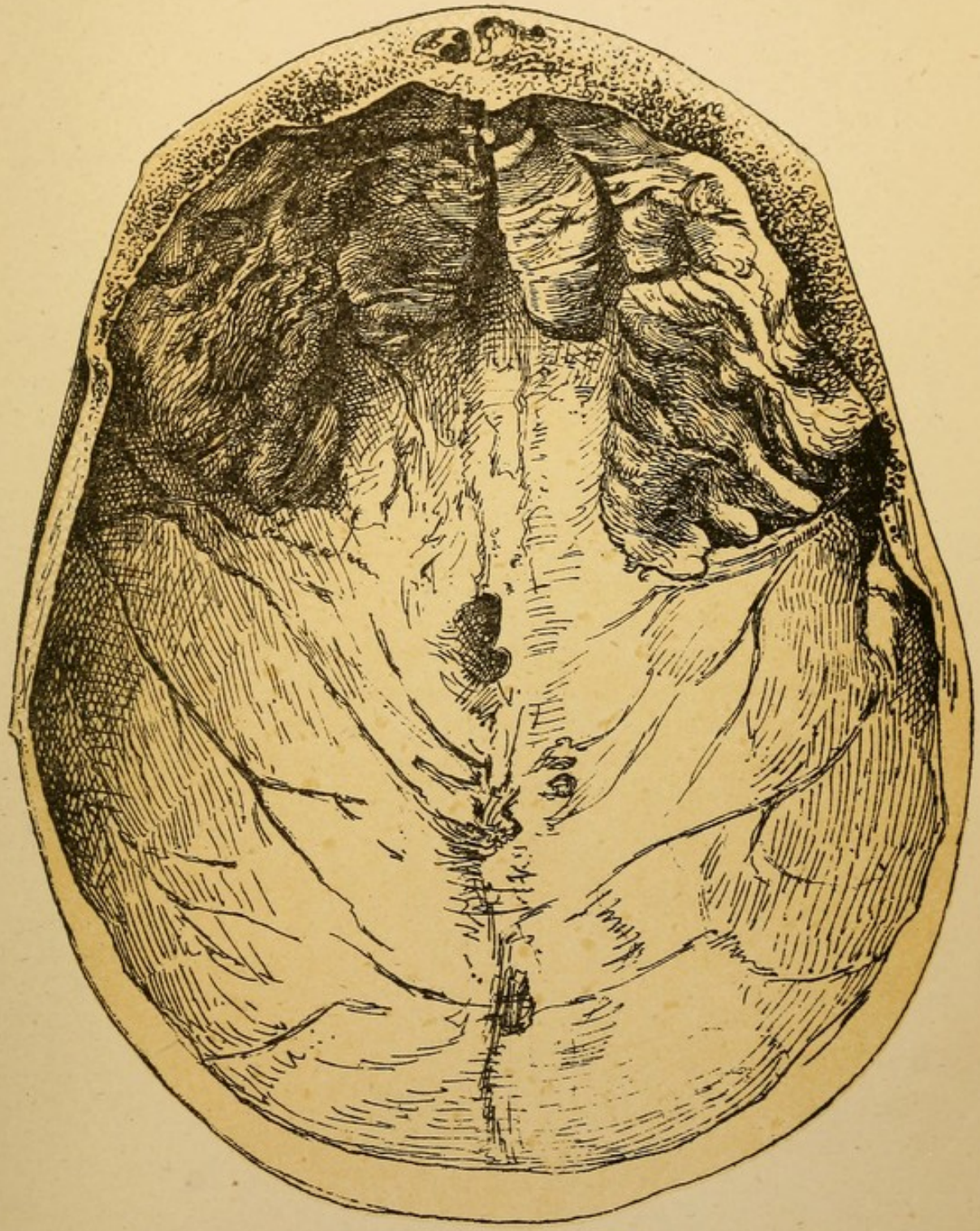
COLUMBIA
UNIVERSITY
LIBRARY

PLATE VI.

Great thickening of skull-cap anteriorly, with enormous deposits of new osseous tissue in an irregularly modulated way on the inner table of skull, in a case of alternating insanity of over twenty years' duration. This seems to be an aggravated example and type of what is almost universal in chronic insanity with periods of excitement. It is a proof of the structural effects of such repeated congestions of the branches of the carotid artery, even in the hardest tissue, and may be fairly considered to be of the same nature as the brain changes in the same cases, which are not so evident, but are no doubt far more important. The atrophy of the anterior lobes of the brain that usually accompanies such bony thickenings and deposits probably helps their growth, they being thus "compensatory" to some extent, like the increased cerebro-spinal fluid.

COLUMBIA
UNIVERSITY
LIBRARY

PLATE VI.

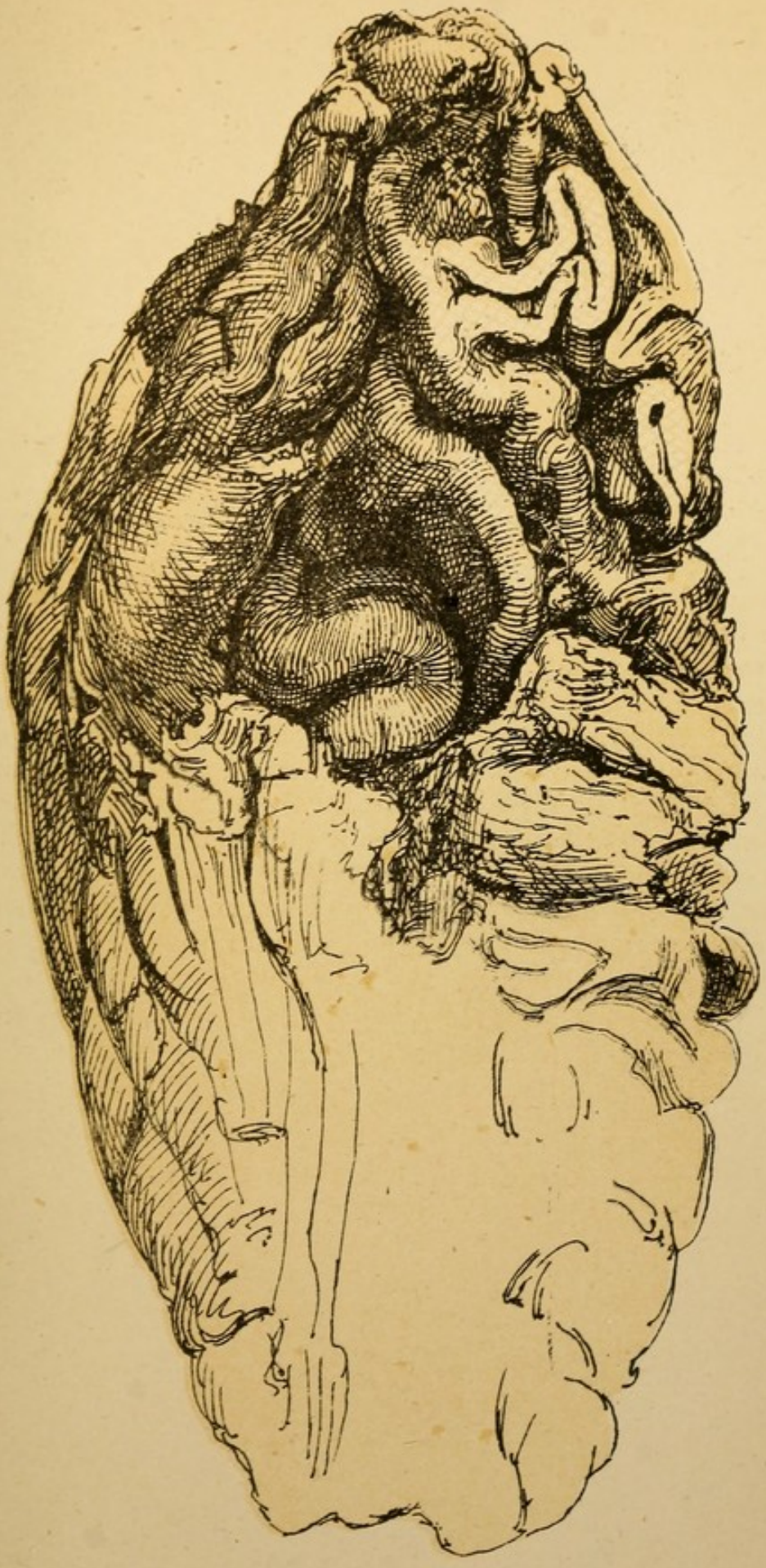


COLUMBIA
UNIVERSITY
LIBRARY

PLATE VII.

A section through the brain of a man who had laboured under syphilitic insanity (the third or vascular form), with slow arteritis affecting the vessels supplying the anterior and part of middle lobes of one hemisphere. This had caused slow starvation and absorption of nearly all the white substance in the centre of those lobes, leaving the grey matter of the gyri almost intact, so that there was a sac of fluid inside with the convolutions forming its walls. The convolutions looked at from the inside are quite defined, and look as if the white substance had been carefully scraped off them. This illustrates the greater vascularity, and consequent greater vitality, of the grey matter as compared with the white, as well as the different sources of the chief blood supply of each.

COLUMBIA
UNIVERSITY
LIBRARY



COLUMBIA
UNIVERSITY
LIBRARY

PLATE VIII.

Fig. 1. Fresh section of cortex from a case of general paralysis, stained with aniline blue black. The drawing is from the deepest layer of the grey matter. × 300.

a. a. Spider cells with distinct "vascular processes" *v. p.*, and numerous very fine processes.

b. b. Degenerate nerve-cells, with processes of spider-cells passing near them.

c. Small blood-vessel showing proliferation of adventitial nuclei and irregularity of outline.

d. Nuclei of neuroglia.

Fig. 2. Fresh section of inferior frontal convolution from a case of chronic mania of thirty-five years' duration. × 300.

a. a. Nerve cells of third layer showing evidences of pigmentary degeneration. Most of the fine processes have gone; in some the apex-process also has disappeared. There is a great increase in the pigment granules in all the cells.

b. A blood-vessel showing numerous granular deposits of pigment (*c*) in the perivascular space, and some increase in the adventitial nuclei.

d. Nuclei of neuroglia.

NOTE.—This and Plate IX. were drawn by Dr Middlemass.

COLUMBIA UNIVERSITY LIBRARY

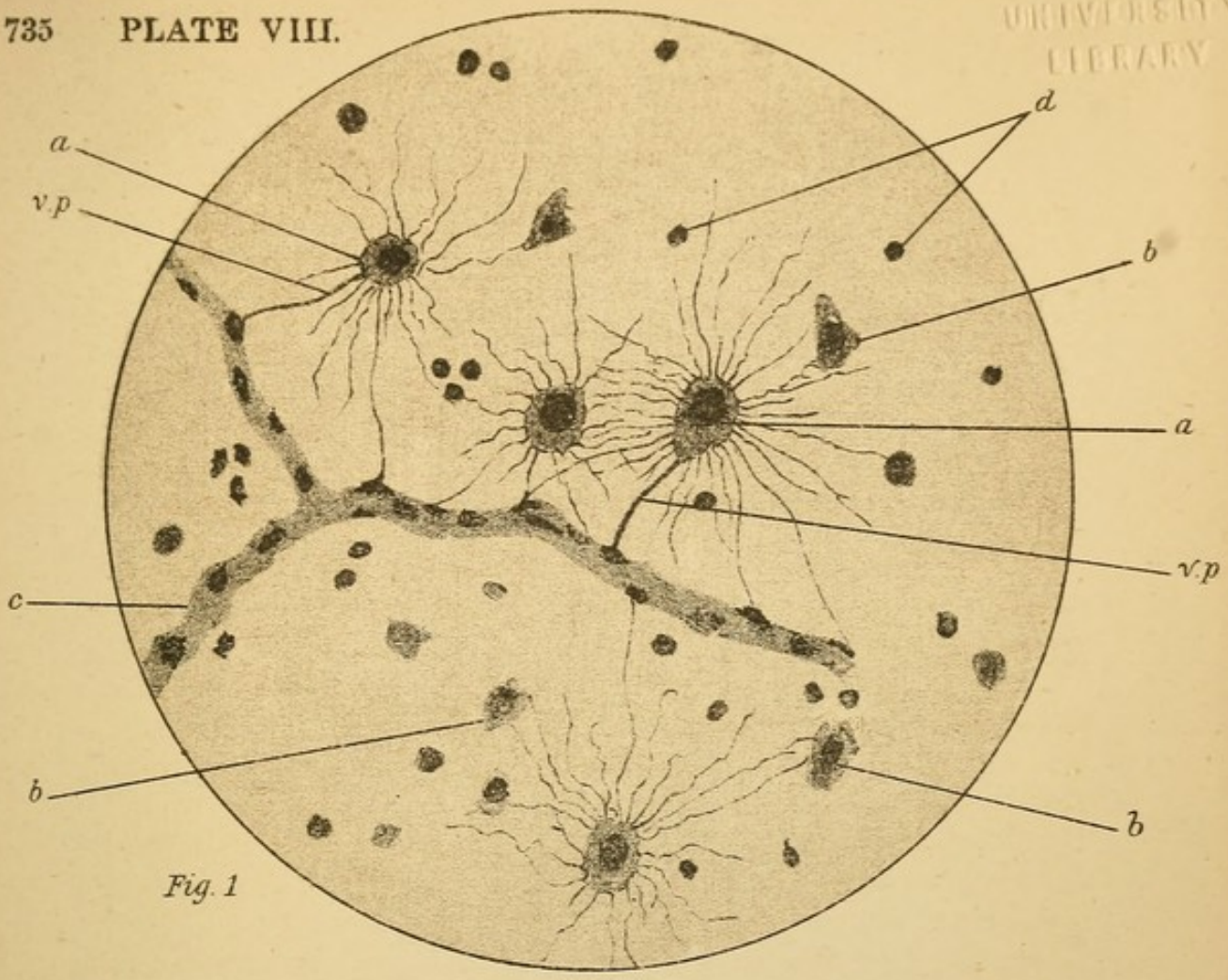


Fig. 1

× 300

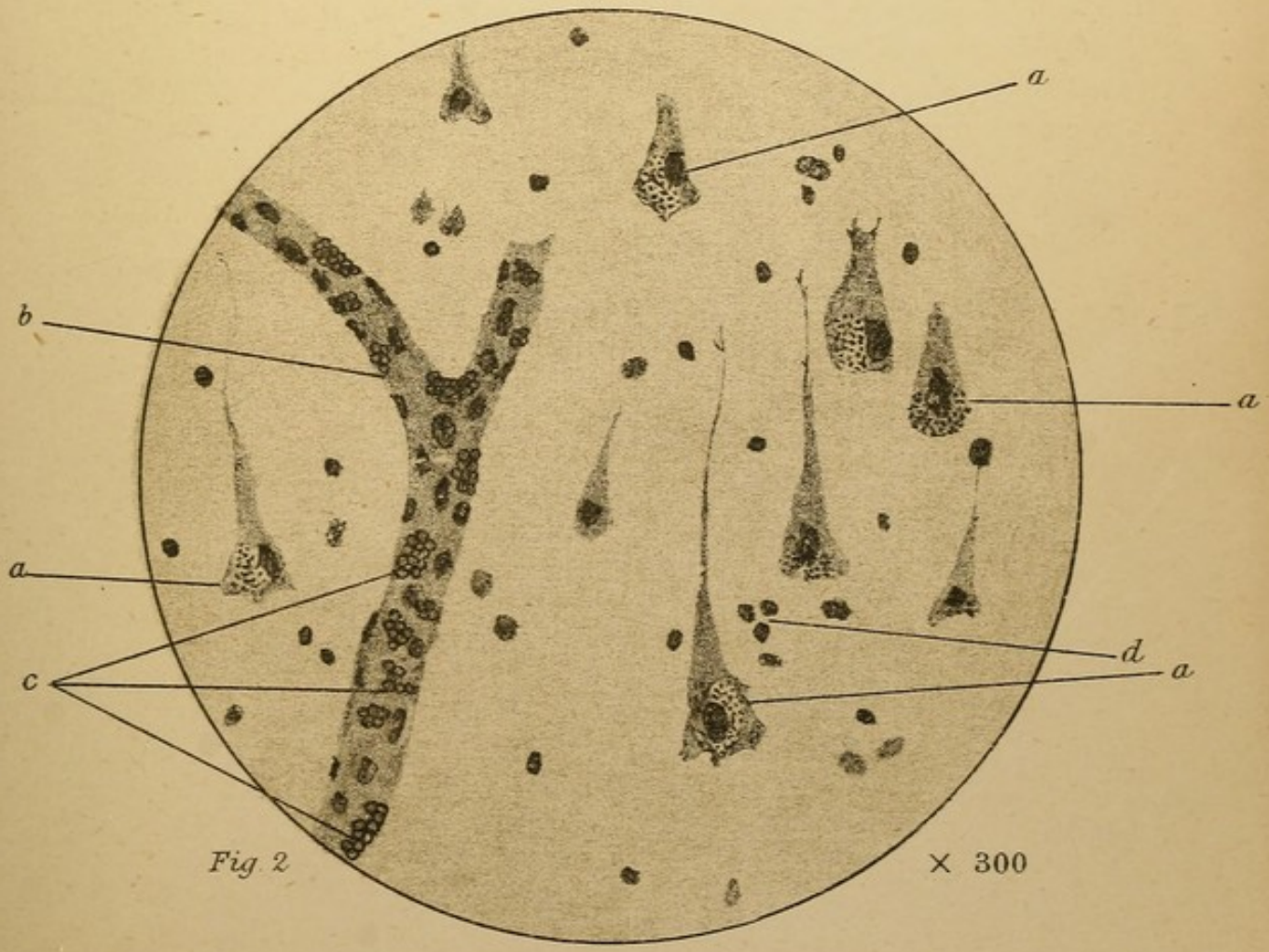


Fig. 2

× 300

G. Waterston & Sons.

COLUMBIA
UNIVERSITY
LIBRARY

PLATE IX.

Fig. 1. Fresh section from the inf. frontal convolution of a case of epilepsy. The drawing shows the cells of the third layer. × 300.

a. a. Nerve-cells showing distinct vacuolation of the nucleus. In some the processes are still present; in others they have degenerated.

b. A small blood-vessel.

c. Nuclei of neuroglia.

Fig. 2. Fresh section of Broca's convolution in a case of developmental epilepsy.—*a.* Nerve-cell showing well-stained nucleus, with small amount of protoplasm round it. *b.* Nerve-cell showing remains of apex-process and granules of pigment in protoplasm. *c.* Mass of cell-protoplasm without nucleus. *d.* Nucleus of nerve-cell, apparently destitute of protoplasm. *e.* Nucleus of neuroglia-cell. × 300.

Fig. 3. A nerve-cell showing granular condition of protoplasm, collections of pigment granules, irregular staining of nucleus, and atrophy of protoplasm and processes. × 650.

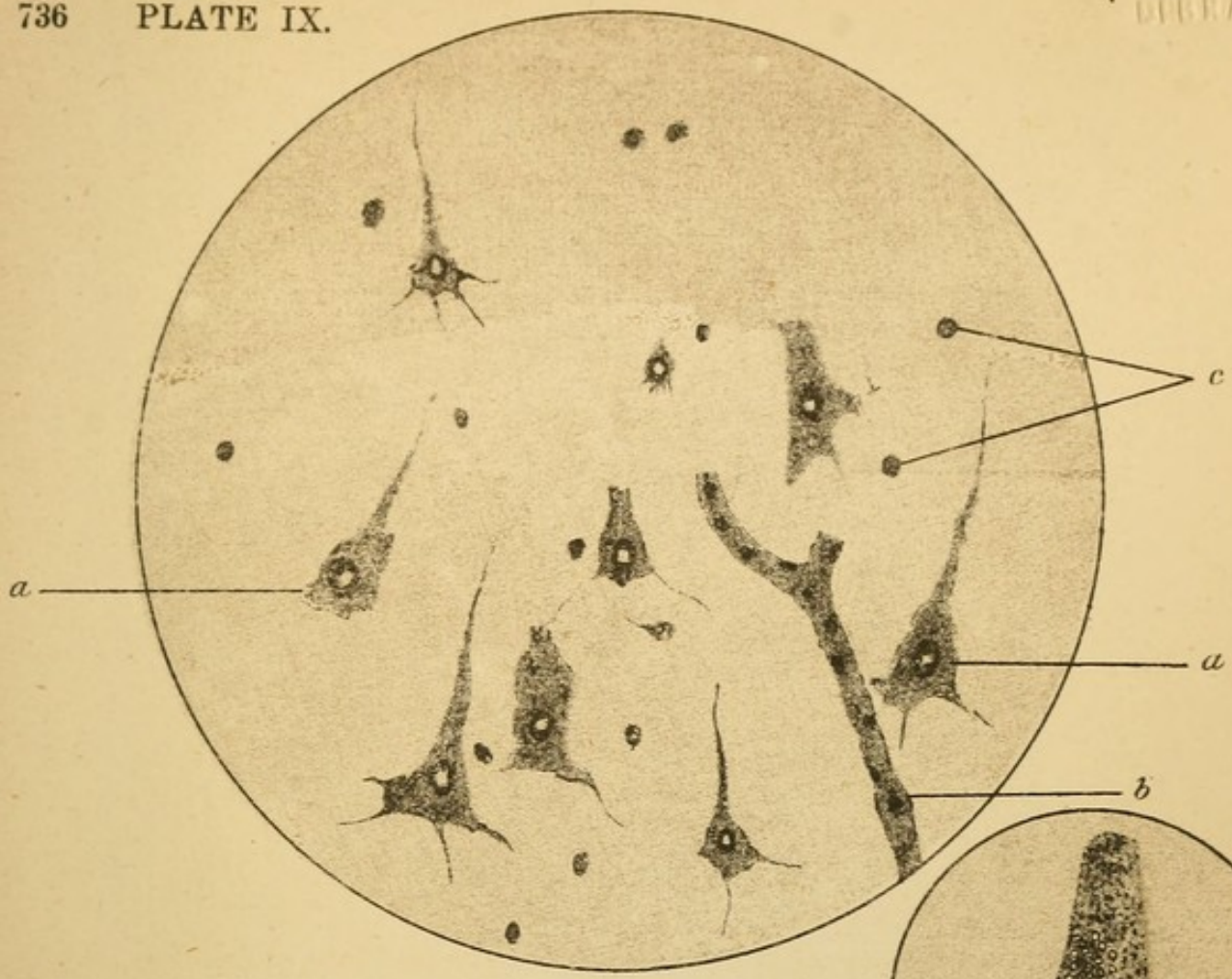


Fig. 1

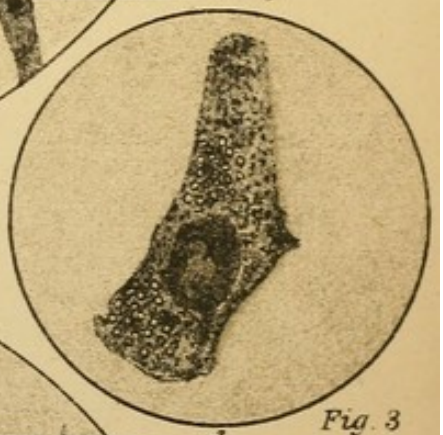


Fig. 3

Fig. 2

G. Waterston & Sons

PLATE X.

Photographs of casts of palates taken from patients in the Royal Edinburgh Asylum, showing the three standard types of palate I used in my investigations into the condition of the palate among the insane, among the idiotic, among criminals, and among the general population.

Also showing the three varieties of palate in adolescent insanity.

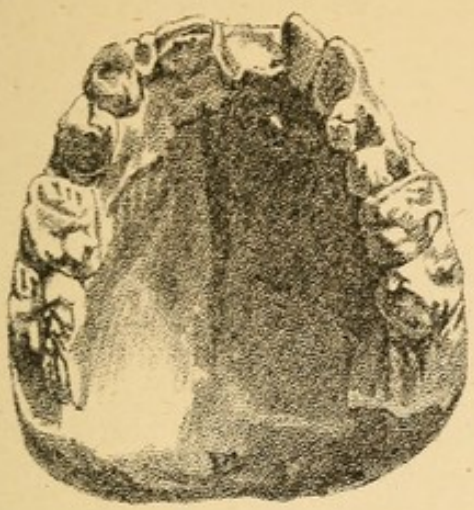
1. "Typical," with line of teeth and arch of palate both approaching the semicircular.

2. "Neurotic," with line of teeth and arch of palate more like the Gothic arch.

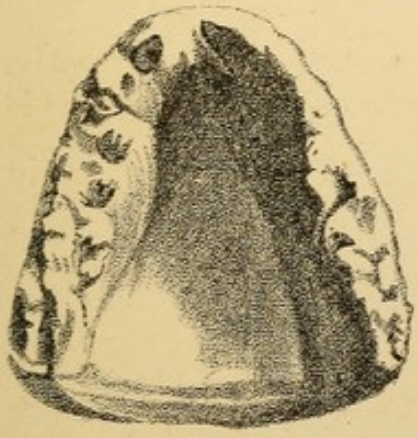
3. "Deformed," with line of teeth irregular and palate arch V-shaped.

4, 5, and 6. Palates from cases of adolescent insanity, illustrating strongly "neurotic" and "deformed" conditions.

STANDARD TYPES OF PALATE



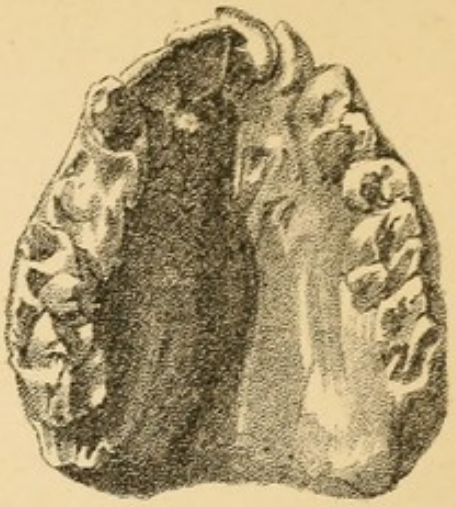
1. TYPICAL.



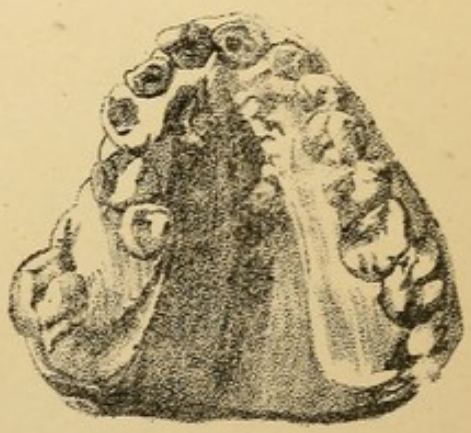
2. NEUROTIC,

3. DEFORMED,

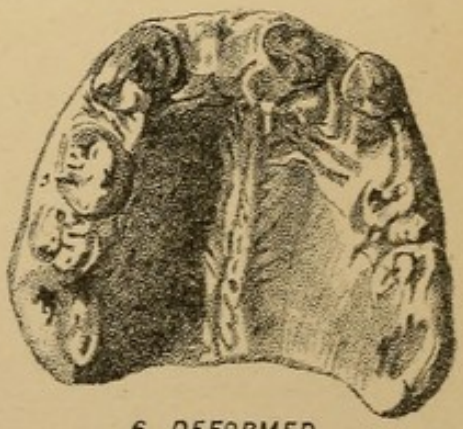
ADOLESCENT INSANITY.



4. NEUROTIC,



5. DEFORMED,



6, DEFORMED,
with Central Ridge.

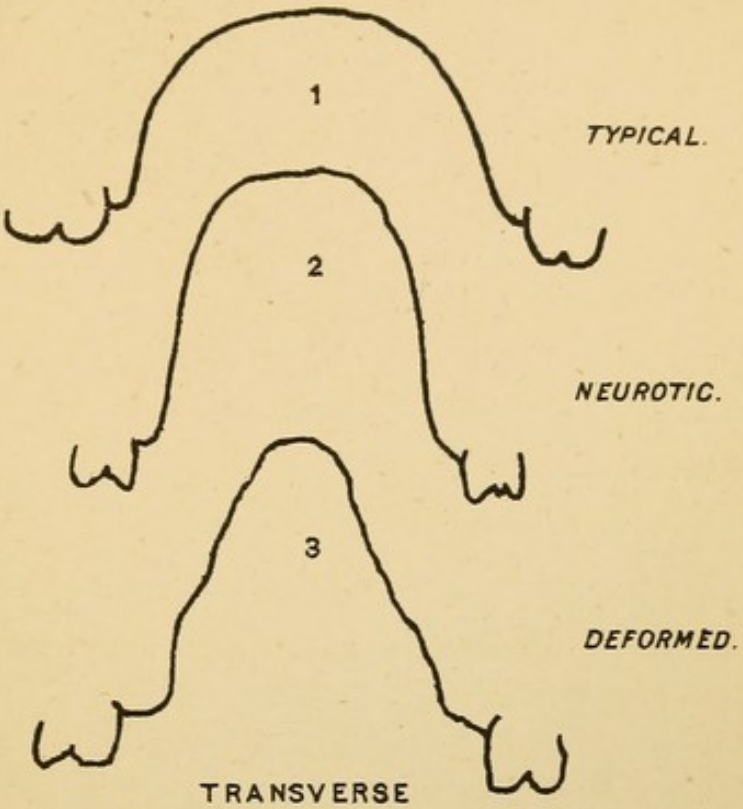
PLATE XI.

Sections—vertical transverse and vertical antero-posterior—of the three types of palate.

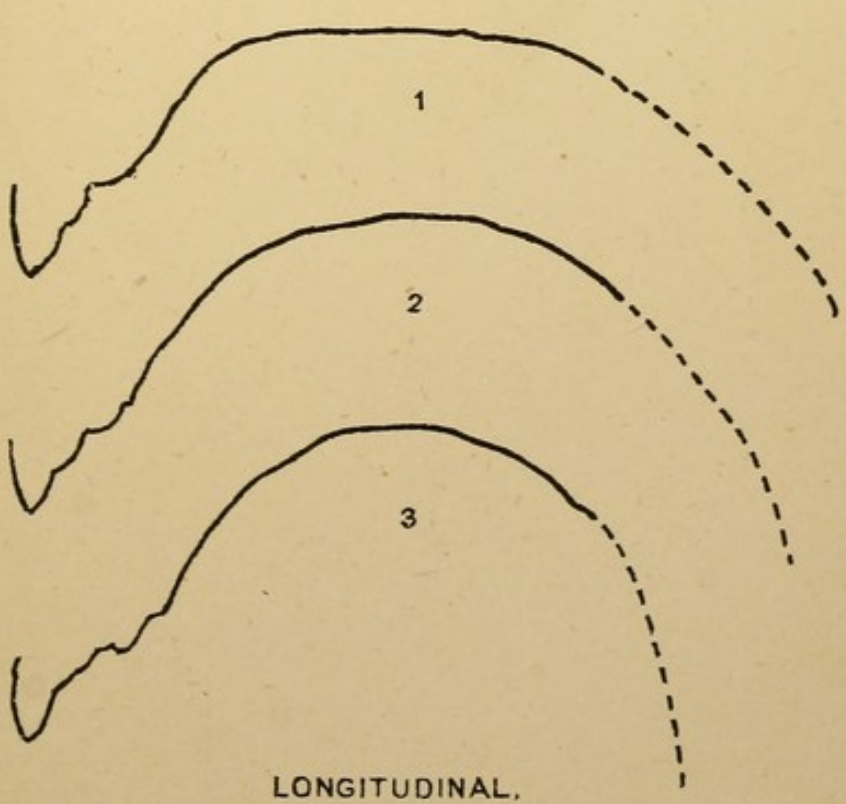
1. Typical.
2. Neurotic.
3. Deformed.

COLUMBIA UNIVERSITY LIBRARY

SECTIONS OF STANDARD PALATES



TRANSVERSE



LONGITUDINAL.

The Soft Palate is represented by a dotted line.

COLUMBIA
UNIVERSITY
LIBRARY

PLATE XII.

Sections of palates, vertical transverse, and vertical antero-posterior of six typical cases of adolescent insanity, taken by Dr G. R. Wilson, by means of pieces of lead moulded to the shape of the palate in the living subject. These show the varieties and gradations in the shape of the palate, both transversely and antero-posteriorly. The dotted lines represent the soft palate.

1. Is V-shaped (deformed), transversely but more normal antero-posteriorly.

2. Is saddle-shaped (deformed), transversely and very deformed antero-posteriorly. That shape is very common in the adolescent insane and in idiots.

3, 4, and 5. Show various kinds of the "Neurotic" type of palate.

6. Approaches the "Typical."

COLUMBIA UNIVERSITY LIBRARY

SECTIONS OF PALATES IN ADOLESCENT INSANITY.

(Vertical transverse and antero-posterior)

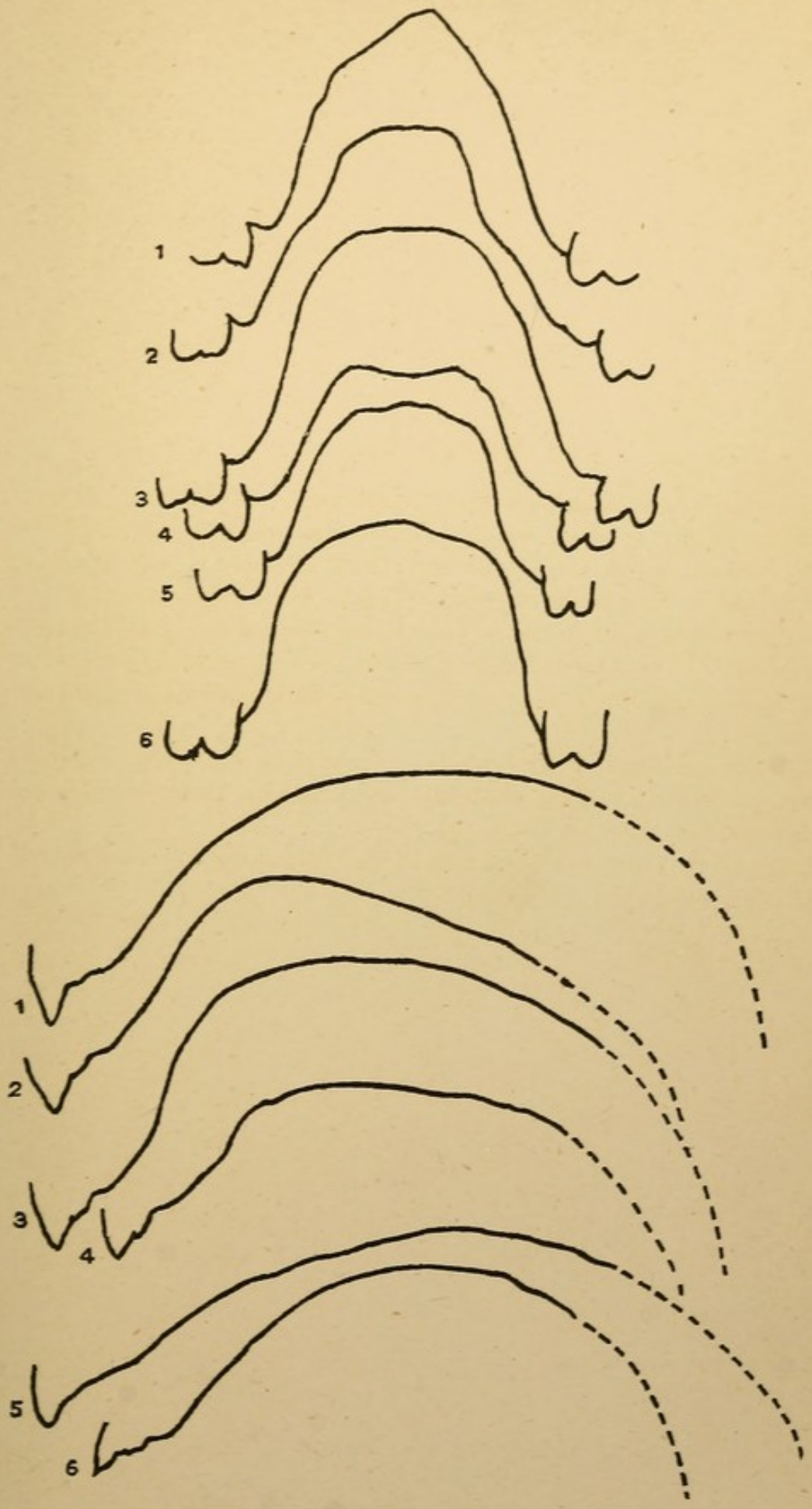


PLATE XIII.

Fig. 1. Normal large pyramidal nerve-cells of frontal cortex (human). Bevan Lewis's fresh method. × 500. The case was one from Royal Edinburgh Infirmary, in which death occurred from fracture of skull.

Fig 2. Large pyramidal nerve-cells of frontal cortex, showing first stage of pigmentary degeneration. The cells are slightly swollen, and their protoplasm stains deeply, obscuring the pigment. The processes are intact. From a case of epilepsy. Bevan Lewis's fresh method. × 500.

Fig. 3. Large pyramidal nerve-cells of frontal cortex, showing second stage of pigmentary degeneration. The cells are beginning to shrink, their protoplasm stains faintly, the cell-pigment is much increased and is surrounded by a "sclerosed zone" of protoplasm, the processes stain faintly, and some of them are stunted. From a case of general paralysis. Bevan Lewis's fresh method. × 500.

Fig. 4. Large pyramidal nerve-cells of frontal cortex, showing third stage of pigmentary degeneration. The cells are shrunken and disintegrating. The remaining protoplasm stains faintly, and contains very numerous pigment granules. The processes have mostly disappeared. The nucleus, when present, is usually faintly stained, and is often distorted. Ultimately only a few grains of yellow pigment are left representing the cell. From a case of general paralysis. Bevan Lewis's fresh method. × 500.

Fig. 5. Large pyramidal nerve-cells of frontal cortex, showing granular degeneration. The protoplasm is filled with minute granules of a pale yellow colour. These, however, are often colourless. From a case of alcoholic insanity. Bevan Lewis's fresh method. × 500.

Fig. 6. Large pyramidal nerve-cells of frontal cortex, showing a very advanced stage of granular degeneration. The protoplasm is faintly stained and granular. The nuclei are also faintly stained, and altered in shape and vacuolated or granular. From a case of chronic melancholia. Bevan Lewis's fresh method. × 500.

NOTE.—The drawings in this and the two following Plates were drawn by Dr W. F. Robertson, Pathologist to R. E. Asylum.

COLUMBIA UNIVERSITY LIBRARY

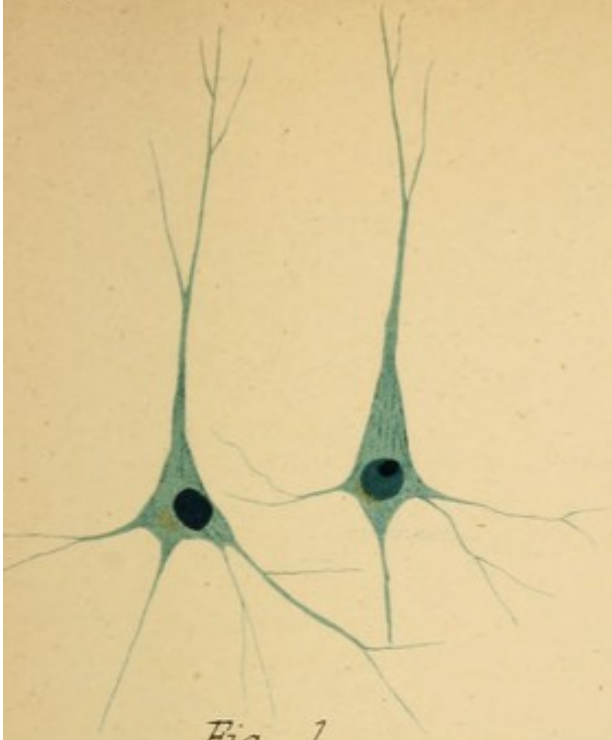


Fig. 1.

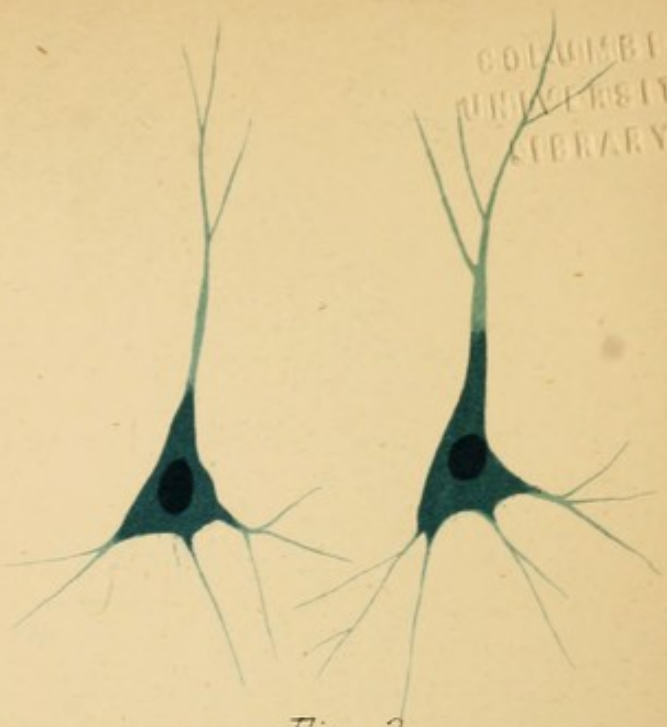


Fig. 2.

Fig. 3.

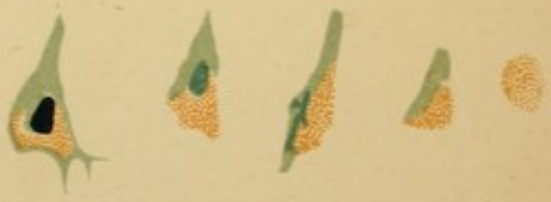


Fig. 4.

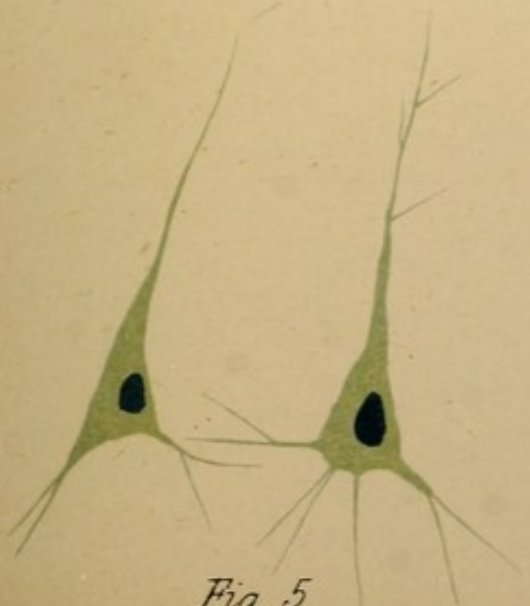


Fig. 5.

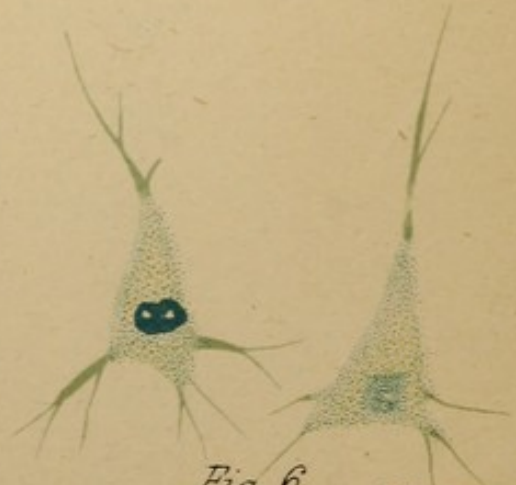


Fig. 6.

G. WATERSTON & SONS.

PLATE XIV.

Fig. 1. Pia mater and first and second layers of frontal cortex, from a case of advanced general paralysis. Bevan Lewis's fresh method. × 400. The pia mater (*a*) is greatly thickened and infiltrated with round cells. The cortical capillaries (*b*) are thickened and granular, and show an increase in the number of their nuclei. The spider cells (*c*) in the first layer are greatly hypertrophied. Their thickened processes may form a layer of felting (*d*) below the pia. The nerve-cells (*e*) are much degenerated.

Fig. 2. Frontal cortex at the level of the large pyramidal nerve-cells, from a case of advanced general paralysis. Bevan Lewis's fresh method. × 500. The capillaries (*a*) are thickened and granular, and show an increase in the number of their nuclei. The neuroglia cells (*b*) and their processes are very greatly hypertrophied. The nerve-cells (*c*) show advanced degenerative changes.

COLUMBIA UNIVERSITY LIBRARY

Fig. 1.

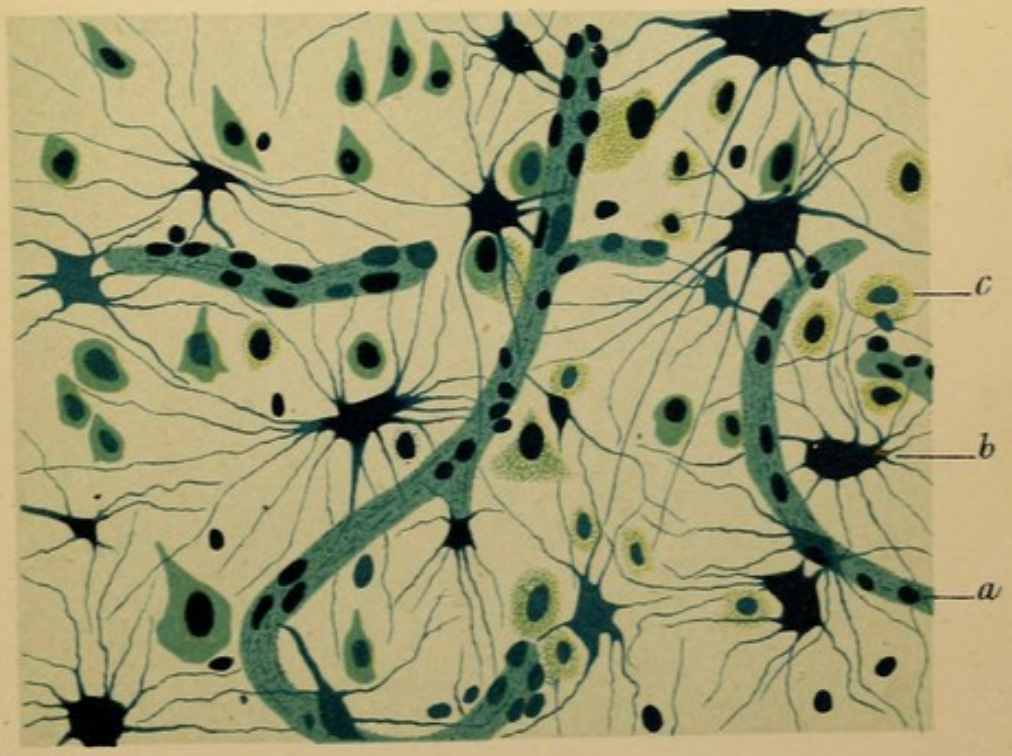


Fig. 2.

COLUMBIA
UNIVERSITY
LIBRARY

PLATE XV.

Fig. 1. Normal capillaries of human cerebral cortex. Bevan Lewis's fresh method. × 500.

Fig. 2. Capillaries of cerebral cortex from a case of advanced general paralysis, showing marked thickening and granularity, and increase in number of nuclei. Bevan Lewis's fresh method. × 500.

Fig. 3. Normal arteriole of human cerebral cortex. Bevan Lewis's fresh method. × 300.

Fig. 4. Cerebral arteriole from a case of advanced general paralysis, showing dense aggregation of round cells upon its walls, and the processes of hypertrophied spider cells attached to it. Bevan Lewis's fresh method. × 300.

Fig. 5. Cerebral arteriole from a case of alcoholic insanity, showing general fibrous thickening and localised cellular aggregations. Bevan Lewis's fresh method. × 300.

Fig. 6. Normal small pyramidal nerve-cells of third layer of cerebral cortex of child. Bevan Lewis's fresh method. × 500.

Fig. 7. Nerve-cells of cerebral cortex of full-time fœtus. Bevan Lewis's fresh method. × 500.

Fig. 8. Nerve-cells of third layer of cerebral cortex, from a case of epileptic idiocy. [Patient aged 24.] Bevan Lewis's fresh method. × 500. The nerve-cells closely resemble those of the fœtus, the only difference being that they show a degree of granular change in their protoplasm. A comparison of these two specimens (7 and 8) is most instructive as showing one stage in normal brain cell development in Fig. 7, and morbidly arrested development in Fig. 8; each corresponding to the respective mental developments of the individuals from whose brains they were taken.

Fig. 9. Large pyramidal nerve-cells of frontal cortex, from a case of senile insanity in a patient aged 85. Bevan Lewis's fresh method. × 500. They show advanced pigmentary degeneration, with loss of many of their processes.

Fig. 10. Large pyramidal nerve-cells of frontal cortex, from a case of secondary dementia. Patient had an attack of mania at the age of 21, which was not recovered from. He died at the age of 32, from phthisis. Bevan Lewis's fresh method. × 500. The nerve-cells show marked granular change in their protoplasm, and many of their processes, more especially the apical, are stunted.

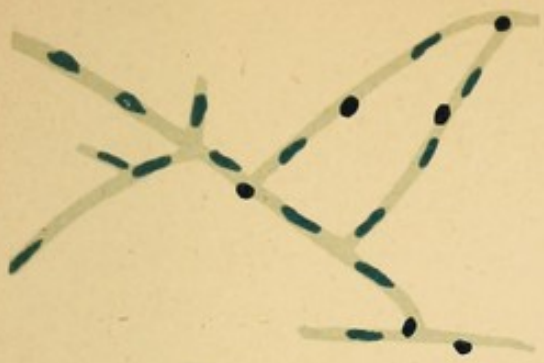


Fig. 1.

Fig. 2.

Fig. 3.

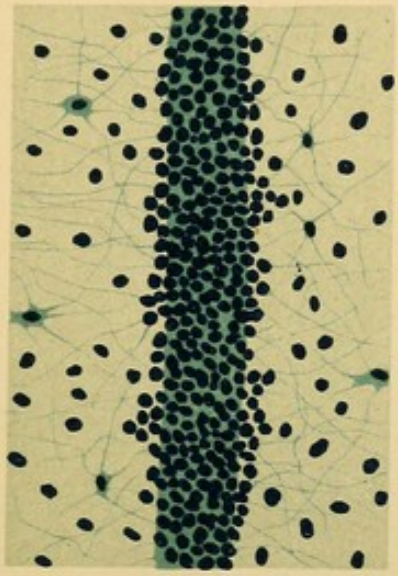


Fig. 4.

Fig. 5.

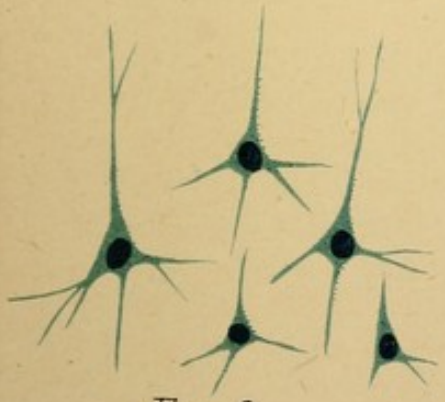


Fig. 6.

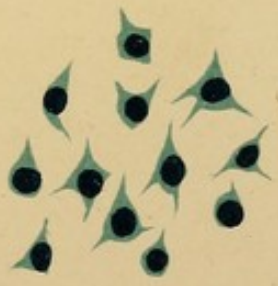


Fig. 7.

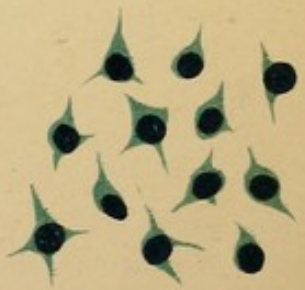


Fig. 8.

Fig. 9.

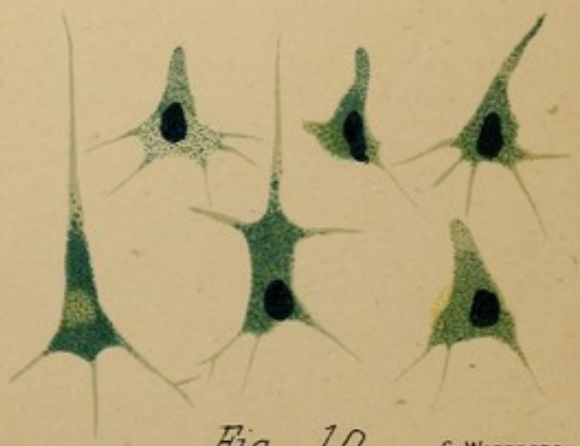


Fig. 10.

G. Waterston & Sons

COLUMBIA
UNIVERSITY
LIBRARY

PLATE XVI.

The drawings in this and the following three plates were made from preparations stained by the methyl violet method of Dr W. F. Robertson, Pathologist to the Scottish Asylums, formerly Pathologist to the Royal Edinburgh Asylum, after fixation of the tissues in Heidenhain's sublimate solution, and are intended to show the state of the chromatic elements in the cells of the brain cortex in health and in mental disease.

Fig. 1. Small pyramidal nerve-cell of cerebral cortex of a healthy young man who died suddenly while undergoing a small surgical operation. × 700. Observe the deeply stained Nissl bodies, or chromatic elements, in the protoplasm. They are here less distinct than in Fig. 2, owing chiefly to the circumstance that the tissues had undergone slight *post mortem* change, which causes some blurring of the sharp outline presented by these bodies in preparations from a perfectly healthy brain. The diffuse staining of the nucleus is to be attributed to the same cause. A normal cortical nerve-cell unaffected by cadaveric changes is shown in the next figure. A cell such as this, however, is a more useful standard for comparison with those in tissues from the insane, as it is rare that these can be obtained prior to the occurrence of a considerable amount of *post mortem* change.

Fig. 2. Large pyramidal nerve-cell of cerebral cortex from a case of recurrent mania, showing normal Nissl bodies and nucleus. × 700. Note that the axis-cylinder process given off at the base is devoid of Nissl bodies. A minority of the cortical nerve-cells in sections from this case, the tissues from which were obtained in a very fresh condition, presented a perfectly healthy appearance. The majority, of which examples are shown in Figs. 3, 4, and Fig 1 in Plate XVII., were more or less markedly affected by chromatolysis. The patient was a woman who for seven years had been subject to attacks of very acute mania, occurring every two or three months, with intervals of comparative sanity.

Fig. 3. Large pyramidal nerve-cell of cerebral cortex from same case as Fig. 2, showing an early stage of chromatolysis. × 700. Chromatolysis consists essentially in a process of fragmentation of the Nissl bodies. They break down into fine granules, show a decreasing affinity for basic dyes, and in very advanced stages entirely disappear. This process may affect the whole cell simultaneously, but more generally it begins in a special part of the cell and gradually extends. Frequently the part first affected is, as in this cell, the neighbourhood of the spot from which the axis-cylinder process is given off. At a later stage the nucleus becomes involved by the morbid change, showing disintegration of its chromatin threads, and often shrinkage and displacement to the periphery of the cell-body. Chromatolysis has been observed to follow a large number of different experimental lesions upon lower animals, such as section of nerves, various forms of poisoning, death from inanition and from want of sleep, as well as to occur in various diseases such as peripheral neuritis (in the cells of the anterior horns of the spinal cord). Its occurrence in general paralysis, acute mania, acute melancholia, and other forms of mental disease has now been described by many observers.

Fig. 4. Large pyramidal nerve-cell of cerebral cortex from same case as Figs. 2 and 3, showing an advanced stage of chromatolysis. × 700.

UNIVERSITY LIBRARY

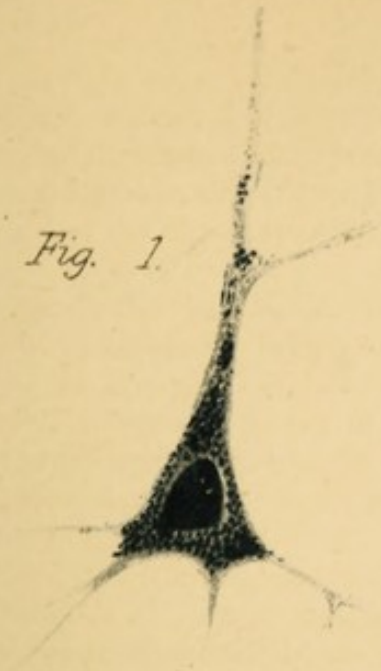


Fig. 1.

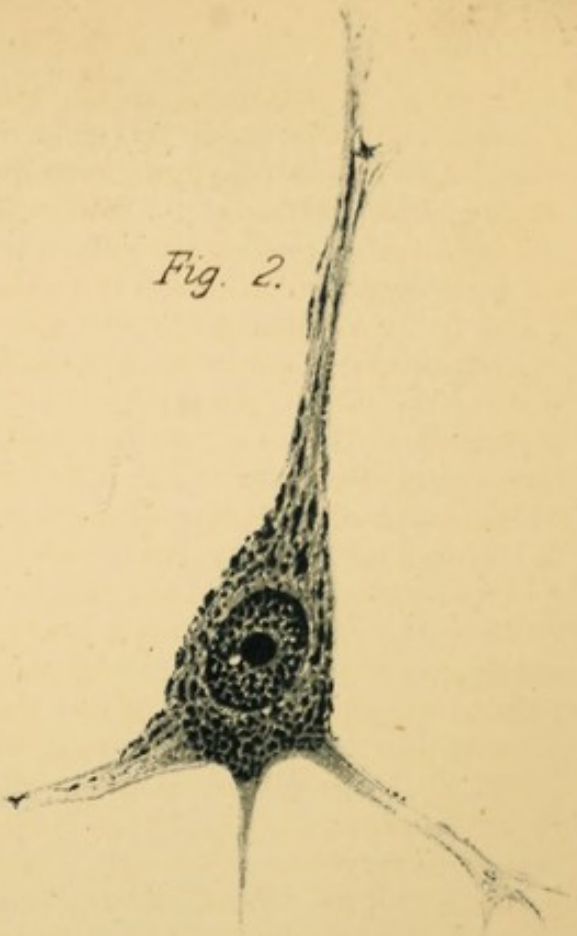


Fig. 2.

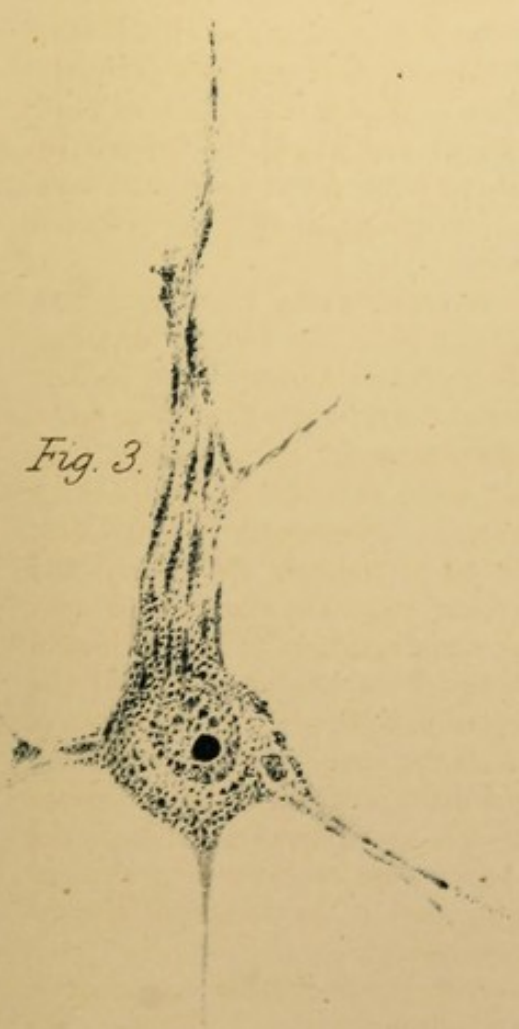


Fig. 3.

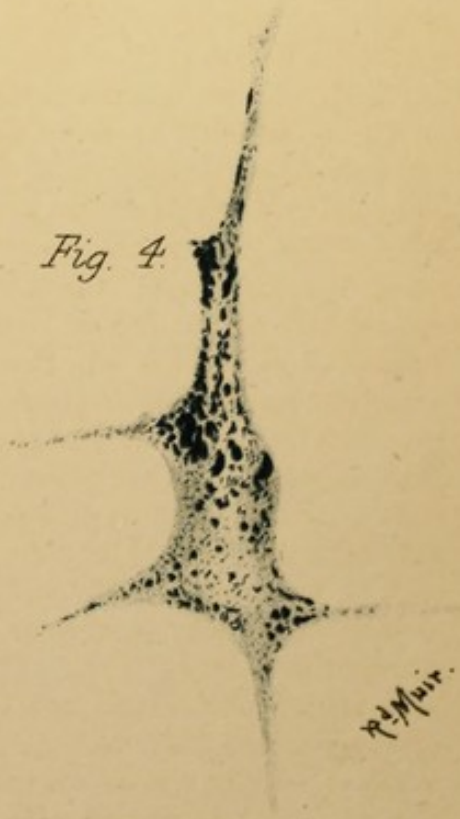


Fig. 4.

Rd. Muir.

PLATE XVII.

Fig. 1. Large pyramidal nerve-cell of cerebral cortex from same case as Figs. 2, 3, and 4 in Plate XVI., showing more advanced chromatolysis. × 700.

Fig. 2. Pyramidal nerve-cell of cerebral cortex from a case of acute delirious mania with death from exhaustion, showing advanced chromatolysis. × 700. About 50 per cent. of the cortical nerve-cells in this case showed distinct chromatolysis.

Fig. 3. Pyramidal nerve-cell of cerebral cortex from an acute case of excited melancholia, showing advanced chromatolysis. × 700. From 30 to 40 per cent. of the cortical nerve-cells were found to be affected in this case.

Fig. 4. Pyramidal nerve-cell of cerebral cortex from a case of early general paralysis, showing advanced chromatolysis. × 700. Note the displacement of the nucleus to the periphery. Only from 10 to 20 per cent. of the cortical nerve-cells showed distinct chromatolysis in this case, but a very large number of those affected presented the change in an advanced form.

COLUMBIA UNIVERSITY LIBRARY

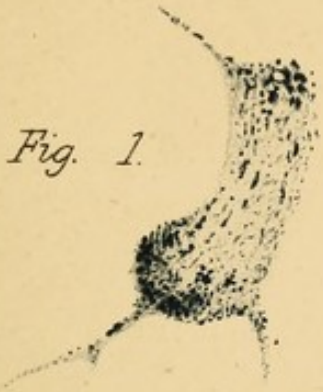


Fig. 1.

Fig. 2.

Fig. 3.

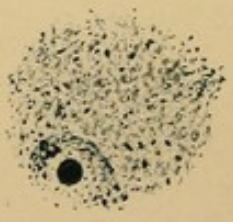


Fig. 4.

R. J. Muir.

COLUMBIA
UNIVERSITY
LIBRARY

PLATE XVIII.

The drawings in this and Plate XIX. were made from sections prepared by the Cox-Mirto modification of Golgi's method, and are intended to show the state of the neuron of brain cortex in health, and in mental disease as demonstrated by this method.

Fig. 1. Small pyramidal nerve-cell of normal human cerebral cortex. × 250.

a. Protoplasmic processes or dendrites. Note the gemmulæ or thorns.

b. Axis-cylinder process or neuraxon. Note that it is devoid of gemmulæ.

c. Collateral with branches.

Fig. 2. Axis-cylinder process of pyramidal nerve-cell of cerebral cortex from a case of acute mania, with death from exhaustion. × 250. Shows varicose hypertrophy. A large proportion of the axis-cylinder processes of the cortical nerve-cells in this case presented this change.

Varicose hypertrophy of the axis-cylinder process and varicose atrophy of the protoplasmic processes are found in much the same classes of cases as those in which chromatolysis occurs. They represent by another method what is essentially the same morbid change as chromatolysis in a somewhat advanced stage.

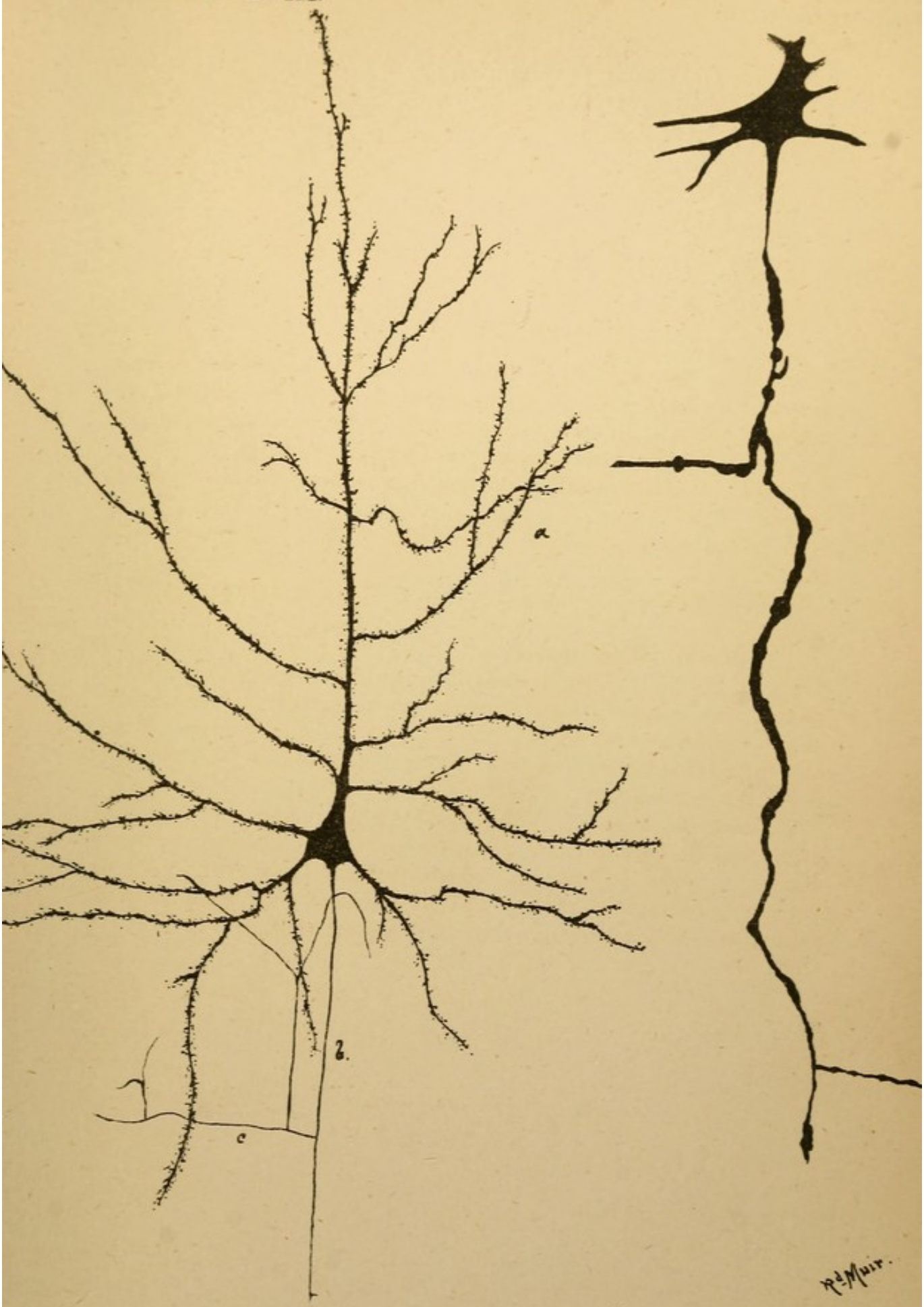


Fig. 1

Fig. 2.

PLATE XIX.

Fig. 1. Pyramidal nerve-cell from a case of acute mania with death from exhaustion. × 250. Shows varicose atrophy affecting chiefly the apical dendrites. The majority of the cells were more or less affected by this change.

Fig. 2. Pyramidal nerve-cell of cerebral cortex from same case as Fig. 1. × 250. Shows a more advanced stage of varicose atrophy.

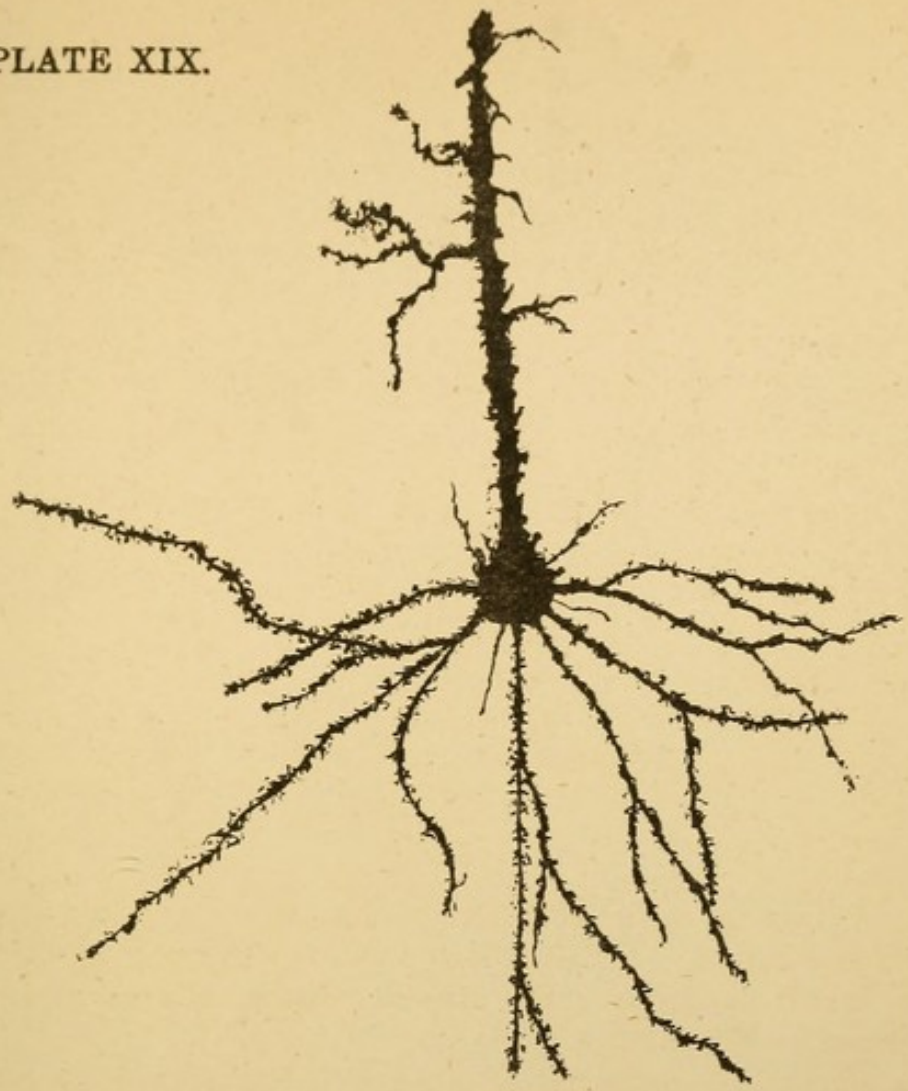


Fig. 1.

Fig. 2.

R.d Muir.

G. Waterston & Sons

No. 2A.

London, 7, Great Marlborough Street,
December, 1902.

A SELECTION

FROM

J. & A. CHURCHILL'S CATALOGUE,

COMPRISING

MOST OF THE RECENT WORKS PUBLISHED BY THEM.

N.B.—J. & A. Churchill's larger Catalogue, which contains over 600 works, with a Complete Index to their Subjects, will be sent on application.

Human Anatomy: a Treatise by various Authors. Edited by HENRY MORRIS, M.A., M.B. Lond., F.R.C.S., Surgeon to the Middlesex Hospital. Third Edition. Roy. 8vo, with 846 Illustrations, of which 267 in several colours, 30s. net.

Dissection Outlines for use with Morris's Anatomy. By WILLIAM A. CAMPBELL, B.S., M.D. Second Edition, 8vo, 3s.

Heath's Practical Anatomy: a Manual of Dissections. Ninth Edition. Edited by J. ERNEST LANE, F.R.C.S., Surgeon and Lecturer on Anatomy at St. Mary's Hospital; Examiner in Anatomy for R.C.S. Crown 8vo, with 321 Engravings. 12s. 6d.

Wilson's Anatomist's Vade-Mecum. Eleventh Edition, by HENRY E. CLARK, F.F.P.S. Glasg., Examiner in Anatomy F.P.S., and Professor of Surgery in St. Mungo's College, Glasgow. Crown 8vo, with 492 Engravings and 26 Coloured Plates, 18s.

An Atlas of Human Anatomy. By RICKMAN J. GODLEE, M.S., F.R.C.S., Surgeon and late Demonstrator of Anatomy, University College Hospital. With 48 Imp. 4to Plates (112 figures), and a volume of Explanatory Text. £4 14s. 6d. net.

Human Osteology. By LUTHER HOLDEN. Eighth Edition, edited by CHARLES STEWART, F.R.S., Conservator of the Museum R.C.S., and ROBERT W. REID, M.D., F.R.C.S., Regius Professor of Anatomy in the University of Aberdeen. 8vo, with 59 Lithographic Plates and 74 Engravings, 16s.

By the same Author.

Landmarks, Medical and Surgical. Fourth Edition. 8vo, 3s. 6d.

A Manual of Practical Anatomy. By the late Professor ALFRED W. HUGHES, Professor of Anatomy, King's College, London, and ARTHUR KEITH, M.D., Lecturer on Anatomy, London Hospital Medical College. In three Parts. Roy. 8vo. Part I., Upper and Lower Extremities, with 38 Coloured Plates and 116 Figures in the Text, 10s. 6d. Part II., with 4 Coloured Plates and 151 Figures in the Text, 8s. 6d. Part III., with 12 Coloured Plates and 204 Figures in the Text, 10s. 6d.

The Essentials of Regional Anatomy. By RICHARD J. BERRY, M.D., F.R.S., F.R.C.S. (Edin.), Lecturer on Anatomy in the New School of Medicine, Edinburgh. Second Edition. 8vo, interleaved, 5s. each net.

Anatomy of the Joints of Man. By HENRY MORRIS, Senior Surgeon to the Middlesex Hospital. With 44 Lithographic Plates (several coloured), 8vo, 16s.

A Manual of General Pathology for Students and Practitioners. By W. S. LAZARUS-BARLOW, B.A., M.D., Pathologist and Lecturer on Pathology, Westminster Hospital. 8vo, 21s.

Pathological Anatomy of Diseases. Arranged according to the nomenclature of the R.C.P. Lond. By NORMAN MOORE, M.D., F.R.C.P., Assistant Physician to St. Bartholomew's Hospital. Fcap. 8vo, with 111 Engravings, 8s. 6d.

A Manual of Clinical and Practical Pathology. By W. E. WYNTER, M.D., M.R.C.P., F.R.C.S., Medical Registrar to Middlesex Hospital, and F. J. WETHERED, M.D., M.R.C.P., Assistant Physician to Victoria Park Hospital. With 4 Coloured Plates and 67 Engravings. 8vo, 12s. 6d.

General Pathology (an Introduction to). By JOHN BLAND SUTTON, F.R.C.S., Assistant Surgeon to, and Lecturer on Anatomy at, Middlesex Hospital. 8vo, with 149 Engravings, 14s.

The Pathologist's Handbook: a Manual for the Post-mortem Room. By T. N. KELYNACK, M.D., late Demonstrator in Morbid Anatomy, Owens College, Manchester. With 126 Illustrations. Fcap. 8vo, pegamoid, 4s. 6d.

A Manual of Antenatal Pathology and Hygiene.—The Fœtus. By J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S. Edin., Lecturer on Antenatal Pathology and Teratology in the University of Edinburgh. With 69 Illustrations (14 Coloured). Roy. 8vo, 20s. net.

Selected Researches in Pathology. By A. G. AULD, M.D., M.R.C.P. With 14 Illustrations. 8vo, 6s.

The Human Brain: Histological and Coarse Methods of Research. By W. Bevan Lewis, L.R.C.P. Lond., Medical Superintendent, West Riding Lunatic Asylum. 8vo, with Wood Engravings and Photographs, 8s.

The Physiology and the Pathology of the Cerebral Circulation: an Experimental Research. By Leonard Hill, M.D., Hunterian Professor, R.C.S. With 41 Illustrations. Royal 8vo, 12s.

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. Fifth Edition. With 321 Illustrations. 8vo, 12s. 6d.

A Class-Book of Practical Physiology, including His- tology, Chemical and Experimental Physiology. By de Burgh Birch, M.D., Professor of Physiology in the Yorkshire College of the Victoria University. With 62 Illustrations, crown 8vo, 6s. 6d.

Practical Lessons in Elementary Biology, for Junior Students. By Peyton T. B. Beale, F.R.C.S., Lecturer on Elementary Biology and Demonstrator in Physiology in King's College, London. Crown 8vo, 3s. 6d.

Medical Jurisprudence: its Principles and Practice. By Alfred S. Taylor, M.D., F.R.C.P., F.R.S. Fourth Edition. By Thomas Stevenson, M.D., F.R.C.P., Lecturer on Medical Jurisprudence at Guy's Hospital. 2 vols. 8vo, 189 Engravings, 31s. 6d.

Lectures on Medical Jurisprudence and Toxicology. By Fred. J. Smith, M.D., F.R.C.P., Lecturer on Forensic Medicine and Toxicology at the London Hospital. Crown 8vo, 7s. 6d.

The Theory and Practice of Hygiene (Notter and Firth). By J. Lane Notter, M.D., Examiner in Hygiene and Public Health in the University of Cambridge and the English Conjoint Board, Professor of Hygiene in the Army Medical School; and W. H. Horrocks, M.B., B Sc., Assistant Professor of Hygiene in the Army Medical School. Second Edition. With 15 Plates and 134 other Illustrations. Royal 8vo, 25s.

Manual of Hygiene. By W. H. Hamer, M.D., D.P.H., F.R.C.P., Lecturer on Public Health, St. Bartholomew's Hospital, Assistant Medical Officer of Health of the Administrative County of London. With 93 Illustrations, 8vo, 12s 6d. net.

Public Health and Preventive Medicine. By C. J. Lewis, M.D., D.Sc. Edin., and Andrew Balfour, M.D., B.Sc. Edin., D.P.H. Camb. With 11 Plates and 189 Figures in the Text. Imp. 8vo, 25s. net.

Hygiene and Public Health: a Treatise by various Authors. Edited by THOMAS STEVENSON, M.D., and SHIRLEY F. MURPHY. In 3 vols., royal 8vo, fully Illustrated. Vol. I., 28s.; Vol. II., 32s.; Vol. III., 20s.

A Handbook of Hygiene and Sanitary Science. By GEO. WILSON, M.A., M.D., LL.D., D.P.H. Camb., Medical Officer of Health for Mid-Warwickshire. Eighth Edition. Post 8vo, with Engravings, 12s. 6d.

A Simple Method of Water Analysis, especially designed for the use of Medical Officers of Health. By JOHN C THRESH, M.D.Vic., D.Sc.Lond., D.P.H.Camb., Medical Officer of Health for the County of Essex. Third Edition. Fcap. 8vo, 2s. 6d.

Elements of Health: an Introduction to the Study of Hygiene. By LOUIS C. PARKES, M.D., D.P.H. Lond., Medical Officer of Health for Chelsea, Lecturer on Public Health at St. George's Hospital. Post 8vo, with 27 Engravings, 3s. 6d.

Diet and Food considered in relation to Strength and Power of Endurance, Training, and Athletics. By ALEXANDER HAIG, M.D., F.R.C.P. Fourth Edition. Crown 8vo, 2s.

The Prevention of Epidemics and the Construction and Management of Isolation Hospitals. By ROGER MCNEILL, M.D. Edin., D.P.H. Camb., Medical Officer of Health for the County of Argyll. 8vo, with several Hospital Plans, 10s. 6d.

Effects of Borax and Boracic Acid on the Human System. By Dr. OSCAR LIEBREICH, Professor in the University of Berlin. Second Edition. With Plates, post 4to, 2s. 6d.

A Manual of Bacteriology, Clinical and Applied. With an Appendix on Bacterial Remedies, etc. By RICHARD T. HEWLETT, M.D., Professor of General Pathology and Bacteriology in King's College, London. Second Edition. With 20 Plates and 66 Figures in the Text, post 8vo, 12s. 6d.

An Introduction to the Bacteriological Examination of Water. By W. H. HORROCKS, M.B., B.Sc.Lond., Assistant Professor of Military Hygiene in the Army Medical School, Netley; Major, Royal Army Medical Corps. With 5 Lithographic Plates. 8vo, 10s. 6d.

Hospitals and Asylums of the World: their Origin, History, Construction, Administration, Management, and Legislation. By SIR HENRY C. BURDETT, K.C.B. In 4 vols., super-royal 8vo, and Portfolio. Complete, £12 12s. net. Vols. I and II.—Asylums, £6 15s. net. Vols. III. and IV.—Hospitals, with Plans and Portfolio, £9 net.

The Insane and the Law: a Plain Guide for Medical Men, Solicitors, and Others as to the Detention and Treatment, Maintenance, Responsibility, and Capacity either to give evidence or make a will of Persons Mentally Afflicted. With Hints to Medical Witnesses and to Cross-Examining Counsel. By G. PITT-LEWIS, Q.C., R. PERCY SMITH, M.D., F.R.C.P. late Resident Physician, Bethlem Hospital, and J. A. HAWKE, B.A., Barrister-at-Law. 8vo, 14s.

Mental Diseases: Clinical Lectures. By T. S. CLOUSTON, M.D., F.R.C.P. Edin., Lecturer on Mental Diseases in the University of Edinburgh. Fifth Edition. Cr. 8vo, with 19 Plates, 14s.

A Dictionary of Psychological Medicine, giving the Definition, Etymology, and Synonyms of the Terms used in Medical Psychology; with the Symptoms, Treatment, and Pathology of Insanity; and THE LAW OF LUNACY IN GREAT BRITAIN AND IRELAND. Edited by D. HACK TUKE, M.D., LL.D., assisted by nearly 130 Contributors, British, Continental, and American. 2 vols. 1,500 pages, royal 8vo, Illustrated, 42s.

The Force of Mind; or, the Mental Factor in Medicine. By ALFRED T. SCHOFIELD, M.D., Hon. Physician to Friedenheim Hospital. Second Edition. Crown 8vo, 5s. net.

The Mental Affections of Children, Idiocy, Imbecility, and Insanity. By WM. W. IRELAND, M.D. Edin., formerly Medical Superintendent of the Scottish Institution for the Education of Imbecile Children. Second Edition. With 21 Plates, 8vo, 14s.

Mental Affections of Childhood and Youth (LETTSOMIAN Lectures for 1887, etc.). By J. LANGDON-DOWN, M.D., F.R.C.P., Consulting Physician to the London Hospital. 8vo, 6s.

The Journal of Mental Science. PUBLISHED QUARTERLY, by Authority of the Medico-Psychological Association. 8vo, 5s.

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., Obstetric Physician and Lecturer on Midwifery and Diseases of Women to Guy's Hospital. Fifth Edition. Post 8vo, with 298 Engravings, 15s.

The Practice of Midwifery: a Guide for Practitioners and Students. By D. LLOYD ROBERTS, M.D., F.R.C.P., Lecturer on Clinical Midwifery and Diseases of Women at the Owens College; Consulting Obstetric Physician to the Manchester Royal Infirmary. Fourth Edition. Fcap. 8vo, with Coloured Plates and 226 Wood Engravings, 10s. 6d.

Obstetric Aphorisms: for the Use of Students com- mencing Midwifery Practice. By JOSEPH G. SWAYNE, M.D., Lecturer on Midwifery in the Bristol Medical School. Tenth Edition. Fcap. 8vo, with 20 Engravings. 3s. 6d.

A Short Practice of Midwifery, embodying the Treatment adopted in the Rotunda Hospital, Dublin. By HENRY JELLETT, M.D., B.A.O. Dub., late Assistant Master, Rotunda Hospital. Third Edition. With 124 Illustrations. Crown 8vo, 8s. 6d.

By the same Author.

A Short Practice of Midwifery for Nurses. With 67 Illustrations. Crown 8vo, 6s.

Lectures on Obstetric Operations: including the Treatment of Hæmorrhage, and forming a Guide to the Management of Difficult Labour. By ROBERT BARNES, M.D., F.R.C.P., Consulting Obstetric Physician to St. George's Hospital. Fourth Edition. 8vo, with 121 Engravings, 12s. 6d.

By the same Author.

A Clinical History of Medical and Surgical Diseases of Women. Second Edition. 8vo, with 181 Engravings, 28s.

Outlines of Gynæcological Pathology and Morbid Anatomy. By C. HUBERT ROBERTS, M.D. Lond., Physician to the Samaritan Free Hospital for Women. With 151 Illustrations. 8vo, 21s.

Diseases of Women. (Student's Guide Series.) By ALFRED L. GALABIN, M.A., M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women at, Guy's Hospital. Fifth Edition Fcap. 8vo, with 142 Engravings, 8s. 6d.

A Short Practice of Gynæcology. By HENRY JELLETT, M.D., B.A.O. Dub., late Assistant Master, Rotunda Hospital, Dublin. With 125 Illustrations. Crown 8vo, 7s. 6d.

Manual of the Diseases peculiar to Women. By JAMES OLIVER, M.D., F.R.S.E., M.R.C.P., Physician to the Hospital for Diseases of Women, London. Fcap. 8vo, 3s. 6d.

By the same Author.

Abdominal Tumours and Abdominal Dropsy in Women. Crown 8vo, 7s. 6d.

Sterility. By ROBERT BELL, M.D., F.F.P. & S. Glasg., Senior Physician to the Glasgow Hospital for Diseases peculiar to Women. 8vo, 5s.

Nursing, General, Medical, and Surgical, with Appendix on Sick-room Cookery. By WILFRED J. HADLEY, M.D., F.R.C.P., Physician to the London Hospital. Crown 8vo, 3s. 6d.

A Manual for Hospital Nurses and Others engaged in Attending on the Sick, with a Glossary. By EDWARD J. DOMVILLE, Surgeon to the Devon and Exeter Hospital. Eighth Edition. Crown 8vo, 2s. 6d.

A Short Manual for Monthly Nurses. By CHARLES J. CULLINGWORTH, M.D., F.R.C.P., Obstetric Physician to St. Thomas's Hospital. Revised by the Author, with the assistance of M. A. ATKINSON, Matron of the General Lying-in Hospital, Lambeth. Fifth Edition. Fcap. 8vo, 1s. 6d.

Lectures on Medicine to Nurses. By HERBERT E. CUFF, M.D., F.R.C.S., Medical Superintendent, North-Eastern Fever Hospital, London. Third Edition. With 29 Illustrations. Crown 8vo, 3s. 6d.

Antiseptic Principles for Nurses. By C. E. RICHMOND, F.R.C.S. Fcap. 8vo, 1s.

A Practical Treatise on Disease in 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, etc. Second Edition. 8vo, 22s.

By the same Author.

Clinical Studies of Disease in Children. Second Edition. Post 8vo, 7s. 6d.

Also.

The Wasting Diseases of Infants and Children. Sixth (cheap) Edition. Post 8vo, 6s.

The Diseases of Children. By JAS. F. GOODHART, M.D, F.R.C.P. Seventh Edition, with the assistance of G. F. STILL, M.D., F.R.C.P., Assistant Physician to the Hospital for Sick Children, Great Ormond Street. 8vo, 12s. 6d. net.

On the Natural and Artificial Methods of Feeding Infants and Young Children. By EDMUND CAUTLEY, M.D., Physician to the Belgrave Hospital for Children. Crown 8vo, 7s. 6d.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. HALE WHITE, M.D., F.R.C.P., Physician to, and Lecturer on Pharmacology and Therapeutics at, Guy's Hospital. Seventh Edition, based upon the B.P. of 1898 and on the Indian and Colonial Addendum. Fcap. 8vo, 7s. 6d.

Materia Medica and Therapeutics. By CHARLES D. F. PHILLIPS, M.D., LL.D., F.R.S. Edin.

Vegetable Kingdom—Organic Compounds—Animal Kingdom. 25s.

Inorganic Substances. Second Edition. 8vo, 21s.

An Introduction to the Study of Materia Medica, designed for Students of Pharmacy and Medicine. By HENRY G. GREENISH, F.I.C., F.L.S., Professor of Pharmaceutics to the Pharmaceutical Society. With 213 Illustrations, 8vo, 15s.

Practical Pharmacy: an Account of the Methods of Manufacturing and Dispensing Pharmaceutical Preparations; with a Chapter on the Analysis of Urine. By E. W. LUCAS, F.C.S., Examiner at the Pharmaceutical Society. With 283 Illustrations, roy. 8vo, 12s. 6d.

Galenic Pharmacy: a Practical Handbook to the Processes of the British Pharmacopœia. By R. A. CRIPPS, M.P.S. 8vo, with 76 Engravings, 8s. 6d.

Practical Pharmacy. By BARNARD S. PROCTOR. Third Edition. 8vo, with 44 Engravings and 32 Fac-Simile Prescriptions, 14s.

The Galenical Preparations of the British Pharma- copœia: a Handbook for Medical and Pharmaceutical Students. By C. O. HAWTHORNE, M.D., C.M., late Lecturer on Materia Medica and Therapeutics, Queen Margaret's College, Glasgow. 8vo, 4s. 6d.

The Pharmaceutical Formulary: a Synopsis of the British and Foreign Pharmacopœias. By HENRY BEASLEY. Twelfth Edition by J. OLDHAM BRAITHWAITE. 18mo, 6s. 6d.

By the same Author.

The Druggist's General Receipt-Book. Tenth Edition. 18mo, 6s. 6d.

Also.

The Book of Prescriptions: containing upwards of 3,000 Prescriptions collected from the Practice of the most eminent Physicians and Surgeons, English and Foreign. Seventh Edition, 18mo, 6s. 6d.

A Companion to the British Pharmacopœia. By PETER SQUIRE. Revised by PETER WYATT SQUIRE, F.L.S., F.C.S. Seventeenth Edition. 8vo, 12s. 6d.

By the same Authors.

The Pharmacopœias of Thirty of the London Hospitals, arranged in Groups for Comparison. Seventh Edition. Fcap. 8vo, 6s.

Pereira's Selecta è Prescriptis: containing Lists of Terms used in Prescriptions, with Explanatory Notes, etc. Also, a Series of Abbreviated Prescriptions and Key to the same Eighteenth Edition. By JOSEPH INCE, F.C.S., F.L.S. 24mo, 5s.

Southall's Organic Materia Medica, adapted to the B P of 1898. Edited by JOHN BARCLAY, B.Sc. Lond. Sixth Edition. Crown 8vo, 7s. 6d.

Year-Book of Pharmacy: containing the Transactions of the British Pharmaceutical Conference. Annually. 8vo, 10s.

Manual of Botany, in two Vols., crown 8vo. By J. REYNOLDS GREEN, Sc.D., M.A., F.R.S., Professor of Botany to the Pharmaceutical Society.

Vol. I.: Morphology and Anatomy. Second Edition. With 778 Engravings, 7s. 6d.

Vol. II.: Classification and Physiology. Second Edition. With 466 Engravings, 10s.

By the same Author.

An Introduction to Vegetable Physiology. With 184 Illustrations. 8vo, 10s. 6d.

The Student's Guide to Systematic Botany, including the Classification of Plants and Descriptive Botany. By ROBERT BENTLEY, late Emeritus Professor of Botany in King's College and to the Pharmaceutical Society. Fcap. 8vo, with 350 Engravings, 3s. 6d.

Medicinal Plants: being Descriptions with original figures, of the Principal Plants employed in Medicine, and an account of their Properties and Uses. By Prof. BENTLEY and Dr. H. TRIMEN, F.R.S. In 4 vols, large 8vo, with 306 Coloured Plates, bound in Half Morocco, Gilt Edges, £11 11s. net; or with Plates not Coloured, cloth binding, £5 5s. net.

Therapeutic Electricity and Practical Muscle-Testing. By W. S. HEDLEY, M.D., in charge of the Electro-therapeutic Department of the London Hospital. With 110 Illustrations. Roy 8vo, 8s. 6d.

Practical Therapeutics: a Manual. By EDWARD J. WARING, C.I.E., M.D., F.R.C.P., and DUDLEY W. BUXTON, M.D., B.S. Lond. Fourth Edition. Crown 8vo, 14s.

By the same Author.

Bazaar Medicines of India, and Common Medical Plants. With Full Index of Diseases, indicating their Treatment by these and other Agents procurable throughout India, etc. Fifth Edition. Fcap. 8vo, 5s.

Climate and Fevers of India, with a Series of Cases (Croonian Lectures, 1882). By Sir JOSEPH FAYRER, Bart., K.C.S.I., M.D. 8vo, with 17 Temperature Charts, 12s.

The Malarial Fevers of British Malaya. By HAMILTON WRIGHT, M.D. (McGILL). Director of the Institute for Medical Research, Federated Malay States. With Map and Charts, roy. 8vo, 3s. net.

Psilosis, or "Sprue"; Its Nature and Treatment, with Observations on Various Forms of Diarrhœa acquired in the Tropics. By GEORGE THIN, M.D. Second and Enlarged Edition, with Illustrations. 8vo, 10s.

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., late Surgeon-General with the Government of Bombay. Sixth Edition. Post 8vo, with 71 Engravings, 12s.

By the same Author.

A Manual of the Diseases of India: with a Compendium of Diseases generally Second Edition. Post 8vo, 10s.

The Prevention of Disease in Tropical and Sub-Tropical Campaigns. (Parkes Memorial Prize for 1886.) By Lieut.-Col. ANDREW DUNCAN, M.D., B.S.Lond., F.R.C.S., Indian Medical Service. 8vo, 12s. 6d.

A Commentary on the Diseases of India. By NORMAN CHEVERS, C.I.E., M.D., F.R.C.S., Deputy Surgeon-General, H.M. Indian Army. 8vo, 24s.

Hooper's Physicians' Vade-Mecum: a Manual of the Principles and Practice of Physic. Tenth Edition. By W. A. GUY, F.R.C.P., F.R.S., and J. HARLEY, M.D., F.R.C.P. With 118 Engravings. Fcap. 8vo, 12s. 6d.

A Text-Book of Medicine. Begun by the late C. HILTON FAGGE, M.D., and completed and rewritten by P. H. PYE-SMITH, M.D., F.R.S. Fourth Edition. 2 vols., roy. 8vo, 42s.

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. Sixth Edition. 8vo, with Engravings, 16s.

A Dictionary of Practical Medicine. By various writers. Edited by JAS. KINGSTON FOWLER, M.A., M.D., F.R.C.P., Physician to Middlesex Hospital and the Hospital for Consumption. 8vo, 21s.

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. Crown 8vo, with Engravings on Copper and Wood, 10s.

A Text-Book of Bacteriology for Students and Practitioners of Medicine. By G. M. STERNBERG, M.D., Surgeon-General, U.S. Army. Second Edition. With 9 Plates and 198 Figures in the Text. 8vo, 26s.

How to Examine the Chest: a Practical Guide for the use of Students. By SAMUEL WEST, M.D., F.R.C.P., Assistant Physician to St. Bartholomew's Hospital. Third Edition. With 46 Engravings. Fcap. 8vo, 5s.

An Atlas of the Pathological Anatomy of the Lungs. By the late WILSON FOX, M.D., F.R.S., F.R.C.P., Physician to H.M. the Queen. With 45 Plates (mostly Coloured) and Engravings. 4to, half-bound in Calf, 70s. net.

By the same Author.

A Treatise on Diseases of the Lungs and Pleura. Edited by SIDNEY COUPLAND, M.D., F.R.C.P., Physician to Middlesex Hospital. Roy. 8vo, with Engravings; also Portrait and Memoir of the Author, 36s. net.

The Student's Guide to Diseases of the Chest. By VINCENT D. HARRIS, M.D. Lond., F.R.C.P., Physician to the City of London Hospital for Diseases of the Chest, Victoria Park. Fcap. 8vo, with 55 Illustrations (some Coloured), 7s. 6d.

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. Fourth Edition. 8vo, with Illustrations, 6s.

Guy's Hospital Reports. By the Medical and Surgical Staff. Vol. XL. Third Series. 8vo, 10s. 6d.

St. Thomas's Hospital Reports. By the Medical and Surgical Staff. Vol. XXIX. New Series. 8vo, 8s. 6d.

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. 8vo, 15s.

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. Crown 8vo, with 139 Engravings, 9s.

By the same Authors.

Outlines of Medical Treatment. Fourth Edition. Crown 8vo, with 35 Engravings, 10s.

Also.

Ulcer of the Stomach and Duodenum. With 55 Illustrations. Roy. 8vo, 10s. 6d.

Also.

Cancer and other Tumours of the Stomach. With 70 Illustrations. Roy. 8vo, 10s. 6d.

Also, by Dr. Samuel Fenwick.

Clinical Lectures on some Obscure Diseases of the Abdomen delivered at the London Hospital. 8vo, with Engravings, 7s. 6d.

Also.

The Saliva as a Test for Functional Diseases of the Liver. Crown 8vo, 2s.

The Liver. By LIONEL S. BEALE, M.B., F.R.S., Consulting Physician to King's College Hospital. With 24 Plates (85 Figures). 8vo, 5s.

By the same Author.

On Slight Ailments: and on Treating Disease. Fourth Edition. 8vo, 5s.

The Blood; How to Examine and Diagnose its Diseases. By ALFRED C. COLES, M.D., B.Sc. Second Edition. With 6 Coloured Plates. 8vo, 10s. 6d.

The Physiology of the Carbohydrates; their Application as Food and Relation to Diabetes. By F. W. PAVY, M.D., LL.D., F.R.S., F.R.C.P., Consulting Physician to Guy's Hospital. Royal 8vo, with Plates and Engravings, 10s. 6d.

Medical Lectures and Essays. By SIR G. JOHNSON, M.D., F.R.C.P., F.R.S., Consulting Physician to King's College Hospital. 8vo, with 46 Engravings, 25s.

By the same Author.

An Essay on Asphyxia (Apnœa). 8vo, 3s.

Uric Acid as a Factor in the Causation of Disease. By ALEXANDER HAIG, M.D., F.R.C.P., Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Fifth Edition. 8vo, with 75 Illustrations, 14s.

Bronchial Asthma: its Pathology and Treatment. By J. B. BERKART, M.D., late Physician to the City of London Hospital for Diseases of the Chest. Second Edition, with 7 Plates (35 Figures). 8vo, 10s. 6d.

Treatment of Some of the Forms of Valvular Disease of the Heart. By A. E. SANSOM, M.D., F.R.C.P., Physician to the London Hospital. Second Edition. Fcap. 8vo, with 26 Engravings, 4s. 6d.

Medical Ophthalmoscopy: a Manual and Atlas. By SIR WILLIAM R. GOWERS, M.D., F.R.C.P., F.R.S. Third Edition. Edited with the assistance of MARCUS GUNN, M.B., F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital. With Coloured Plates and Woodcuts. 8vo, 16s.

By the same Author.

A Manual of Diseases of the Nervous System.

VOL. I.—**Diseases of the Nerves and Spinal Cord.** Third Edition, by the Author and JAMES TAYLOR, M.D., F.R.C.P. Roy. 8vo, with 192 Engravings, 15s.

VOL II.—**Diseases of the Brain and Cranial Nerves:** General and Functional Diseases of the Nervous System. Second Edition. Roy. 8vo, with 182 Engravings, 20s.

Also.

Clinical Lectures on Diseases of the Nervous System. 8vo, 7s. 6d.

Also.

Epilepsy and other Chronic Convulsive Diseases: their Causes, Symptoms, and Treatment. Second Edition. 8vo, 10s. 6d.

Also.

Diagnosis of Diseases of the Brain. Second Edition. 8vo, with Engravings, 7s. 6d.

Also.

Syphilis and the Nervous System: being a Revised Reprint of the Lettsomian Lectures for 1890. Delivered before the Medical Society of London. 8vo, 4s.

The Nervous System, Diseases of. By J. A. ORMEROD, M.D., F.R.C.P., Physician to the National Hospital for the Paralysed and Epileptic. With 66 Illustrations. Fcap. 8vo, 8s. 6d.

Text-Book of Nervous Diseases for Students and Practitioners of Medicine. By CHARLES L. DANA, M.D., Professor of Nervous and Mental Diseases in Bellevue Hospital Medical College, New York. Fourth Edition, with 246 Illustrations. 8vo, 20s.

Diseases of the Nervous System. Lectures delivered at Guy's Hospital. By Sir SAMUEL WILKS, Bart., M.D., F.R.S. Second Edition. 8vo, 18s.

Handbook of the Diseases of the Nervous System. By JAMES ROSS, M.D, F.R.C.P., late Professor of Medicine in the Victoria University, and Physician to the Royal Infirmary, Manchester. Roy. 8vo, with 184 Engravings, 18s.

Stammering: its Causes, Treatment, and Cure. By A. G. BERNARD, M.R.C.S., L.R.C.P. Crown 8vo, 2s.

Secondary Degenerations of the Spinal Cord (Gulstonian Lectures, 1889). By HOWARD H. TOOTH, M.D., F.R.C.P., Assistant Physician to the National Hospital for the Paralysed and Epileptic. With Plates and Engravings. 8vo, 3s. 6d.

Diseases of the Nervous System. Clinical Lectures. By THOMAS BUZZARD, M.D., F.R.C.P., Physician to the National Hospital for the Paralysed and Epileptic With Engravings, 8vo, 15s.

By the same Author.

Some Forms of Paralysis from Peripheral Neuritis; of Gouty, Alcoholic, Diphtheritic, and other origin. Crown 8vo, 5s.

Also.

On the Simulation of Hysteria by Organic Disease of the Nervous System. Crown 8vo, 4s. 6d.

On the Typhoid Bacillus and Typhoid Fever, being the Goulstonian Lectures delivered before the Royal College of Physicians, in March, 1900, by P. HORTON-SMITH, M.D., F.R.C.P. With Illustrations. 8vo, 2s. 6d.

Gout in its Clinical Aspects. By J. MORTIMER GRANVILLE, M.D. Crown 8vo, 6s.

Diseases of the Liver: with and without Jaundice. By GEORGE HARLEY, M.D., F.R.C.P., F.R.S. 8vo, with 2 Plates and 36 Engravings, 21s.

Rheumatic Diseases (Differentiation in). By HUGH LANE, Surgeon to the Royal Mineral Water Hospital, Bath. Second Edition, with 8 Plates. Crown 8vo, 3s. 6d.

Diseases of the Abdomen, comprising those of the Stomach and other parts of the Alimentary Canal, Œsophagus, Cæcum, Intestines, and Peritoneum. By S. O. HABERSHON, M.D., F.R.C.P. Fourth Edition. 8vo, with 5 Plates, 21s.

On Gallstones, or Cholelithiasis. By E. M. BROCKBANK, M.D. Vict., M.R.C.P. Lond., Honorary Physician to the Ancoats Hospital, Manchester. Crown 8vo, 7s.

Obstinate Hiccough; the Physiology, Pathology, and Treatment, based on a collection of over 150 Cases from British and Foreign Works. By L. F. B. KNUTHSEN, M.D. Edin. Roy. 8vo, 6s.

Headaches: their Nature, Causes, and Treatment. By W. H. DAY, M.D., Physician to the Samaritan Hospital. Fourth Edition. Crown 8vo, with Engravings, 7s. 6d.

A Handbook of Medical Climatology, embodying its Principles and Therapeutic Application, with Scientific Data of the chief Health Resorts of the World. By S. EDWIN SOLLY, M.D., M.R.C.S., late President of the American Climatological Association. With Engravings and Coloured Plates. 8vo, 16s.

The Mineral Waters of France, and its Wintering Stations (Medical Guide to). With a Special Map. By A. VINTRAS, M.D., Physician to the French Embassy, and to the French Hospital, London. Second Edition. Crown 8vo, 8s.

Surgery: its Theory and Practice. By WILLIAM J. WALSHAM, F.R.C.S., Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital. Seventh Edition. Post 8vo, with 483 Engravings, 15s.

A Synopsis of Surgery. By R. F. TOBIN, Surgeon to St. Vincent's Hospital, Dublin. Second Edition. Crown 8vo, interleaved, leather binding, 6s. 6d.

Surgical Emergencies: together with the Emergencies attendant on Parturition and the Treatment of Poisoning. By PAUL SWAIN, F.R.C.S., Surgeon to the South Devon and East Cornwall Hospital. Fifth Edition. Crown 8vo, with 149 Engravings, 6s.

Illustrated Ambulance Lectures: (to which is added a NURSING LECTURE) in accordance with the Regulations of the St. John's Ambulance Association for Male and Female Classes. By JOHN M. H. MARTIN, M.D., F.R.C.S., Hon. Surgeon to the Blackburn Infirmary. Fourth Edition. Crown 8vo, with 60 Engravings, 2s.

Operations on the Brain (a Guide to). By ALEC FRASER, Professor of Anatomy, Royal College of Surgeons in Ireland. Illustrated by 42 life-size Plates in Autotype, and 2 Woodcuts in the text. Folio, 63s. net.

Abdominal Surgery. By J. GREIG SMITH, M.A., F.R.S.E. Sixth Edition. Edited by JAMES SWAIN, M.S., M.D. Lond., F.R.C.S. Eng., Assistant-Surgeon to the Bristol Royal Infirmary, Professor of Surgery, University College, Bristol. 2 vols., 8vo, with 224 Engravings, 36s.

The Physiology of Death from Traumatic Fever: a Study in Abdominal Surgery. By JOHN D. MALCOLM, M.B., C.M., F.R.C.S.E., Surgeon to the Samaritan Free Hospital. 8vo, 3s. 6d.

Surgery. By C. W. MANSELL MOULLIN, M.A., M.D. Oxon., F.R.C.S., Surgeon and Lecturer on Physiology to the London Hospital. Large 8vo, with 497 Engravings, 34s.

A Course of Operative Surgery. By CHRISTOPHER HEATH, Surgeon to University College Hospital. Second Edition. With 20 Coloured Plates (180 Figures) from Nature, by M. LÉVEILLÉ, and several Woodcuts. Large 8vo, 30s. net.

By the same Author.

The Student's Guide to Surgical Diagnosis. Second Edition. Fcap. 8vo, 6s. 6d.

Also.

A Manual of Minor Surgery and Bandaging. For the use of House-Surgeons, Dressers, and Junior Practitioners. Twelfth Edition. Revised by BILTON POLLARD, F.R.C.S., Surgeon to University College Hospital. Fcap. 8vo, with 195 Engravings, 6s. 6d.

Also.

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. 8vo, with 187 Wood Engravings, 14s.

Also.

Clinical Lectures on Surgical Subjects, delivered at University College Hospital. First Series, 6s.; Second Series, 6s.

Hare-lip and Cleft Palate. By R. W. MURRAY, F.R.C.S., Surgeon, David Lewis Northern Hospital, Liverpool, late Surgeon, Liverpool Infirmary for Children. With 25 Illustrations. 8vo, 3s.

The Practice of Surgery: a Manual. By THOMAS BRYANT, Consulting Surgeon to Guy's Hospital. Fourth Edition. 2 vols. crown 8vo, with 750 Engravings (many being Coloured), and including 6 chromo plates, 32s.

The Surgery of the Alimentary Canal. By ALFRED ERNEST MAYLARD, M.B. Lond. and B.S., Surgeon to the Victoria Infirmary, Glasgow. With 27 Swantype Plates and 89 Figures in the Text. 8vo, 25s.

By the same Author.

A Student's Handbook of the Surgery of the Alimentary Canal. With 97 Illustrations. Crown 8vo, 8s. 6d.

The Surgeon's Vade-Mecum: a Manual of Modern Surgery. By R. DRUITT, F.R.C.S. Twelfth Edition. By STANLEY BOYD, M.B., F.R.C.S. Crown 8vo, with 373 Engravings, 16s.

The Operations of Surgery: intended for use on the Dead and Living Subject alike. By W. H. A. JACOBSON, M.Ch. Oxon., F.R.C.S., Surgeon, Guy's Hospital, and F. J. STEWARD, M.S. Lond., F.R.C.S., Assistant Surgeon, Guy's Hospital. Fourth Edition. 2 vols., royal 8vo, with 550 Illustrations, 42s.

Clinical Essays and Lectures. By HOWARD MARSH, F.R C.S., Surgeon to, and late Lecturer on Surgery at, St. Bartholomew's Hospital. With 26 Illustrations, 8vo, 7s. 6d.

Ovariotomy and Abdominal Surgery. By HARRISON CRIPPS, F.R.C.S., Surgical Staff, St. Bartholomew's Hospital. With numerous Plates, royal 8vo, 25s.

Diseases of Bones and Joints. By CHARLES MACNAMARA, F.R.C.S., Surgeon to, and Lecturer on Surgery at, the Westminster Hospital. 8vo, with Plates and Engravings, 12s.

Surgical Pathology and Morbid Anatomy. By ANTHONY A. BOWLBY, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital. Fourth Edition. Crown 8vo, with 186 Engravings, 10s. 6d.

By the same Author.

Injuries and Diseases of Nerves, and their Surgical Treatment. 8vo, with 20 Plates, 14s.

Chloroform; a Manual for Students and Practitioners. By EDWARD LAWRIE, M.B. Edin., Lieut.-Col. I.M.S., Residency Surgeon, Hyderabad. Illustrated. Crown 4to, 5s. net.

A Pocket Guide to Anæsthetics for the Student and General Practitioner. By THOMAS D. LUKE, M.B., F.R.C.S. Edin. With 43 Engravings, crown 8vo, 5s. net.

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, and Lecturer on Surgery at the London School of Medicine for Women. With 121 Illustrations. 8vo, 14s.

The Human Foot: its Form and Structure, Functions and Clothing. By THOMAS S. ELLIS, Consulting Surgeon to the Gloucester Infirmary. With 7 Plates and Engravings (50 Figures). 8vo, 7s. 6d.

Short Manual of Orthopædy. By HEATHER BIGG, F.R.C.S. Ed., Part I. Deformities and Deficiencies of the Head and Neck. 8vo, 2s. 6d.

Face and Foot Deformities. By FREDERICK CHURCHILL, C.M. 8vo, with Plates and Illustrations, 10s. 6d.

Royal London Ophthalmic Hospital Reports. By the Medical and Surgical Staff. Vol. XIV., Part 2. 8vo, 5s.

Ophthalmological Society of the United Kingdom. Transactions. Vol. XX. 8vo, 12s. 6d.

Manual of Ophthalmic Surgery and Medicine. By W. H. H. JESSOP, M.A., F.R.C.S., Ophthalmic Surgeon to St. Bartholomew's Hospital With 5 Coloured Plates and 110 Woodcuts. Crown 8vo, 9s. 6d.

Nettleship's Diseases of the Eye. Sixth Edition. Revised and Edited by Mr. T. HOLMES SPICER, M.B., F.R.C.S., Ophthalmic Surgeon to St. Bartholomew's Hospital and the Victoria Hospital for Children. With 161 Engravings and a Coloured Plate illustrating Colour-Blindness, 8s. 6d.

Diseases and Refraction of the Eye. By N. C. MACNAMARA, F.R.C.S., Surgeon to Westminster Hospital, and GUSTAVUS HARTRIDGE, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital. Fifth Edition. Crown 8vo, with Plate, 156 Engravings, also Test-types, 10s. 6d.

On Diseases and Injuries of the Eye: a Course of Syste- matic and Clinical Lectures to Students and Medical Practitioners. By J. R. WOLFE, M.D., F.R.C.S.E. With 10 Coloured Plates and 157 Wood Engravings. 8vo, 21s.

Elementary Ophthalmic Optics, including Ophthalmo- scopy and Retinoscopy. By J. HERBERT PARSONS, B.S., B.Sc., F.R.C.S., Curator, Royal London Ophthalmic Hospital. With 66 Illustrations. 8vo, 6s. 6d.

Normal and Pathological Histology of the Human Eye and Eyelids. By C. FRED. POLLOCK, M.D., F.R.C.S., and F.R.S.E., Surgeon for Diseases of the Eye to Anderson's College Dispensary, Glasgow. Crown 8vo, with 100 Plates (230 drawings), 15s.

Atlas of Ophthalmoscopy. Composed of 12 Chromo-lithographic Plates (59 Figures drawn from nature) and Explanatory Text. By RICHARD LIEBREICH, M.R.C.S. Translated by H. ROSBOROUGH SWANZY, M.B. Third Edition, 4to, 40s. net.

Refraction of the Eye: a Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital. Eleventh Edition. Crown 8vo, with 105 Illustrations, also Test-types, etc., 6s.

By the same Author.

The Ophthalmoscope: a Manual for Students. Fourth Edition. Crown 8vo, with 65 Illustrations and 4 Plates, 4s. 6d.

Glaucoma: its Pathology and Treatment. By PRIESTLEY SMITH, Ophthalmic Surgeon to the Queen's Hospital, Birmingham. 8vo, with 64 Engravings and 12 Zinco-photographs. 7s. 6d.

Methods of Operating for Cataract and Secondary Impairments of Vision, with the results of 500 cases. By Major G. H. FINK, H.M. Indian Medical Service. Crown 8vo, with 15 Engravings, 5s.

Diseases of the Eye: a Practical Handbook for General Practitioners and Students. 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. Crown 8vo, 3s. 6d.

The Accessory Sinuses of the Nose; Their Surgical Anatomy and the Diagnosis and Treatment of their Inflammatory Affections. By A. LOGAN TURNER, M.D. Edin., F.R.C.S. Edin., Surgeon for Diseases of the Ear and Throat, Deaconess Hospital, Edinburgh. With 40 Plates, 81 Figures. Imp. 8vo, 12s. 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, which conduce to Aural Disease (a Treatise). By T. MARK HOVELL, Senior Aural Surgeon to the London Hospital, and Lecturer on Diseases of the Throat in the College. Second Edition. 8vo, with 128 Engravings, 21s.

Diseases and Injuries of the Ear. By Sir WILLIAM B. DALBY, F.R.C.S., M.B., Consulting Aural Surgeon to St. George's Hospital. Fourth Edition. Crown 8vo, with 8 Coloured Plates and 38 Wood Engravings. 10s. 6d.

By the same Author.

Short Contributions to Aural Surgery, between 1875 and 1896 Third Edition 8vo, with Engravings, 5s.

A System of Dental Surgery. By Sir JOHN TOMES, F.R.S., and C. S. TOMES, M.A., F.R.S. Fourth Edition. Post 8vo, with 289 Engravings, 16s.

Dental Anatomy, Human and Comparative: a Manual. By CHARLES S. TOMES, M.A., F.R.S. Fifth Edition. Post 8vo, with 263 Engravings, 14s.

The Cause and Prevention of Decay in Teeth: an Investigation. By J. SIM WALLACE, M.D, D.Sc., L.D.S.R.C.S Second Edition. 8vo, 5s.

Dental Materia Medica, Pharmacology and Therapeutics. By CHARLES W. GLASSINGTON, M.R.C.S., L.D.S. Edin.; Senior Dental Surgeon, Westminster Hospital; Dental Surgeon, National Dental Hospital, and Lecturer on Dental Materia Medica and Therapeutics to the College. Crown 8vo, 6s.

Dental Medicine: a Manual of Dental Materia Medica and Therapeutics. By FERDINAND J. S. GORGAS, M.D., D.D.S., Professor of the Principles of Dental Science in the University of Maryland. Sixth Edition. 8vo, 18s.

A Manual of Dental Metallurgy. By ERNEST A. SMITH, F.I.C., Assistant Instructor in Metallurgy, Royal College of Science, London. With 37 Illustrations. Crown 8vo, 6s. 6d.

A Manual of Nitrous Oxide Anæsthesia. By J. FREDERICK W. SILK, M.D. Lond., M.R.C.S., Assistant Anæsthetist to Guy's Hospital, Anæsthetist to the Dental School of Guy's Hospital, and to the Royal Free Hospital. 8vo, with 26 Engravings, 5s.

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. Royal 8vo. With 690 Engravings, 22s.

A Handbook on Leprosy. By S. P. Impey, M.D., M.C., late Chief and Medical Superintendent, Robben Island Leper and Lunatic Asylums, Cape Colony, South Africa. With 38 Plates and a Map, 8vo, 12s.

Diseases of the Skin (Introduction to the Study of). By P. H. Pye-Smith, M.D., F.R.S., F.R.C.P., Physician to Guy's Hospital. Crown 8vo, with 26 Engravings, 7s. 6d.

A Manual of Diseases of the Skin, with an Analysis of 20,000 Consecutive Cases and a Formulary. By Duncan L. Bulkley, M.D., New York. Fourth Edition. Roy. 16mo, 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. With 12 Photogravure and Chromographic Plates and 60 Illustrations in the Text. Royal 8vo, 12s. 6d.

The Operative Surgery of Malignant Disease. By Henry T. Butlin, F.R.C.S., Surgeon to St. Bartholomew's Hospital. Second Edition, with 12 Engravings. 8vo, 14s

By the same Author.

Malignant Disease (Sarcoma and Carcinoma) of the Larynx. 8vo, with 5 Engravings, 5s.

Cancers and the Cancer Process: a Treatise, Practical and Theoretic. By Herbert L. Snow, M.D., Surgeon to the Cancer Hospital, Brompton. 8vo, with 15 Plates. 15s.

By the same Author.

The Re-appearance (Recurrence) of Cancer after ap- parent Extirpation. 8vo, 5s. 6d.

Also.

The Palliative Treatment of Incurable Cancer. Crown 8vo, 2s. 6d.

The Diagnosis and Treatment of Syphilis. By Tom Robinson, M.D. St. And., Physician to the Western Skin Hospital. Second Edition. Crown 8vo, 3s. 6d.

By the same Author.

The Diagnosis and Treatment of Eczema. Second Edition. Crown 8vo, 3s. 6d.

Also.

Illustrations of Diseases of the Skin and Syphilis, with Remarks. Fasc. I. with 3 Plates. Imp. 4to, 5s. net.

Cancerous Affections of the Skin (Epithelioma and Rodent Ulcer). By GEORGE THIN, M.D. Post 8vo, with 8 Engravings, 5s.

By the same Author.

Pathology and Treatment of Ringworm. 8vo, with 21 Engravings, 5s.

Ringworm and some other Scalp Affections, their Cause and Cure. By HAYDN BROWN, L.R.C.P., Ed. 8vo, 5s.

Urinary and Renal Derangements and Calculous Dis-orders. By LIONEL S. BEALE, F.R.C.P., F.R.S., Physician to King's College Hospital. 8vo. 5s.

Chemistry of Urine: a Practical Guide to the Analytical Examination of Diabetic, Albuminous, and Gouty Urine. By ALFRED H. ALLEN, F.I.C., F.C.S., Public Analyst for the West Riding of Yorkshire, etc. 8vo, with Engravings, 7s. 6d.

Clinical Chemistry of Urine (Outlines of the). By C. A. MACMUNN, M.A., M.D. 8vo, with 64 Engravings and Plate of Spectra, 9s.

Atlas of Electric Cystoscopy. By E. HURRY FENWICK, F.R.C.S., Surgeon to the London Hospital and St. Peter's Hospital for Stone. Royal 8vo, with 34 Coloured Plates, embracing 83 Figures, 21s. net.

By the same Author.

Electric Illumination of the Bladder and Urethra, as a Means of Diagnosis of Obscure Vesico-Urethral Diseases. Second Edition. 8vo, with 54 Engravings, 6s. 6d.

Also.

Operative and Inoperative Tumours of the Urinary Bladder: a Clinical and Operative Study based on 500 cases. With 39 Illustrations. 8vo, 5s.

Also.

Tumours of the Urinary Bladder. Fas. I., roy. 8vo, 5s. net.

Also.

Ulceration of the Bladder, Simple, Tuberculous, and Malignant: a Clinical Study. With Illustrations. 8vo, 5s.

Also.

The Cardinal Symptoms of Urinary Disease: their Dia-gnostic Significance and Treatment. 8vo, with 36 Illustrations, 8s. 6d.

Also.

Obscure Diseases of the Urethra. With 63 Illustrations. 8vo, 6s. 6d.

BY SIR HENRY THOMPSON, Bart., F.R.C.S.

Diseases of the Urinary Organs. Clinical Lectures. Eighth Edition. 8vo, with 121 Engravings, 10s. 6d.

Some Important Points connected with the Surgery of the Urinary Organs. Lectures delivered in the R.C.S. 8vo, with 44 Engravings. Student's Edition, 2s. 6d.

Practical Lithotomy and Lithotrity; or, an Inquiry into the Best Modes of Removing Stone from the Bladder. Third Edition. 8vo, with 87 Engravings, 10s.

The Preventive Treatment of Calculous Disease, and the Use of Solvent Remedies. Third Edition. Cr. 8vo, 2s. 6d.

Tumours of the Bladder: their Nature, Symptoms, and Surgical Treatment. 8vo, with numerous Illustrations, 5s.

Stricture of the Urethra, and Urinary Fistulæ: their Pathology and Treatment. Fourth Edition. 8vo, with 74 Engravings, 6s.

The Suprapubic Operation of Opening the Bladder for Stone and for Tumours. 8vo, with Engravings, 3s. 6d.

The Clinical Examination of Urine, with an Atlas of Urinary Deposits. By LINDLEY SCOTT, M.A., M.D. With 41 Original Plates (mostly in Colours). Crown 4to, 15s. net.

The Surgical Diseases of the Genito-Urinary Organs, including Syphilis. By E. L. KEYES, M.D., Professor of Genito-Urinary Surgery, Syphiology, and Dermatology in Bellevue Hospital Medical College, New York (a revision of VAN BUREN and KEYES' Text-book). Roy. 8vo, with 114 Engravings, 21s.

Selected Papers on Stone, Prostate, and other Urinary Disorders. By REGINALD HARRISON, F.R.C.S., Surgeon to St. Peter's Hospital. With 15 Illustrations, 8vo, 5s.

Syphilis. By Sir ALFRED COOPER, F.R.C.S., Consulting Surgeon to the West London and Lock Hospitals. Second Edition. Edited by EDWARD COTTERELL, F.R.C.S., Surgeon (out-patients) to the London Lock Hospital. 8vo, with 24 Full-page Plates (12 coloured), 18s.

On Maternal Syphilis, including the Presence and Recognition of Syphilitic Pelvic Disease in Women. By JOHN A. SHAW-MACKENZIE, M.D. With Coloured Plates, 8vo, 10s. 6d.

Diseases of the Rectum and Anus. By Sir ALFRED COOPER, F.R.C.S., Senior Surgeon to St. Mark's Hospital for Fistula; and F. SWINFORD EDWARDS, F.R.C.S., Senior Assistant Surgeon to St. Mark's Hospital. Second Edition, with Illustrations. 8vo, 12s.

Diseases of the Rectum and Anus. By HARRISON CRIPPS, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, etc. Second Edition. 8vo, with 13 Lithographic Plates and numerous Wood Engravings, 12s. 6d.

By the same Author.

Cancer of the Rectum. Especially considered with regard to its Surgical Treatment. Jacksonian Prize Essay. Third Edition. 8vo, with 13 Plates and several Wood Engravings, 6s.

Also.

The Passage of Air and Fæces from the Urethra. 8vo, 3s. 6d.

A Medical Vocabulary: an Explanation of all Terms and Phrases used in the various Departments of Medical Science and Practice, their Derivation, Meaning, Application, and Pronunciation. By R. G. MAYNE, M.D., LL.D. Seventh Edition. By W. W. WAGSTAFFE, B.A., F.R.C.S., and G. D. PARKER, M.B. Crown 8vo, 12s. 6d

A Short Dictionary of Medical Terms. Being an Abridgment of Mayne's Vocabulary. 64mo, 2s. 6d.

Dunglison's Dictionary of Medical Science. Containing a full Explanation of its various Subjects and Terms, with their Pronunciation, Accentuation, and Derivation. Twenty-second Edition. By RICHARD J. DUNGLISON, A.M., M.D. Super-royal 8vo, 30s.

Terminologia Medica Polyglotta: a Concise International Dictionary of Medical Terms (French, Latin, English, German, Italian, Spanish, and Russian). By THEODORE MAXWELL, M.D., B.Sc., F.R.C.S. Edin. Royal 8vo, 16s.

A German-English Dictionary of Medical Terms. By Sir FREDERICK TREVES, Bart., K.C.V.O., Surgeon to the London Hospital; and HUGO LANG, B.A. Crown 8vo, half Persian calf, 12s.

A Handbook of Physics and Chemistry, adapted to the requirements of the First Examination of the Conjoint Board of the R.C.P. and R.C.S. By HERBERT E. CORBIN, B.Sc. Lond., and ARCHIBALD M. STEWART, B.Sc. Lond. With 120 Illustrations. Crown 8vo, 6s. 6d.

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; Examiner in Chemistry to the Department of Science and Art. With 2 Plates and 143 Woodcuts, crown 8vo, 10s.

Chemistry, Inorganic and Organic. With Experiments. By CHARLES L. BLOXAM. Eighth Edition by JOHN MILLAR THOMSON, F.R.S., Professor of Chemistry in King's College, London, and ARTHUR G. BLOXAM, Head of the Chemistry Department, the Goldsmiths' Institute, New Cross. 8vo, with 281 Engravings, 18s. 6d.

By the same Author.

Laboratory Teaching; or, Progressive Exercises in Practical Chemistry. Sixth Edition. By ARTHUR G. BLOXAM. Crown 8vo, with 80 Engravings, 6s. 6d.

Watts' Organic Chemistry. Edited by WILLIAM A. TILDEN, D.Sc., F.R.S., Professor of Chemistry Royal College of Science, London. Second Edition. Crown 8vo, 10s.

Practical Chemistry and Qualitative Analysis. By FRANK CLOWES, D.Sc. Lond., Emeritus Professor of Chemistry in the University College, Nottingham. Seventh Edition. Post 8vo, with 101 Engravings and Frontispiece, 8s. 6d.

Quantitative Analysis. By FRANK CLOWES, D.Sc. Lond., Emeritus Professor of Chemistry in the University College, Nottingham, and J. BERNARD COLEMAN, Assoc. R. C. Sci. Dublin; Professor of Chemistry, South-West London Polytechnic. Fifth Edition. Post 8vo, with 122 Engravings, 10s.

By the same Authors.

Elementary Practical Chemistry and Qualitative Analysis. With 54 Engravings, Post 8vo, 3s. 6d.

Also.

Elementary Quantitative Analysis. With 62 Engravings, Post 8vo, 4s. 6d.

Qualitative Analysis. By R. FRESENIUS. Translated by CHARLES E. GROVES, F.R.S. Tenth Edition. 8vo, with Coloured Plate of Spectra and 46 Engravings, 15s.

By the same Author.

Quantitative Analysis. Seventh Edition.

VOL. I., Translated by A. VACHER. 8vo, with 106 Engravings, 15s.

VOL. II., Translated by C. E. GROVES, F.R.S. 8vo, with 143 Engravings, 20s.

J. & A. CHURCHILL'S RECENT WORKS.

Inorganic Chemistry. By Sir EDWARD FRANKLAND, K.C.B., D.C.L., LL.D., F.R.S., and FRANCIS R. JAPP, M.A., Ph.D., F.I.C., F.R.S., Professor of Chemistry in the University of Aberdeen. 8vo, with numerous Illustrations on Stone and Wood, 24s.

Inorganic Chemistry (A System of). By SIR WILLIAM RAMSAY, K.C.B., Ph.D., F.R.S., Professor of Chemistry in the University College, London. 8vo, with Engravings, 15s.

By the same Author.

Elementary Systematic Chemistry for the Use of Schools and Colleges. With Engravings. Crown 8vo, 4s. 6d.; Interleaved, 5s. 6d.

Valentin's Practical Chemistry and Qualitative and Quantitative Analysis. Edited by Dr. W. R. HODGKINSON, F.R.S.E., Professor of Chemistry and Physics at the Royal Military Academy, and Artillery College, Woolwich. Ninth Edition. 8vo, with Engravings and Map of Spectra, 9s. [The Tables separately, 2s. 6d.]

Practical Chemistry. Part I. Qualitative Exercises and Analytical Tables for Students. By J. CAMPBELL BROWN, Professor of Chemistry in Victoria University and University College, Liverpool. Fourth Edition. 8vo, 2s. 6d.

The Analyst's Laboratory Companion: A Collection of Tables and Data for Chemists and Students. By ALF. E. JOHNSON, A.R.C.S., F.I.C. Second Edition, Enlarged. Crown 8vo, cloth, 5s.; leather, 6s. 6d.

The Chemistry of the Terpenes. By F. HEUSLER, Ph.D. Edited in English and enlarged by F. J. POND, M.A., Ph.D. 8vo, 17s. net.

Commercial Organic Analysis: a Treatise on the Pro- perties, Modes of Assaying, Proximate Analytical Examination, etc., of the various Organic Chemicals and Products employed in the Arts, Manufactures, Medicine, etc. By ALFRED H. ALLEN, F.I.C.

Third Edition.

VOL. I., 18s. VOL. II., Part I., 14s. VOL. II., Part II., 14s. VOL. II., Part III., in the press. Vol. III., Part I., 18s.

Second Edition.

VOL. III., Part II., 18s.; VOL. III., Part III., 16s. VOL. IV., completing the work, 18s.

7, GREAT MARLBOROUGH STREET.

Volumetric Analysis (A Systematic Handbook of); or the Quantitative Estimation of Chemical Substances by Measure, applied to Liquids, Solids, and Gases. By FRANCIS SUTTON, F.C.S., F.I.C., Public Analyst for the County of Norfolk. Eighth Edition. 8vo, with 116 Engravings, 20s.

Chemical Technology: or, Chemistry in its Applications to Arts and Manufactures. Edited by CHARLES E. GROVES, F.R.S., and WILLIAM THORP, B.Sc.

VOL. I.—**Fuel and its Applications.** By E. J. MILLS, D.Sc., F.R.S., and F. J. ROWAN, C.E. Royal 8vo, with 606 Engravings, 30s.

VOL. II.—**Lighting, Fats and Oils.** By W. Y. DENT. STEARINE INDUSTRY, by J. MCARTHUR. CANDLE MANUFACTURE, by L. FIELD and F. A. FIELD. THE PETROLEUM INDUSTRY AND LAMPS, by BOVERTON REDWOOD. MINERS' SAFETY LAMPS, by B. REDWOOD and D. A. LOUIS. Royal 8vo, with 358 Engravings and Map, 20s.

VOL. III.—**Gas Lighting.** By CHARLES HUNT. Royal 8vo, with 2 Plates and 292 Engravings, 18s.

Cooley's Cyclopædia of Practical Receipts, and Collatera Information in the Arts, Manufactures, Professions, and Trades: including Medicine, Pharmacy, Hygiene, and Domestic Economy. Seventh Edition By W. NORTH, M.A. Camb., F.C.S. 2 vols., Roy. 8vo, with 371 Engravings, 42s.

Chemical Technology: a Manual. By RUDOLF VON WAGNER, Translated and Edited by SIR WILLIAM CROOKES, F.R.S., from the Thirteenth Enlarged German Edition as remodelled by Dr. FERDINAND FISCHER. 8vo, with 596 Engravings, 32s.

Technological Handbooks. Edited by JOHN GARDNER, F.I.C., F.C.S., and JAMES CAMERON, F.I.C.

Brewing, Distilling, and Wine Manufacture. Crown 8vo, with Engravings, 6s. 6d.

Oils, Resins, and Varnishes. Crown 8vo, with Engravings, 7s. 6d.

Soaps and Candles. Crown 8vo, with 54 Engravings, 7s.

Chemistry an Exact Mechanical Philosophy. By FRED. G. EDWARDS. Illustrated. 8vo, 3s. 6d.

Methods and Formulæ used in the Preparation of Animal and Vegetable Tissues for Microscopical Examination, including the Staining of Bacteria. By PETER WYATT SQUIRE, F.L.S. Crown 8vo, 3s. 6d.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, M.A., LL.D., F.R.S.; with the co-operation of ADAM SEDGWICK, M.A., F.R.S., W. F. R. WELDON, M.A., F.R.S., and SYDNEY J. HICKSON, M.A., F.R.S. Each Number, 10s.

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. With 23 Plates and more than 800 Wood Engravings. 8vo, 28s. Half Calf, 32s.

The Microtomist's Vade-Mecum: a Handbook of the Methods of Microscopic Anatomy. By ARTHUR BOLLES LEE. Fifth Edition, 8vo, 15s.

Photo-Micrography (Guide to the Science of). By EDWARD C. BOUSFIELD, L.R.C.P. Lond. 8vo, with 34 Engravings and Frontispiece, 6s.

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. With 350 Illustrations. 8vo, 15s.

An Introduction to Physical Measurements, with Appendices on Absolute Electrical Measurements, etc. By Dr. F. KOHLRAUSCH, Professor at the University of Strassburg. Third English Edition, by T. H. WALLER, B.A., B.Sc., and H. R. PROCTER, F.I.C., F.C.S. 8vo, with 91 Illustrations, 12s. 6d.

Tuson's Veterinary Pharmacopœia, including the Outlines of Materia Medica and Therapeutics. Fifth Edition Edited by JAMES BAYNE, F.C.S., Professor of Chemistry and Toxicology in the Royal Veterinary College. Crown 8vo, 7s. 6d.

The Veterinarian's Pocket Remembrancer: being Concise Directions for the Treatment of Urgent or Rare Cases. By GEORGE ARMATAGE, M.R.C.V.S. Second Edition. Post 8vo, 3s.

Chauveau's Comparative Anatomy of the Domesticated Animals. Revised and Enlarged, with the Co-operation of S. ARLOING, Director of the Lyons Veterinary School. Second English Edition by GEORGE FLEMING, C.B., late Principal Veterinary Surgeon of the British Army. 8vo, with 585 Engravings, 31s. 6d.

Human Nature, its Principles and the Principles of Physiognomy. By PHYSICIST. Part. I., imp. 16mo, 2s. Part II. (completing the work), 2s. 6d.

Encyclopædia Medica. In about 12 Volumes at 20s. net. Under the general Editorship of CHALMERS WATSON, M.B., M.R.C.P.E. Vols. I. to XI. now ready.

Allen's Chemistry of Urine, 22
——— Commercial Organic Analysis, 26
Armatage's Veterinary Pocket Remembrancer, 28
Auld's Researches in Pathology, 2
Ballantyne's Antenatal Pathology and Hygiene, 2
Barnes' (R.) Obstetric Operations, 6
——— Diseases of Women, 6
Beale (L. S.) on Liver, 12
——— Slight Ailments, 12
——— Urinary and Renal Derangements, 22
Beale (P. T. B.) on Elementary Biology, 3
Beasley's Book of Prescriptions, 8
——— Druggist's General Receipt Book, 8
——— Pharmaceutical Formulary, 8
Bell on Sterility, 6
Bentley and Trimen's Medicinal Plants, 9
Bentley's Systematic Botany, 9
Berkart's Bronchial Asthma, 13
Bernard on Stammering, 14
Berry's (James) Thyroid Gland, 18
——— (R. J.) Regional Anatomy, 2
Bigg's Short Manual of Orthopædy, 18
Birch's Practical Physiology, 3
Bloxam's Chemistry, 25
——— Laboratory Teaching, 25
Bousfield's Photo-Micrography, 28
Bowlby's Injuries and Diseases of Nerves, 17
——— Surgical Pathology and Morbid Anatomy, 17
Brockbank on Gallstones, 15
Brown's (C.) Practical Chemistry, 26
——— (Haydn) Ringworm, 22
Bryant's Practice of Surgery, 16
Bulkley on Skin, 21
Burdett's Hospitals and Asylums of the World, 4
Butlin's Operative Surgery of Malignant Disease, 21
——— Malignant Disease of the Larynx, 21
Buzzard's Diseases of the Nervous System, 14
——— Peripheral Neuritis, 14
——— Simulation of Hysteria, 14
Cameron's Oils, Resins, and Varnishes, 27
——— Soaps and Candles, 27
Campbell's Dissection Outlines, 1
Carpenter and Dallinger on the Microscope, 28
Cautley on Feeding Infants, 7
Charteris' Practice of Medicine, 11
Chauveau's Comparative Anatomy, 28
Chevers' Diseases of India, 10
Churchill's Face and Foot Deformities, 18
Clouston's Lectures on Mental Diseases, 5
Clowes and Coleman's Quantitative Analysis, 25
Clowes and Coleman's Elementary Practical Chemistry, 25
Clowes' Practical Chemistry, 25
Coles on Blood, 12
Cooley's Cyclopædia of Practical Receipts, 27
Cooper's Syphilis, 23
Cooper and Edwards' Diseases of the Rectum, 24
Corbin and Stewart's Physics and Chemistry, 24
Cripps' (H.) Ovariotomy and Abdominal Surgery, 17
——— Cancer of the Rectum, 24
——— Diseases of the Rectum and Anus, 24
——— Air and Fæces in Urethra, 24
Cripps' (R. A.) Galenic Pharmacy, 8
Cuff's Lectures to Nurses, 7
Cullingworth's Monthly Nurses, 7
Dalby's Diseases and Injuries of the Ear, 20
———-Short Contributions, 20
Dana on Nervous Diseases, 14
Day on Headaches, 15
Domville's Manual for Nurses, 7

[*Continued on next page.*

Druitt's Surgeon's Vade-Mecum, 17
Duncan (A.) on Prevention of Diseases in Tropics, 10
Dunglison's Dictionary of Medical Science, 24
Edwards' Chemistry, 27
Ellis's (T. S.) Human Foot, 18
Encyclopædia Medica, 8
Fagge's Principles and Practice of Medicine, 10
Fayrer's Climate and Fevers of India, 10
Fenwick (E. H.), Electric Illumination of Bladder, 22
——— Tumours of Bladder, 22
——— Ulceration of Bladder, 22
——— Symptoms of Urinary Disease, 22
——— Atlas of Electric Cystoscopy, 22
——— Obscure Diseases of Urethra, 22
Fenwick's (S.) Medical Diagnosis, 12
——— Ulcer of Stomach and Duodenum, 12
——— Cancer of Stomach, 12
——— Obscure Diseases of the Abdomen, 12
——— Outlines of Medical Treatment, 12
——— The Saliva as a Test, 12
Fink's Operating for Cataract, 19
Fowler's Dictionary of Practical Medicine, 11
Fox (G. H.) on Skin Diseases in Children, 21
Fox (Wilson), Atlas of Pathological Anatomy of the Lungs, 11
——Treatise on Diseases of the Lungs, 11
Frankland and Japp's Inorganic Chemistry, 26
Fraser's Operations on the Brain, 16
Fresenius' Qualitative Analysis, 25
——— Quantitative Analysis, 25
Galabin's Diseases of Women, 6
——— Manual of Midwifery, 5
Gardner's Brewing, Distilling, and Wine Manufacture, 27
Glassington's Dental Materia Medica, 20
Godlee's Atlas of Human Anatomy, 1
Goodhart's Diseases of Children, 7
Gorgas' Dental Medicine, 20
Gowers' Diagnosis of Brain Disease 13
——— Diseases of Nervous System, 3
——— Epilepsy, 13
——— Medical Ophthalmoscopy, 13
——— Syphilis and the Nervous System, 13
Granville on Gout, 14
Gray's Treatise on Physics, 28
Green's Manual of Botany, 9
——— Vegetable Physiology, 9
Greenish's Materia Medica, 8
Groves and Thorp's Chemical Technology, 27
Guy's Hospital Reports, 11
Habershon's Diseases of the Abdomen, 15
Hadley on Nursing, 6
Haig's Uric Acid, 13
——— Diet and Food, 4
Hamer's Manual of Hygiene, 3
Harley on Diseases of the Liver, 14
Harris's (V. D.) Diseases of Chest, 11
Harrison's Urinary Organs, 23
Hartridge's Refraction of the Eye, 19
——— Ophthalmoscope, 19
Hawthorne's Galenical Preparations, 8
Heath's Injuries and Diseases of the Jaws, 16
——— Minor Surgery and Bandaging, 16
——— Operative Surgery, 16
——— Practical Anatomy, 1
——— Surgical Diagnosis, 16
——— Clinical Lectures, 16
Hedley's Therapeutic Electricity, 9
Heusler on the Terpenes, 26
Hewlett's Bacteriology, 4
Hill on Cerebral Circulation, 3
Holden's Human Osteology, 1
——— Landmarks, 1
Hooper's Physicians' Vade-Mecum, 10
Horrocks' Bacteriological Examination of Water, 4
Hovell's Diseases of the Ear, 19
Horton-Smith on Typhoid, 14
Hughes and Keith's Practical Anatomy, 2
Human Nature and Physiognomy, 28
Impey on Leprosy, 21
Ireland on Mental Affections of Children, 5

[*Continued on next page.*

Jacobson's Operations of Surgery, 17
Jellett's Midwifery, 6
——————— for Nurses, 6
——— Gynæcology, 6
Jessop's Ophthalmic Surgery and Medicine, 18
Johnson's (Sir G.) Asphyxia, 12
——— Medical Lectures and Essays, 12
——— (A.E.) Analyst's Companion, 26
Journal of Mental Science, 5
Kelynack's Pathologist's Handbook, 2
Keyes' Genito-Urinary Organs and Syphilis, 23
Knuthsen on Hiccough, 15
Kohlrausch's Physical Measurements, 28
Lane's Rheumatic Diseases, 14
Langdon-Down's Mental Affections of Childhood, 5
Lawrie on Chloroform, 17
Lazarus-Barlow's General Pathology, 2
Lee's Microtomist's Vade-Mecum, 28
Lewis and Balfour's Public Health, 3
Lewis (Bevan) on the Human Brain, 3
Liebreich (O.) on Borax and Boracic Acid, 4
Liebreich's (R.) Atlas of Ophthalmoscopy, 19
Lucas's Practical Pharmacy, 8
Luke's Anæsthetics, 17
MacMunn's Clinical Chemistry of Urine, 22
Macnamara's Diseases and Refraction of the Eye, 18
——————— Diseases of Bones and Joints, 17
McNeill's Isolation Hospitals, 4
Malcolm's Physiology of Death, 16
Marsh's Clinical Essays and Lectures, 17
Martin's Ambulance Lectures, 15
Maxwell's Terminologia Medica Polyglotta, 24
Maylard's Surgery of Alimentary Canal, 17
Mayne's Medical Vocabulary, 24
Microscopical Journal, 28
Mills and Rowan's Fuel and its Applications, 27
Moore's (N.) Pathological Anatomy of Diseases, 2
Moore's (Sir W. J.) Diseases of India, 10
Moore's Family Medicine, etc., for India, 10
———Tropical Climates, 10
Morris's Human Anatomy, 1
———Anatomy of Joints, 2
Moullin's (Mansell) Surgery, 16
Murray's Hare-lip and Cleft Palate, 16
Nettleship's Diseases of the Eye, 18
Notter's Hygiene, 3
Oliver's Abdominal Tumours, 6
———Diseases of Women, 6
Ophthalmic (Royal London) Hospital Reports, 18
Ophthalmological Society's Transactions, 18
Ormerod's Diseases of the Nervous System, 13
Parkes' (L. C.) Elements of Health, 4
Parsons' Ophthalmic Optics, 18
Pavy's Carbohydrates, 12
Pereira's Selecta è Prescriptis, 8
Phillips' Materia Medica and Therapeutics, 7
Pitt-Lewis's Insane and the Law, 5
Pollock's Histology of the Eye and Eyelids, 19
Proctor's Practical Pharmacy, 8
Pye-Smith's Diseases of the Skin, 21
Ramsay's Elementary Systematic Chemistry, 26
——— Inorganic Chemistry, 26
Richardson's Mechanical Dentistry, 20
Richmond on Antiseptics, 7
Roberts' (C. Hubert) Gynæcological Pathology, 6
Roberts' (D. Lloyd) Practice of Midwifery, 5
Robinson's (Tom) Eczema, 21
——————— Illustrations of Skin Diseases, 21
——————— Syphilis, 21
Ross's Diseases of the Nervous System, 14
St. Thomas's Hospital Reports, 11
Sansom's Valvular Disease of the Heart, 13

[*Continued on next page.*

Schofield's Force of Mind, 5
Scott's Atlas of Urinary Deposits, 23
Shaw's Diseases of the Eye, 19
Shaw-Mackenzie on Maternal Syphilis, 23
Short Dictionary of Medical Terms, 24
Silk's Manual of Nitrous Oxide, 20
Smith's (Ernest) Dental Metallurgy, 20
————(Eustace) Clinical Studies, 7
————Disease in Children, 7
————Wasting Diseases of Infants and Children, 7
———— (Fred. J.) Medical Jurisprudence, 3
————(J. Greig) Abdominal Surgery, 16
————(Priestley) Glaucoma, 19
Snow's Cancers and the Cancer Process, 21
——— Palliative Treatment of Cancer, 21
——— Reappearance of Cancer, 21
Solly's Medical Climatology, 15
Southall's Organic Materia Medica, 9
Squire's (P.) Companion to the Pharmacopœia, 8
————London Hospitals Pharmacopœias, 8
————Methods and Formulæ, 28
Starling's Elements of Human Physiology, 3
Sternberg's Bacteriology, 11
Stevenson and Murphy's Hygiene, 4
Sutton's (F.) Volumetric Analysis, 27
Sutton's (J.B.) General Pathology, 2
Swain's Surgical Emergencies, 15
Swayne's Obstetric Aphorisms, 5
Taylor's (A. S) Medical Jurisprudence, 3
Taylor's (F.) Practice of Medicine, 10
Thin's Cancerous Affections of the Skin, 22
——— Pathology and Treatment of Ringworm, 22
——— Psilosis or "Sprue," 10
Thompson's (Sir H.) Calculous Diseases, 23
Thompson's Diseases of the Urinary Organs, 23
————Lithotomy and Lithotrity, 23
————Stricture of the Urethra, 23
————Suprapubic Operation, 23
————Surgery of the Urinary Organs, 23
————Tumours of the Bladder, 23
Thorne's Diseases of the Heart, 11
Thresh on Water Analysis, 4
Tilden's Chemistry, 25
Tirard's Medical Treatment, 12
Tobin's Synopsis of Surgery, 15
Tomes' (C. S.) Dental Anatomy, 20
Tomes' (J. & C. S.) Dental Surgery, 20
Tooth's Spinal Cord, 14
Treves and Lang's German-English Dictionary, 24
Tuke's Dictionary of Psychological Medicine, 5
Turner on Sinuses of the Nose, 19
Tuson's Veterinary Pharmacopœia, 28
Valentin and Hodgkinson's Practical Chemistry, 26
Vintras on the Mineral Waters, etc., of France, 15
Wagner's Chemical Technology, 27
Wallace on Dental Caries, 20
Walsham's Surgery: its Theory and Practice, 15
Waring's Indian Bazaar Medicines, 9
——— Practical Therapeutics, 9
Watts' Organic Chemistry, 25
West's (S.) How to Examine the Chest, 11
White's (Hale) Materia Medica, Pharmacy, etc., 7
Wilks' Diseases of the Nervous System, 14
Wilson's (Sir E.) Anatomist's Vade-Mecum, 1
Wilson's (G.) Handbook of Hygiene, 4
Wolfe's Diseases and Injuries of the Eye, 18
Wright (H.) on Malarial Fevers, 10
Wynter and Wethered's Practical Pathology, 2
Year Book of Pharmacy, 9

N.B.—J. & A. Churchill's larger Catalogue of about 600 *works on Anatomy, Physiology, Hygiene, Midwifery, Materia Medica, Medicine, Surgery, Chemistry, Botany, etc. etc., with a complete Index to their Subjects, for easy reference, will be forwarded post free on application.*

AMERICA.—*J. & A. Churchill being in constant communication with various publishing houses in America are able to conduct negotiations favourable to English Authors.*

DATE DUE

	AUG 3 1 2004	SEP 2 1 2004	

DEMCO 38-296

COLUMBIA UNIVERSITY LIBRARIES

RC601
C62
1898
Clouston
Mental Diseases