Handbook for attendants on the insane : with an appendix giving the regulations for the training and examination of candidates for the certificate of proficiency in nursing of the Medico-Psychological Association of Great Britain and Ireland / Medico-Psychological Association.

HANDBOOK
FOR
ATTENDANTS ON THE INSANE

ILLIÈRE TINDALL & COX


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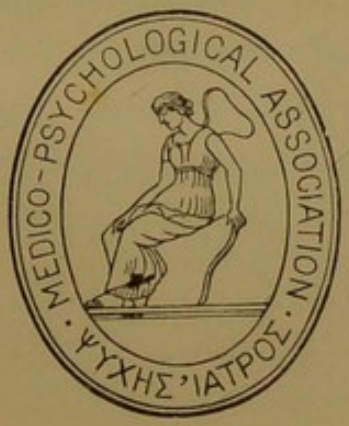
HANDBOOK

FOR

ATTENDANTS ON THE INSANE.

WITH AN APPENDIX GIVING THE REGULATIONS FOR THE TRAINING AND EXAMINATION OF CANDIDATES FOR THE CERTIFICATE OF PROFICIENCY IN NURSING OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND

FOURTH EDITION.



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PREFACE TO THE FOURTH EDITION.

A FOURTH edition having been called for, the opportunity has been taken to revise the matter contained in previous editions. Some additions have also been made.

The Committee of Revisers has been the same, with the following exceptions : Dr. MacIver Campbell died before the revision was undertaken ; Drs. Carlyle Johnstone, Menzies, and Rambant were added to the Committee.

PREFACE TO THE REVISED EDITION.

THE first edition having been exhausted, the Medico-Psychological Association entrusted to a committee of eleven members the task of revising and reissuing the work.

The Committee, taking into account the fact that it is by the authority of the Association republished as the official handbook by which attendants are to be trained, and on which they are to be examined for the certificate of proficiency, has in some respects altered and extended the scope of instruction. This has been proved to be desirable, and, indeed, necessary, by the experience of the capabilities of attendants which has been gained both by teachers and examiners in their carrying out the intentions of the Association in its scheme for training and certification of attendants and nurses.

Questions have been added to the work in order to assist learners in testing their progress towards mastering its contents.

(Committee of Revisers: H. H. Newington, Chairman; R. Baker, Fletcher Beach, C. MacIver Campbell, A. Campbell Clark, Conolly Norman, H. Rayner, J. Beveridge Spence, A. R. Turnbull, A. R. Urquhart, E. B. Whitcombe.)

INTRODUCTION TO THE FIRST EDITION.

THIS handbook has been prepared in the hope of helping attendants on the insane to a due understanding of the work in which they are engaged. It is sought to give them such simple notions of the body and mind in health and disease, such instructions for the management of those maladies with which they are usually brought in contact, and such rules for their guidance in matters of everyday experience, as will enable them to do their work with greater intelligence and watchfulness. It is designed that these nstructions should aid attendants to carry out the orders of the physicians ; but it is to be distinctly understood that in no case is anything contained in this book to override the special rules of any institution or special orders in regard to any individual case.

(Compilers : A. Campbell Clark, Convener ; C. MacIver Campbell, A. R. Turnbull, and A. R. Urquhart.)

TABLE OF CONTENTS.

CHAPTER I.

[*The figures in the margin refer to the questions at the end of each chapter.*]

PART I.—ANATOMY AND PHYSIOLOGY.

To understand even the plain facts of the human body and how it lives, it is necessary to study it in two ways: *first*, its anatomy; 1
in other words, the structures of the body: *second*, its physiology;
in other words, the *function* or use of these structures. 2

MATERIALS OF THE BODY STRUCTURE.

We speak of the materials required to build a house, or of the materials of which an engine is constructed. We may also speak of the materials which make up the structure of the human body. These are various—some bulky, others small. Those which are bulky are most familiar, for they catch the eye more readily. Such 3
are the skin, fat, muscle, and bone.

Others, much smaller, and requiring to be carefully looked for, but equally important in their own place, are:—arteries, veins, 4
nerves, lymphatic glands, etc.

If you could examine, immediately after the amputation of a limb, 5
the surface of the stump, you would see that the four bulky materials are there in a certain relation to each other. You will observe outermost the tightly fitting and enveloping skin; beneath it a coating of fat; deeper still, and in much larger quantity, a red fleshy substance, which is muscle; and innermost of all the bone itself. You will also notice embedded in the muscle, and if you examine carefully, in the other coats as well, four lesser materials—arteries, 6
veins, lymphatics and nerves.

If next you could examine the body itself, which we shall call the trunk—supposing, for example, that it were divided above the waist into an upper and lower half, and that you looked down upon

the lower section—you would discover two hollow spaces; a very small one behind, the spinal canal, and a large one in front, the body cavity. These two cavities are walled in on every side by the same materials as in the stump. Outside, the skin; deeper, the fat; then muscle; and innermost of all, the bone. Here also are seen the small materials already mentioned. Once more, if you examine the head when divided across above the ears and eyebrows into upper and lower parts, you will find a cavity the walls of which are constructed of the same materials. Of these several materials we shall now speak.

THE SKIN AND ITS FUNCTIONS.

7 The skin consists of two parts: (1) the outer, called the *cuticle* or *scarf-skin*, which peels off in large scales during convalescence from scarlet fever and some other diseases, and less visibly during washing of the hands; (2) the *cutis vera*, or the *true skin*, of thicker and firmer texture. It contains nerves, bloodvessels, and glands. In the skin are hair-tubes, or *follicles*, especially numerous where the hair grows thick; and in these the roots of the hair receive nourishment and transmit it to the hair. Lastly, in the skin are glands: (1) *sebaceous* (oily) glands, which lubricate the hair and
8 give it a natural gloss, and (2) *sweat* glands, from which wells out perspiration over the surface of the skin.

The following are the uses of the skin: (1) To regulate the
9 temperature of the body. This is done by the bloodvessels of the skin carrying blood to the surface of the body,* and the outpouring of sweat from the sweat-glands. In hot climates gas-stokers and firemen throw off as much as 4 lbs. of sweat in an hour, and yet their temperature is only about 98·4°. (2) The skin drains off waste matter by the sweat-glands. The importance of the skin as a drainage channel for waste matter should be clearly recognised, and in this connection the following illustration carries its own lesson. At the coronation ceremony of Pope Leo X. a little child was selected to represent an angel. Its skin was coated with gum and then laid over with gold-leaf; with the result that the child died in a few hours. The blood was poisoned by thus stopping up all the drains of the

Functions of Skin.

* According to the state of dilatation or contraction of these vessels, more or less blood is carried to the surface, and consequently more or less heat given off by radiation.

skin. (3) External sensation is communicated from the skin. When people are frost-bitten they have no sensation in the part affected. (4) The skin is a protection and support to underlying structures. (5) It has a slight power of absorption, and that is why medicated ointments are rubbed into the skin.

FAT AND ITS FUNCTIONS.

Deeper than the skin is the fatty coat, which varies in thickness 10
in different individuals. It is composed of fatty globules, in cells bound together in a fibrous meshwork. These globules are in the living body in a fluid, oily state. By its softness and elasticity the fat is well suited to cover and protect the underlying muscular structure, and in certain parts where padding is necessary it is found in more abundance. Fat helps to maintain an equal body temperature, and is a protection from cold. It is also a storehouse of nourishment, and people deprived of food literally live on their fat.

Functions of Fat.

MUSCLE AND ITS FUNCTIONS.

This is the material which forms the flesh of animals. The flesh, 11
if carefully dissected, is seen to consist of several distinct *muscles*, each enclosed in a sheath, and attached to the bones at its extremities. The attachments are usually by sinews or *tendons*, 12
which are white and fibrous. The tendon attached to the fixed bone is the *tendon of origin*, and that to the moving bone the *tendon of insertion*. Between the origin and insertion of the muscle is a joint. The muscular structure of the body makes up its chief bulk, and is nearly half the weight of the body. The muscles, upwards of five hundred in number, are mostly under the 13
control of the will, and are then termed *voluntary*. Under the microscope, muscle is seen to consist of fine fibres of two kinds, *striped* and *unstriped*. Striped muscular tissue is found in the *voluntary* muscles of the body and limbs—that is, those muscles which contract and move the limbs and body about as the will directs; unstriped muscular tissue in the *involuntary* muscles, over which the will has no control, and which act whether we are asleep or awake; *e.g.*, the muscular walls of the stomach, the intestines, the bloodvessels, etc., are involuntary. The muscle of the heart forms 14
an exception; though *in*voluntary, it is striped.

Muscular fibres have a power of contraction by which they

shorten themselves, and so move the bones upon each other. They also are elastic; so that when one set of muscles acts—say, to bend the arm—the opposite set relaxes or is stretched. These two functions, or uses, of muscle—*contractility* and *elasticity*—belong to the two kinds of muscle already mentioned, the voluntary and involuntary. The movements of the limbs, of the head, and neck, etc., are *voluntary;* but such movements as those of the heart and lungs, stomach, and intestines, are *involuntary*, and each kind of movement has its own kind of muscle. The functions of the muscular system will be again referred to.

Functions of Muscles.

BONE AND ITS FUNCTIONS.

15 On sawing or breaking any bone through, it will be seen that the outside layers are hard and compact like ivory, while the inner part is more or less open in structure. If the bones were compact all through, they would be of much greater weight and of no greater strength, while the present arrangement allows for easy nutrition and growth.

16 Bones serve to support the softer structures in their proper places; to keep all parts connected and braced together; to protect internal structures from injury; and to enable the body and limbs to be moved in various directions.

Functions of Bone.

THE FRAMEWORK AND MOVEMENTS OF THE BODY.

17 In the *skeleton*, or bony framework, there are over two hundred bones, which are of three kinds: (*a*) long bones; (*b*) short bones; (*c*) flat bones. The most important of the long bones are to be found in the limbs, and the ribs also belong to this class. Of short bones we have examples in the small bones of the wrist, hand, ankle, foot, and face. The flat bones are seen in the *os innominatum* (haunch-bone), in the *scapula* (shoulder-blade), and in the bones of the *cranium* (skull). A few bones, such as the *vertebræ*, are *irregular*.

The skull is formed of twenty-two separate bones. Of these,
18 eight belong to the cranium and fourteen to the face. The cranial bones are the *frontal*, forming the forehead; the two *temporals*, forming the temples; the two *parietals*, completing the vault and sides of the skull; the *occipital*, forming

The Skull.

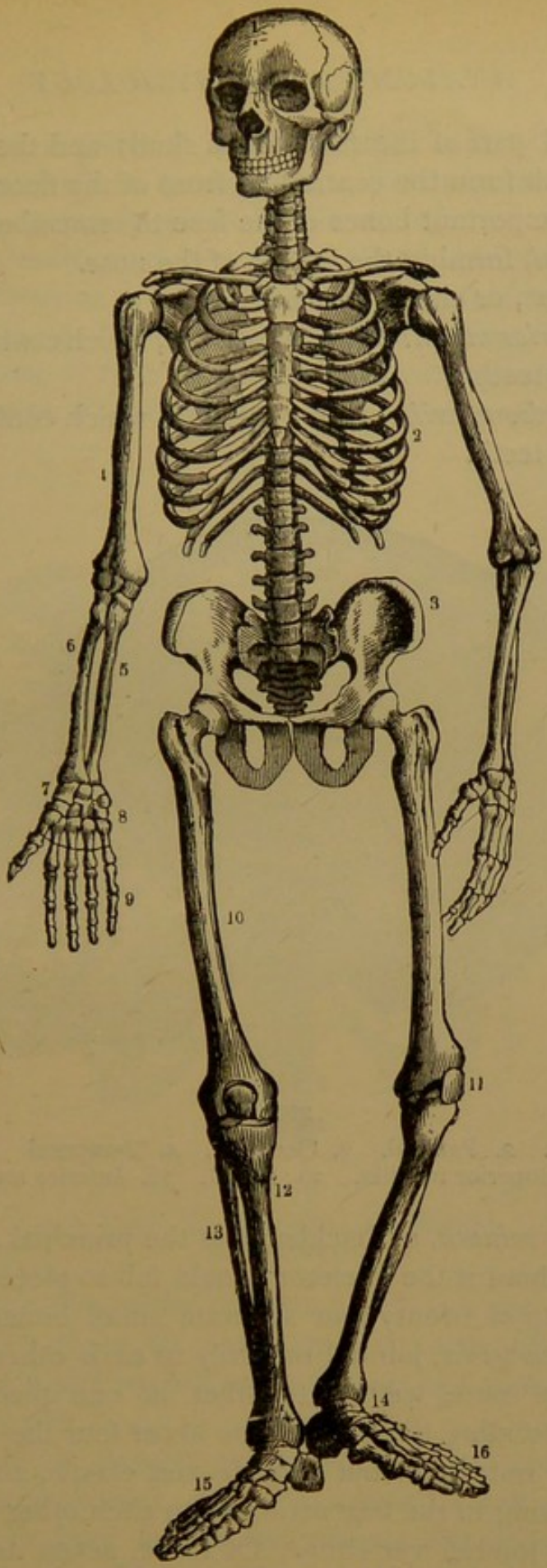


FIG. 1.—HUMAN SKELETON.

1. Skull. 2. Ribs. 3. Haunch-bone. 4. Humerus. 5. Ulna. 6. Radius, 7. Wrist-bones. 8 and 9. Bones of hand and fingers. 10. Femur. 11. Patella (knee-cap). 12. Tibia. 13. Fibula. 14. Bones of the ankle-joint, 15 and 16. Bones of the foot and toes.

19 the back and part of the floor of the skull; and the *sphenoid* and *ethmoid*, which form the centre and front of the floor.

The most important bones of the face to remember are:

The *nasal*, forming the bridge of the nose.

The *malar*, or cheek-bones.

The *superior maxillary*, or upper jaw, which contains the upper row of teeth.

The *inferior maxillary*, or lower jaw, which contains the lower row of teeth.

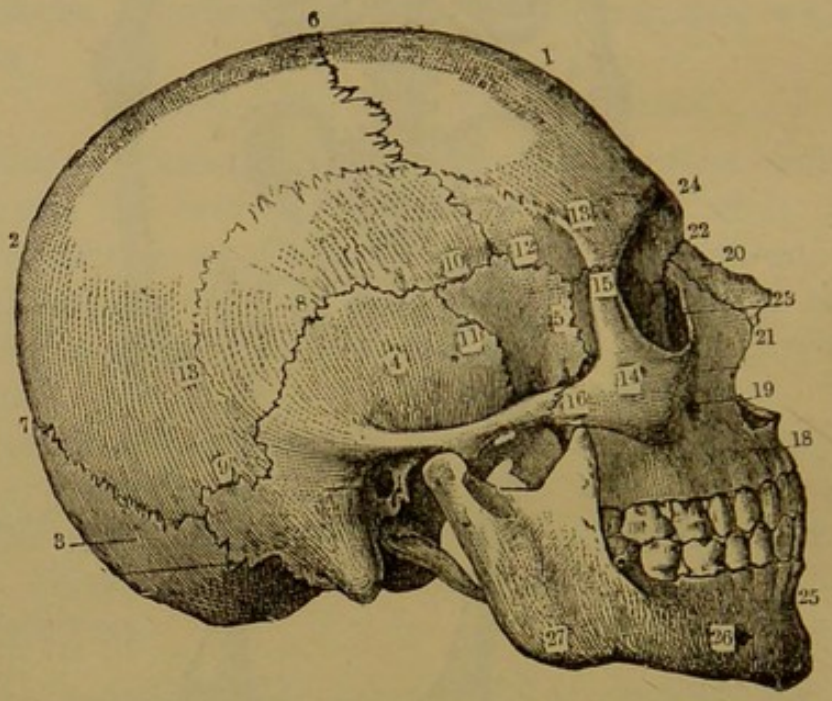


FIG. 2.

1. Frontal bone. 2. Parietal. 3. Occipital. 4. Temporal. 14. Malar bone. 18. Superior maxilla. 20. Nasal. 26. Inferior maxilla.

20 *The spinal column*, or backbone, is the principal support of the body, and without it the skeleton would fall to pieces. It is made

21 **The Trunk.** up of twenty-four separate small bones above called *vertebræ*, jointed movably to each other, below which there are nine more, welded together in one piece; the upper five of these forming the *sacrum*, the lower four the *coccyx*, or tail. The spine is not rigid, but flexible and elastic, allowing of free movement, owing to the free action upon each other of the twenty-four movable jointed vertebræ. Of these, seven are *cervical* (or neck vertebræ), twelve are *dorsal* (or back vertebræ), and five are

22 *lumbar* (or loin vertebræ). The backbone, ribs, and breast-bone give its form to the cavity of the chest. On each side of the body

of the vertebræ a plate of bone projects backwards and inwards, and, meeting its fellow, forms a ring. The superposition of these rings forms a tunnel, in which lies the spinal cord. To each dorsal vertebra the hinder end of a rib is jointed, and ten of these ribs 23
are either directly or indirectly fixed to the breast-bone in front by gristle (*cartilage*). The gristle is more yielding than the bony ribs, and allows of free expansion and contraction of the chest. The upper seven ribs, being joined to the *sternum* (breast-bone), 24

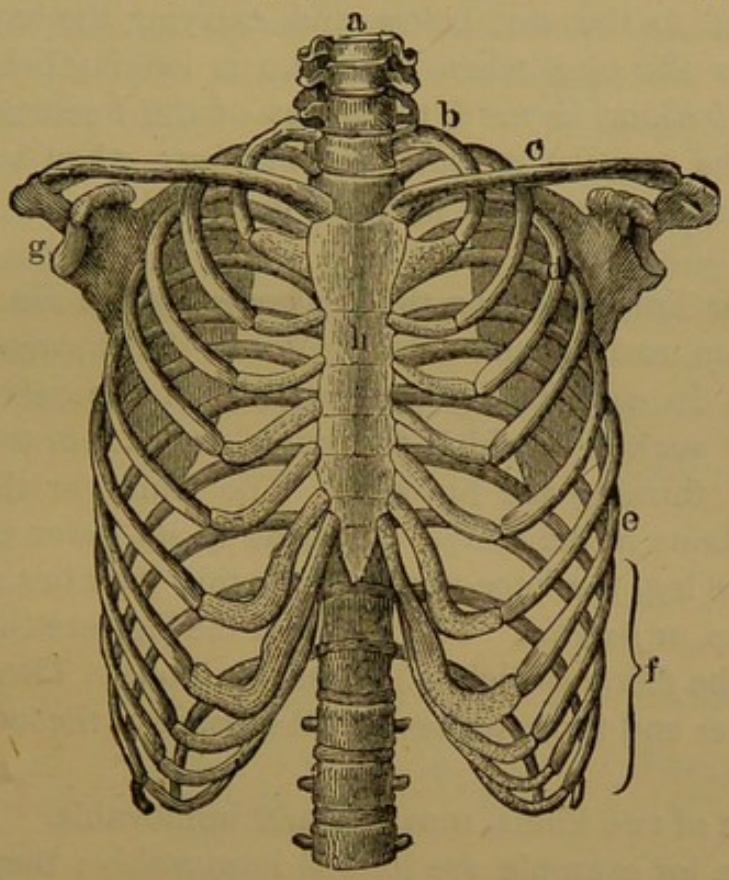


FIG. 3.

a. Vertebræ. *b*, *e*, *f*. Ribs. *f*, False ribs. *c*. Clavicle. *g*. Shoulder-joint. *h*. Sternum.

are called *true* ribs, while the remaining five are *false* ribs. Of these false ribs, three are united in front to the ribs above them; but the eleventh and twelfth have no fixed end in front, and so are called *floating* ribs.

The shoulder is formed by the *clavicle* (collar-bone) and the 25
scapula (shoulder-blade). The clavicle is jointed to the sternum in front and to the scapula just above the shoulder-joint. The scapula is a flat bone, and rests on the back of the upper ribs, where it is movably held by muscular attachments. In a shallow socket of the scapula rests 26

The Upper Limb.

the knob, or head, of the *humerus*, which is the bone of the upper arm, and forms with this resting-place the shoulder-joint. To the lower end of the humerus are jointed the bones of the forearm, the
27 *radius* and *ulna*, the ulna having the larger joint at the elbow, while the radius has the larger joint at the wrist. With the arm hanging by the side and the palm to the front, the ulna is next the body; but with the back of the hand to the front the radius is next the body. The reason of this is that the radius is jointed both to the wrist and to the ulna below, and, carrying the hand with it, is crossed over the ulna when the palm is looking behind. When the palm is looking forward, the bones of the forearm are side by side, and the position is called *supination;* when looking backwards, the radius is crossed over the ulna, and the position is called *pronation.*

The lower limbs hang on the hip-bones, which are fixed behind to the sacrum, and to each other in front, thus forming the *pelvis.*

The Lower Limb.

28 In each half (right and left) of the pelvis is a deep socket, in which the knob, or head, of the *femur* lies, forming the hip-joint. The femur, or thigh-bone, is the largest bone in the body. It forms at its lower end, with the bones of the leg, the knee-joint. Over this joint lies a flat bone—
29 the knee-cap, or *patella.* The bones of the legs are the *tibia* (shin-bone) and the *fibula*, which is the outside bone. These two bones at their lower end form, with one of the bones of the foot, the ankle-joint.

Joints are of two kinds, movable and immovable. The bones of the cranium, for example, are jointed immovably; they do not play upon each other. The bones of the vertebral column have no joint-movements proper, and are therefore properly called immovable joints. But they are provided with pads of cartilage, which by its elasticity allows of some movements between adjoining bones; by multiplication of bones the range of movements in the vertebral column is considerable. Movement is effected by the placing together of two free surfaces of bone which are covered with polished gristle, and the joint being lined with a smooth shining membrane, they play easily upon each other. Bones are bound together by fibrous bands called *ligaments*, so that in movement one bone surface is not dislocated from the other, and they are lubricated by a fluid called *synovial* fluid. Some joints are capable of a wider range of movement than others;

The Joints.

these are the 'ball and socket' joints, such as the shoulder and hip. 30
Next in freedom of movement is the 'hinge' joint, such as the knee, the elbow, the ankle, the wrist, and the joint between the fingers and the toes. A third kind of movable joint is the 'gliding' joint, where the surfaces glide over one another, as in the bones of the carpus and tarsus; or else rotate on one another, as in the case of the atlo-axoid joint and the upper radial joint near the elbow.

The movements which take place at the joints are of several kinds; thus, a joint can be bent or straightened, called *flexion* and *extension;* or the part may be moved away from the middle line of the body, called *abduction*, or back again, towards the middle, called *adduction*. Or, by a combination of these four movements, *circumduction* may be performed, as when one swings one's arm round to loosen the muscles before bowling at cricket. Lastly, a joint may move round with a circular motion; this is called *rotation*.

The following table of joints illustrates their characters:

	Name of Joint.	*Movement.*
I. IMMOVABLE:		
(1) Saw-edge	Bones of skull	
(2) Cartilage-pad	Vertebral column	
II. MOVABLE:		
(1) Gliding	Atlo-axoid, superior end of radius, carpus and tarsus	Rotation.
(2) Hinge	Elbow, knee, wrist, ankle, occipito-atloid, fingers and toes	Flexion and extension.
(3) Ball and socket	Shoulder, hip (to some extent the lower jaw and metacarpal joint of the thumb)	Flexion, extension, abduction, adduction, circumduction, rotation.

It will be noticed that hinge joints save muscular power, but have less freedom of movement compared with ball and socket joints.

The movements of the body and its parts depend (1) on the muscles, and (2), with some exceptions, on movable joints. The exceptions are some of the face muscles, abdominal muscles, etc. The *origin* of a muscle is the fixed point; the *insertion* is the moving point. In the case of movable joints these points are on opposite sides of the joints. Take, for example, the movements of a limb—the arm. When the upper arm is raised, the origin of the

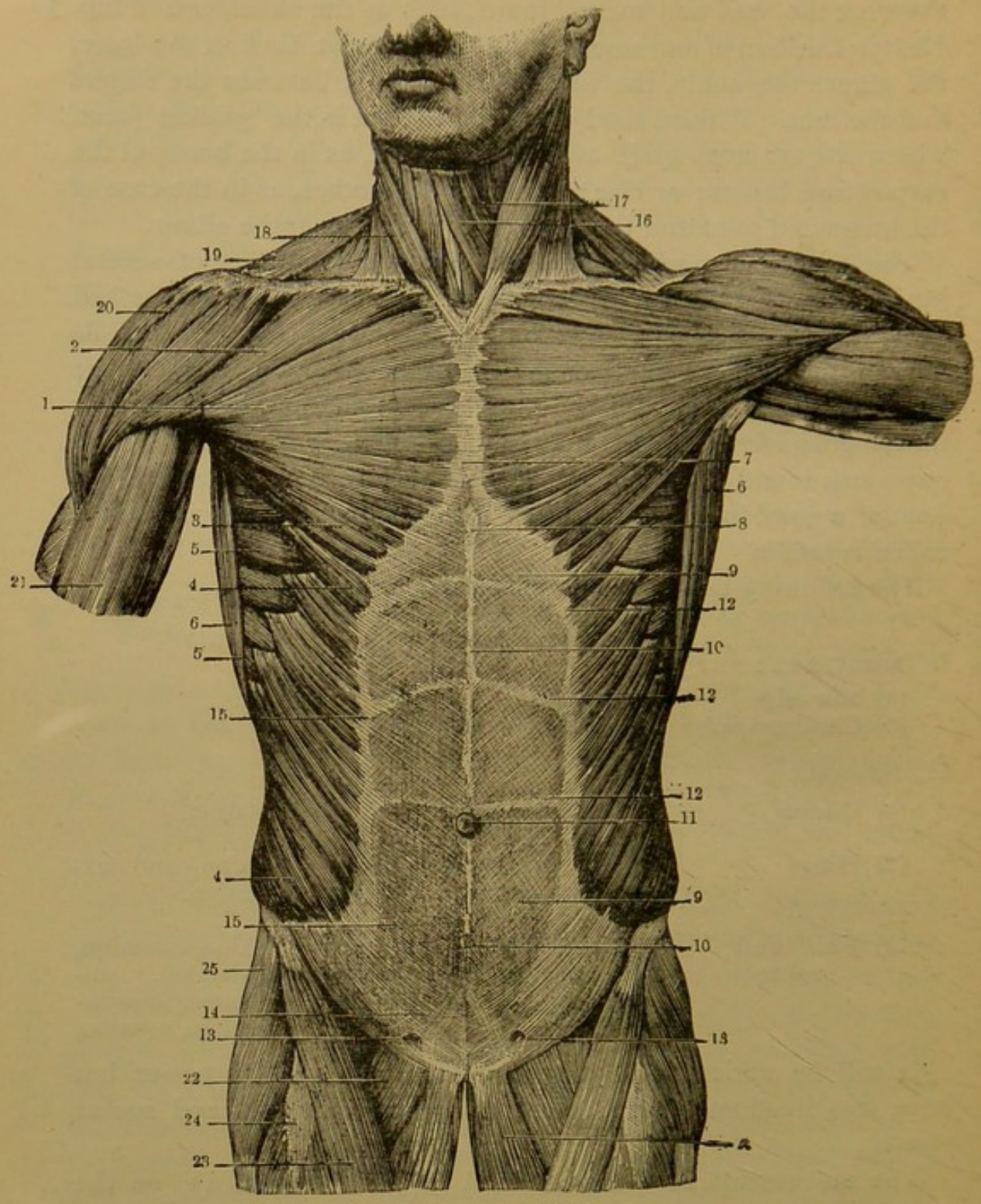


FIG. 4.—MUSCLES.

Most of these numbers indicate distinct muscles, *e.g.*, 1 and 2. Pectoralis major. 5. Serratus magnus. 6. Latissimus dorsi. 18. Sterno-mastoid. 19. Trapezius. 20. Deltoid. 21. Biceps. 22. Pectineus. 23. Sartorius. 24. Rectus.

31 principal muscle used (the *deltoid*) is on one side of the shoulder-joint, being attached to the clavicle and scapula ; and the insertion

is on the other—*i.e.*, the humerus, or bone of the upper arm. Again, the forearm is bent on the upper arm by the *biceps* muscle, which has its origin on the scapula, and its insertion into the radius, the elbow-joint lying between. The biceps is the muscle so well developed in the arm of the blacksmith. Muscles in combination accomplish many varieties of movements, such as walking, swimming, rowing, writing, speaking, etc.

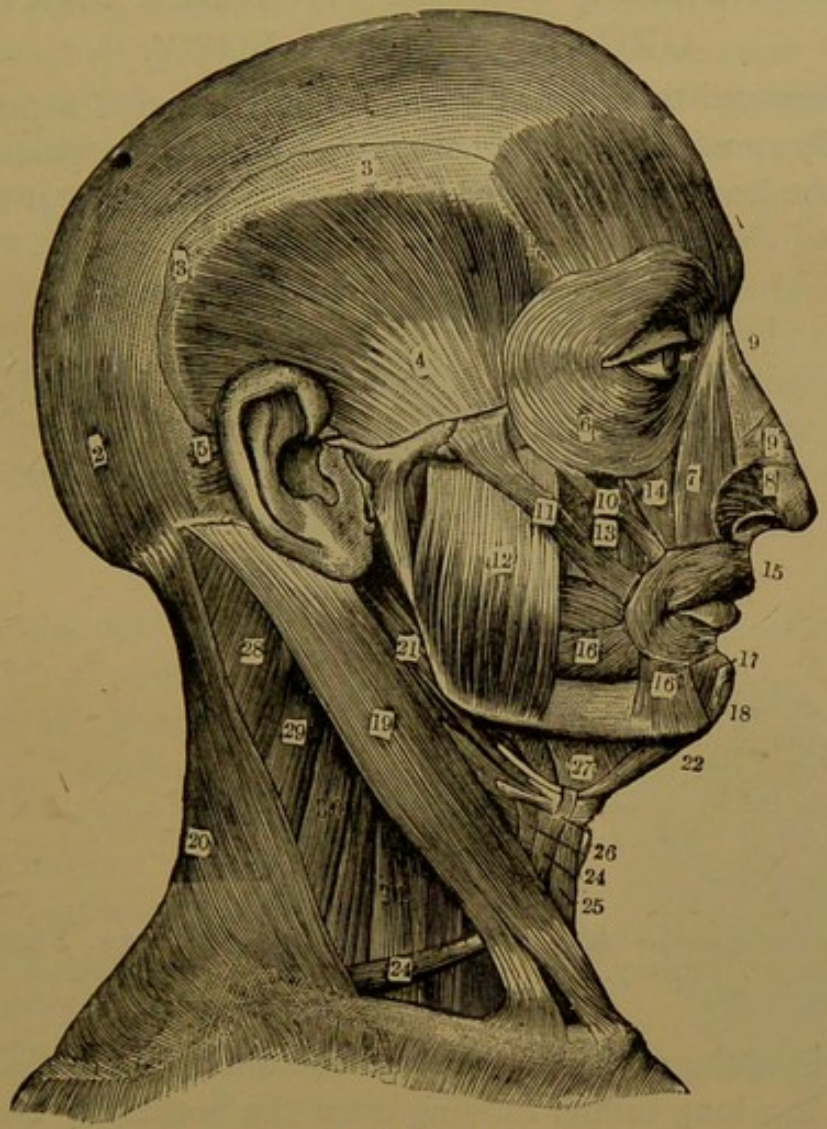


FIG. 5.—MUSCLES OF NECK AND FACE.

1 and 2. Occipito-frontalis. 6. Orbicularis palpebrarum. 12. Masseter. 15. Orbicularis oris. 19. Sterno-mastoid. 20. Trapezius. 22. Digastric. 24. Omo-hyoid.

Muscles are used not only in producing motion, but also in resisting the movement of one part upon another ; for instance, in keeping the arm straight, the teeth closed, etc. Muscles which bend a limb are called *flexors;* those which straighten a limb are called *extensors.*

The act of standing is a muscular act, for without the antagonistic action of several groups of muscles, balance would not be preserved, and it would be impossible to maintain the erect position. Many of the muscles of the face are extremely small and delicate, and the manifold expression of which the face is capable is due to their endless variations and combinations of action.

STRUCTURE AND USE OF VARIOUS PARTS AND ORGANS OF THE BODY.

To understand the internal structure and the vital arrangements of the body construction it is necessary to take it in parts. These are : (1) the head ; (2) the backbone ; (3) the trunk ; (4) the limbs.

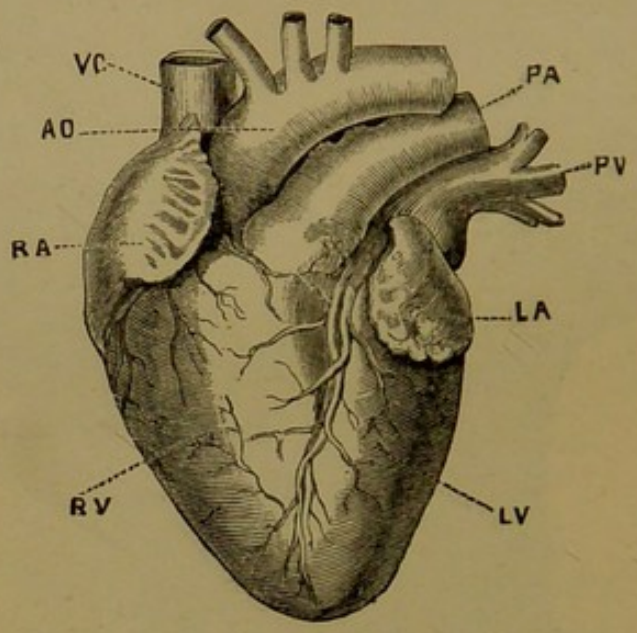


FIG. 6.—THE HEART.

VC. Superior vena cava. AO. Aorta. RA. Right auricle. RV. Right ventricle. PA. Pulmonary artery. PV. Pulmonary vein. LA. Left auricle. LV. Left ventricle.

32 In the head is the cavity of the skull containing the brain. In the backbone is a long tunnel running from the bottom of the skull to the pelvis, and in this tunnel lies the spinal cord (see p. 15).

The trunk is divided internally above the middle into two
33 cavities by a fleshy partition called the *diaphragm* or midriff. The upper cavity is called the *thorax*, or chest ; and the lower the *abdomen*, or belly.

In the chest are contained the heart and lungs, the *trachea* (windpipe) and bronchial tubes, large bloodvessels, and part of the *œsophagus* (gullet). In the abdomen are confined the stomach

and intestines, the liver, *pancreas* (sweetbread), kidneys, spleen, bladder, large bloodvessels, etc. The lower part of the abdomen, surrounded by bony structure, is called the pelvis, and encloses the bladder, uterus, the lower end of the bowel, etc.

The contents of these cavities are called *organs*. Thus, we speak of the heart and bloodvessels as *the organs of circulation;* the lungs, windpipe and bronchial tubes as *the organs of respiration;* the gullet, stomach, and intestines, and other structures, as *the organs of digestion.* Several organs are thus seen to form a set by themselves, and to serve a particular use or function, so that several well-recognised and distinct operations are performed by organs specially formed for the purpose. These operations are dependent on each other, so that the body, though working in separate departments, cannot thrive without harmonious co-operation of the whole. These departments or systems may be classified as follows: (1) the circulatory system; (2) the respiratory system; (3) the alimentary or digestive system; (4) the excretory system; (5) the nervous system.

CIRCULATORY SYSTEM.

The mechanical arrangement for the circulation of the blood consists of a pump (the heart) and a system of graduated pipes (the bloodvessels). The heart is the beginning and end of the circulation. It lies in the thorax, behind and rather to the left side of the breast-bone between the two lungs, and its tip, or *apex*, may usually be felt beating between the fifth and sixth ribs of the left side in front. It is pear-shaped, the size of a closed fist, lies with its broad end above and its tip below, and weighs about nine ounces. On cutting into it, we find a hollow organ with cross partitions, which divide it into four chambers, or cavities. These are placed two above (*auricles*) and two below (*ventricles*); or to take another view, two to right (right auricle

The Heart.

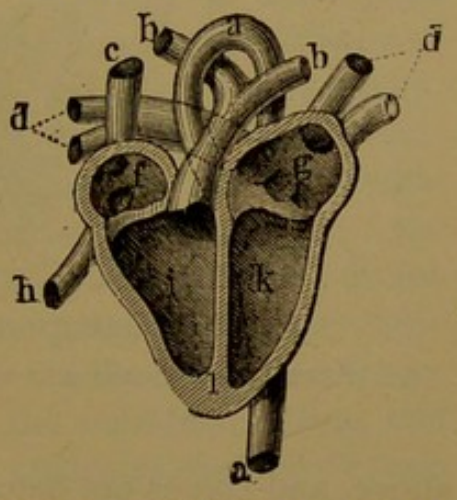


FIG. 7.—SECTION OF HEART.

a. Aorta. *b*. Pulmonary artery. *c*. Superior vena cava. *d, d*. Pulmonary veins. *f*. Right auricle. *g*. Left auricle. *h*. Inferior vena cava. *i*. Right ventricle. *k*. Left ventricle. *l*. Septum.

and right ventricle) and two to left (left auricle and left ventricle).
The heart has been compared to a force pump, for, like a pump, it
36 takes in and gives out fluid. Like a pump, also, it is fitted with valves, which prevent a backward flow of blood. The heart *receives* blood, and *discharges* blood, but there is no mixing or backward
38 flow as long as the valves are healthy. Blood enters the heart

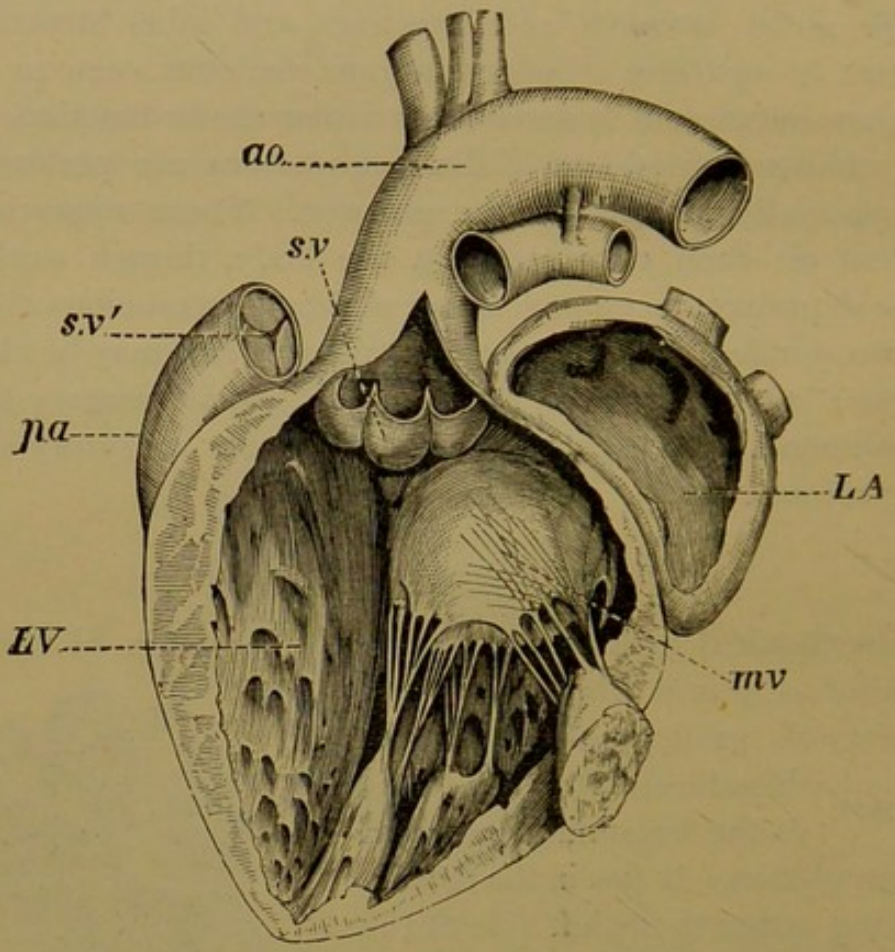


FIG. 8.—DISSECTION OF LEFT SIDE OF HEART OF MAN.

AO. Aorta. SV. Semilunar valves. LA. Left auricle. LV. Left ventricle. MV. Mitral valve.

above, and comes out below; it enters the auricles and comes out of the ventricles; therefore the auricles *receive*, and the ventricles *discharge* blood. The flow of blood *from* the heart
39 **The Blood-vessels.** and *to* the heart is conducted along a system of pipes which gradually get smaller and smaller as the distance from the heart is increased. This has been compared to the water-supply of a town or district: pipes beginning with a *main* issuing from the reservoir, then dividing into district

branches, then into street branches, and lastly into the smallest branches of all—the house branches. But the pipes of the blood circulation are not rigid; they resemble india-rubber tubes to the touch, though many are of microscopic size. Like the heart, they contain muscle in their walls, and are capable of contraction and expansion. Those which convey blood *from* the heart are called *arteries;* those 40
which convey blood *to* the heart are called *veins*. Arteries end in *capillaries* (the smallest vessels of all), so called because they are hair-like in size. Capillaries in turn end in veins, which increase in size as the branches join each other. Veins differ from arteries in having less muscle, and in having valves.

The vessels which open *into* the two auricles are all veins, for they carry blood *to the heart;* those which open *out* of the ventricles are arteries, for they carry blood *from the heart*. Into the right auricle open two veins: (1) *superior vena cava*, carrying blood from all regions *above* the heart, including the arms; (2) *inferior* 41
vena cava, carrying blood from all regions *below* the heart, including the legs. Into the left auricle open four pulmonary *veins*, two from the right lung and two from the left lung. From the right ventricle rises the pulmonary *artery*, which branches off right and left to the two lungs. From the left ventricle rises the aorta, the 42
main supply artery for the whole body. In order to understand the *route* of the circulation, we must now examine the interior of the heart more particularly. The *right auricle* has three openings: two venous openings (superior and inferior vena cava), and one 43
larger opening through the partition that separates it from the right ventricle (*tricuspid*). The right ventricle has two openings: the one just mentioned, guarded by valves to prevent blood being driven back into the auricle, and one into the pulmonary artery, also guarded by valves to prevent return flow into the ventricle. In the left auricle are four venous openings for the pulmonary veins, and a larger one through the partition which separates the auricle from the ventricle (*mitral*). The left ventricle, like the right, has two openings, one communicating with the auricle above, as on the right side, and one into the aorta, both being also provided with valves. Observe that the heart chambers have no communication between right and left, only between upper and lower chambers.

Briefly, the course of the blood in the heart is as follows: It 44

enters above (right) and emerges below (right); thence to the lungs and back; it enters above (left) and emerges below (left). The blood passing through the right chambers of the heart is impure blood from the body, which goes to the lungs; that passing through the left chambers is pure blood from the lungs, which goes to the body. Let us now follow the *route* of the circulation. Observe, first, the two large veins opening into the right auricle. They empty into it impure blood from all parts of the body. This passes through the tricuspid orifice into the right ventricle. The right ventricle then contracts, the tricuspid valves close, to prevent backward flow, and the blood is propelled into the *pulmonary artery*, the valves of which in turn close to prevent backward flow or *regurgitation*. It is then carried to the lungs, where it circulates, and then, being purified, returns to the left side of the heart, and empties itself into the left auricle. Thence it passes through the *mitral* orifice into the ventricle, which contracts and expels it into the aorta. The valves, as on the right side, come into play in the same order. Along the aorta the blood is now carried, and follows the course of the large branches which emerge from it. These branches in turn divide and subdivide, the blood passing through the various gradations in size until it reaches the capillaries, where the current becomes slower, and after a time opens into small veins. The small veins join together to form larger veins, and as they near the heart the size gradually increases, until two very large veins—the superior and inferior vena cava—become sufficient to carry all the blood into the heart.

Physiology.

45

46 We have, therefore, to distinguish two circulations—*a body circulation* and *a lung circulation*. If we follow the blood from the heart, whence it flows into the aorta, and trace it passing from larger into smaller arteries, thence into capillaries and then into veins, we shall find that as it flows along it distributes nourishment, and, in exchange for the nourishment, it drains away waste matter from the various organs through which it flows. In proportion as it receives waste does it give forth nourishment; but having reached the veins, its supply of nourishment is exhausted, the bright-red colour is gone, it is loaded with waste, and therefore impure. The blood which has left the heart pure, therefore, comes back impure. The oxygen which it received in the lungs is

given to the body to maintain life ; the carbonic acid taken from the body must be carried to the lungs, to be thrown off at every breath.* Therefore it leaves the heart a second time, and passes into the lung circulation ; and if we follow it there we find that it becomes purified by taking up oxygen from the fresh air, and throwing off a great deal of its waste matter, which is expelled into the outer air by the lungs. It returns then to the heart, and is now fresh for nourishing the body again. The blood does not derive all its nourishment from the lungs, nor does it give all its waste to them ; but this will be explained by-and-by. You will therefore understand that there are two distinct and separate streams of blood in the body—a short, circular stream between the heart and lungs, called the *lung circulation*, and a longer stream and wider circle, called the *body circulation* (*systemic*).

We must now inquire whether the heart alone is sufficient to keep up this perpetual circulation of blood day and night. Is a pump all that is required? Our answer is, No. Although the heart is as necessary for the circulation as our limbs are for movement, it requires to be assisted, and could not do its work without assistance. The heart is the force which sends the blood out of the heart ; but muscular exercise must help it back again. If the heart receives blood slowly and feebly, it must pour out blood slowly and feebly, and thus the circulation loses its vigour and the body is not well nourished. Two things are necessary for a healthy and efficient circulation : First, a sound heart and sound vessels 47
free from obstruction ; second, muscular exercise. Further, the circulation cannot be properly carried on unless all other organs, especially the lungs, are in vigorous action.

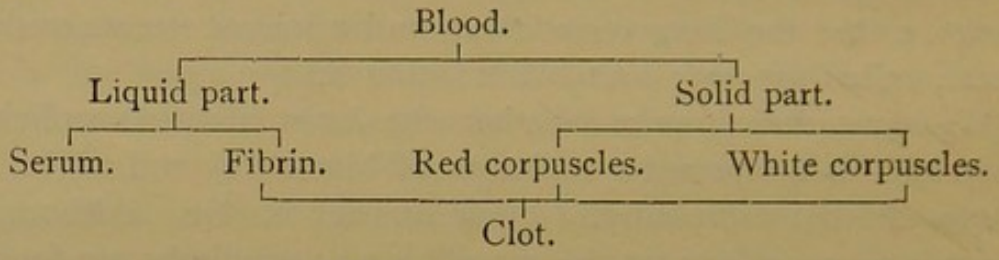
Blood consists of *blood-cells* floating in a fluid called *serum*, 48
which by itself is straw-coloured, though the blood is red. Blood-cells, or corpuscles, are of two kinds—*red cells*, which give the red colour to the blood, and *white cells*. **Blood.**
There is only one white cell for every four hundred red ones in the healthy state. The red corpuscles are the oxygen-carriers, and the bright-red colour of the blood depends on the presence of oxygen in the red blood-cells. The white cells are capable of independent movement, and they are believed to be the parents of the red cells, and to act as scavengers. The serum—or, as it is

* See also p. 29.

also called, the *plasma* of the blood—contains much nourishment in solution. It is really a liquid store for all the tissues, from which they draw what building-up material they require. The plasma is fed by the digestive organs after the food has been digested.

49 Dissolved in the plasma is a substance called *fibrin*. As soon as the blood becomes stagnant or reaches the air, it commences to clot or *coagulate* by the setting of the fibrin, which entangles the corpuscles at the same time, and thus a clot is formed. This action of fibrin is the chief cause of blood ceasing to flow after a vessel has been wounded or cut, as in a surgical operation.

50 The following table shows the composition of the blood and the formation of a clot :



Division or rupture of a bloodvessel gives rise to *hæmorrhage* or bleeding. It may be (1) arterial, (2) venous, or (3) capillary.

Arterial, bright-red blood, spurts out in jets like the jets from a water-fountain.

Venous is dark red, and the flow is not jerky, but continuous.

Capillary consists of a general oozing from all parts of the wound, and the blood is brighter than venous blood.

Before passing to the next subject, it is well to point out here the

51 position of the more important bloodvessels. The larger arteries and veins are called by particular names. The *aorta* arches from right to left after leaving the heart, and from this arch rise branches to the head and neck and the arms. Following its course downwards, the aorta continues as a large main pipe under the name of the *abdominal aorta*, giving branches to the organs, and dividing at last into two branches—the *iliac* arteries—which enter the thighs and supply the lower extremities.

Aorta and Arteries.

Beginning with *the head and neck*, we now observe particularly the names and position of the large arteries and veins : *Arteries*—(1) *common carotid*, the chief artery of the neck; it sometimes suffers in severe suicidal wounds of the neck. Below the level of

the lower jaw it divides into *internal carotid*, which enters the skull and supplies the brain, and *external carotid*, which supplies the upper part of the windpipe (the larynx), and gives off branches—*facial*, *temporal*, and *occipital*, etc.—which supply the face and scalp. (2) *Subclavian*, which lies deeper than the clavicle (collar-bone), and courses to the arm-pit (axilla) to supply the arm. *The large veins* here, as elsewhere, are generally lying side by side with the arteries, and bear the same name ; but in the neck the *external jugular* is near the surface, and in cases of obstructed circulation appears prominently beneath the skin.

Vessels of the Arm.—The subclavian artery, on entering the 52
armpit, is called the *axillary*. It courses down the upper arm, alongside the inner edge of the biceps, as the *brachial* artery, and at the elbow divides into two branches : the *radial*, which may be felt pulsating on the thumb side of the wrist ; and the *ulnar*, which may be felt less distinctly on the 'little' finger side of the wrist.

Vessels of the Lower Limbs.—The iliac artery, entering the 53
thigh at its upper end, passes downwards and inwards along the side of the thigh, as the *femoral* artery, which, behind the knee and between the hamstrings, becomes the *popliteal* artery. In the leg the popliteal artery divides into the *anterior tibial*, lying on the tibia, or shin-bone, the *peroneal*, running down on the outside of the leg, and the *posterior tibial*, embedded beneath the muscles of the calf. These all, directly or indirectly, contribute to the circulation of the foot and ankle. It is necessary that these arteries should be localized in the living body, and therefore no attempt at more precise description of their positions is made here. Every volume of blood pumped by the heart into the arteries should produce a 54
pulse, so that for every heart-beat we should have a pulse-beat. The pulse enables us to judge how the heart does its work—whether it pumps too slowly or too quickly, whether it is strong or weak, full or empty, regular or irregular.

The average number of pulse-beats in the minute is seventy for a man and eighty for a woman.

THE RESPIRATORY SYSTEM.

The organs of respiration are the lungs and air-passages. The
55 air-passages are: (1) the *larynx* (or voice-box), which can be easily seen and felt beneath the lower jaw. Continuing downwards, the air-tube is called the (2) *trachea* (windpipe), which, having descended through the neck and entered the thorax, divides into two branches—(3) the right and left *bronchus*—going to the lungs, where they branch and subdivide

Air-passages.

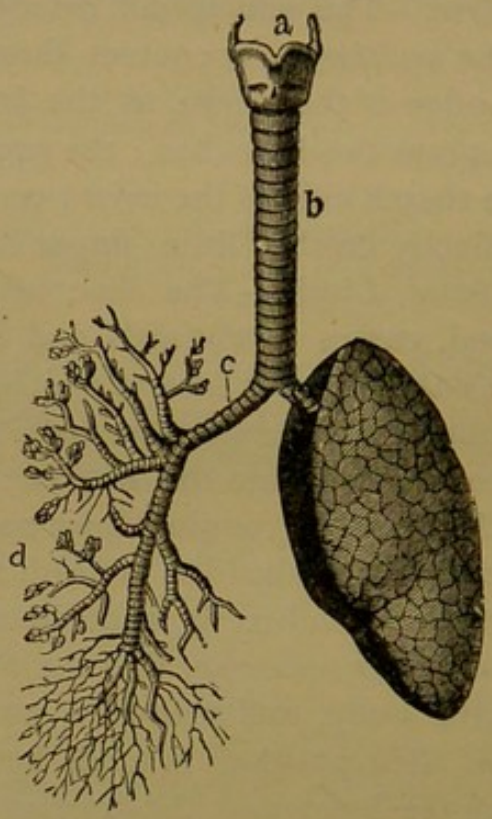


FIG. 9.—LUNGS AND WINDPIPE.

a. Larnyx. *b*. Trachea. *c*. Bronchus. *d*. Smallest branches of the bronchus.

again and again, finally entering the (4) *air-cells* as delicately minute air-tubes of microscopic size.

56 The lungs are of spongy consistence, and in early life are of a delicate pink colour. They acquire a darker colour as life advances. When squeezed, they give forth a fine, creaking sound, due to escape of air from the air-cells; but when pressure is relaxed they expand. Each lung has a delicate, glossy covering called the *pleura*, which also lines the chest and

Lungs.

the upper part of the diaphragm, and being lubricated by a secretion, allows of easy expansion without undue friction against the walls of the chest. When healthy, the lungs float in water; hence the familiar name of 'the lights.' The lungs are two in number, and are placed in the chest, right and left, the top, or 'apex,' of the lung lying underneath the clavicle (collar-bone), and the 'base,' a broad expanse of lung-substance, covering the upper surface of the diaphragm (or midriff).

A factor of some importance in respiration is the elasticity of the lungs, which is mainly due to a peculiar structure only seen in the lungs, and which consists in the grouping together in clusters (like grapes) of extremely minute air-cells, which have elastic fibres in their lining walls, and except during expiration are open or distended. These air-cells are connected with the wind-pipe (as mentioned above), and when air is breathed it is drawn in to all the air-cells. Now, over the surface of the air-cells run capillaries carrying impure blood; the air and the blood make an exchange: the air gives oxygen gas to the blood, and the blood gives carbonic acid gas to the air.

Respiration consists of three stages: *Inspiration*, when air is drawn in; *expiration*, when air is expelled; and a *pause*.

Mechanism of Respiration.

During inspiration the diaphragm contracts and is drawn down, and the chest-walls are pulled up; the lungs, following these movements, expand, and air rushes in. During expiration the diaphragm ascends, the chest-walls descend, and the lungs, in virtue of their elasticity, recoil; air is therefore expelled through the bronchi and wind-pipe.

The act of respiration, therefore, is mainly carried on by the diaphragm and the muscles of the chest-walls (the *intercostals*). But the abdominal muscles also help in expiration, for if they are forcibly contracted on the contents of the abdomen, the latter push up the diaphragm, and thus help to squeeze the air out of the lungs. Women who lace tightly deprive themselves of this great aid. Bear in mind that during inspiration the diaphragm descends and the ribs ascend; during expiration the diaphragm ascends and the ribs descend.

Fresh air contains a large supply of the oxygen gas necessary for healthy respiration. Expired air is impure; for, besides contain-

ing less oxygen than is necessary for life, it contains a poisonous quantity of carbonic acid gas.

Ordinary fresh air is of fairly uniform composition; it consists chiefly of a mixture of three gases—*nitrogen*, *oxygen* and *carbonic acid*—with a variable quantity of watery vapour. The following table will roughly show their respective quantities :

Nitrogen	...	...	...	...	79 parts per cent.
Oxygen	...	...	...	...	21 ,, ,,
Carbonic acid		...	...	...	·04 ,, ,,

In this country watery vapour averages 1·40 parts.

The impurities of the atmosphere are not only an increased quantity of carbonic acid due to overcrowding of people and dwellings in towns with want of sufficient ventilation; but there may be also present minute harmful bodies called micro-organisms.

Thorough ventilation admits a plentiful supply of fresh air and expels an equal quantity of bad air. It is, therefore, important to secure free movements of air—of fresh inwards, and impure outwards. In this way only can the lungs be well supplied and do their work thoroughly.

59 In health the adult breathes from fifteen to eighteen times a minute, children from twenty to twenty-five; but breathing is more rapid during and after exertion or excitement.

To resume, note the following facts :

(1) Under healthy conditions we inspire pure air, and expire impure air.

(2) Under healthy conditions the lungs receive impure blood and send back pure blood.

(3) Pure air helps to make pure blood, and impure blood makes impure air.

(4) The more the lungs expand, the more air they take in, and the better the blood is purified.

THE ALIMENTARY SYSTEM.

The alimentary system receives food, digests it, feeds the circu- 60
lation, and discharges the refuse from the bowels. Its apparatus begins with the mouth, ends with the lower end of the bowel—the *anus*—and consists essentially of an open tube (*alimentary canal*), closed at certain points by muscular rings, or valves, and extending (from mouth to anus) a distance of nearly thirty feet.

We may conveniently regard this long tube as composed of three lengths : *first*, from the mouth through the *pharynx* (back of throat) to the *œsophagus* (gullet), which is narrower, lies behind the windpipe, and descends through the diaphragm into the stomach. *Second*, the *stomach*, which is an expanded portion of the tube—a large bag intended as a temporary receptacle for the food. *Third*, the *intestines*, consisting of the *small intestine*, about twenty feet long, which ends below in the *large intestine ;* the latter is five or six feet long, and terminates in the *anus*. The whole tube is called the alimentary canal.

Associated with the alimentary canal are two other important 61
organs, the *liver* and the *pancreas* (or sweetbread).
Liver. The liver communicates with the upper end of the small intestine (*the duodenum*) by means of the *gall-duct*, which pours bile into the duodenum during the process of digestion. **Pancreas.** The pancreas also communicates with the duodenum by means of a similar tube, called the *pancreatic duct*, which pours pancreatic juice into the duodenum.

The liver and pancreas are large glands, lying in the abdomen near the stomach, which exercise a function common to all glands —that of *secretion*, of which more by-and-by. But we must take note of other glands concerned in digestion as well, and, beginning with the mouth, we shall take them in their order downwards.

There are *salivary glands* which pour saliva into the mouth ; 61
of these the *parotid* glands, lying in front of the ears, are the most important ; *gastric glands*, which are numerous microscopic tubes opening into the interior of the stomach ; **Glands.** *intestinal glands*, also microscopic tubes, opening into the interior of the intestine.

Order of Digestion.

To follow intelligently the order of digestion, we must observe in their turn the various parts concerned in the digestive process. We begin with the mouth, which
62 receives food. Observe the muscles of the jaws and the teeth for chewing, the salivary glands for providing saliva, the

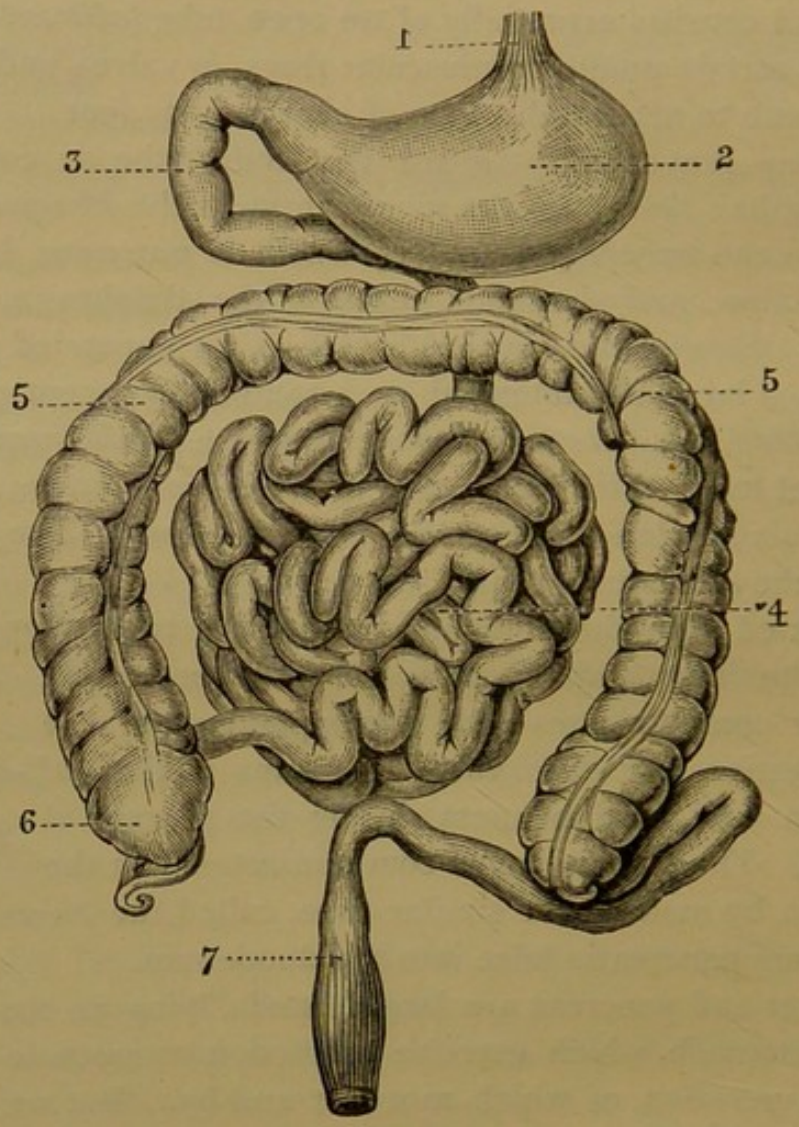


FIG. 10.

1. Lower end of gullet. 2. Stomach. 3. Duodenum. 4. Small intestine. 5. Large intestine. 6. Cæcum. 7. Bowel ending in anus.

tongue for rolling the food about and throwing it backwards, the muscular parts of the throat for forcing the food backwards and downwards, and the *epiglottis*, or valve, for preventing the food being carried into the windpipe. The pharynx and gullet are muscular tubes, lined with a smooth, glossy membrane, that

allows of the food gliding easily down. The pharynx is the more capacious, and connects the mouth above with the gullet below. It has voluntary muscle, while the gullet has involuntary muscle. The stomach comes next, and its shape is familiar to those who have seen the bagpipes, which are really the stomach of a pig. It is narrowed at the two extremities, and can be closed or opened by the contraction or relaxation of muscular rings. It is a muscular bag lined with a smooth, shining membrane, and having an outer coat covering the muscle. On the internal surface are numerous openings visible under the microscope, which are the outlets of the gastric glands.

At the lower or *pyloric* end, the stomach opens into the duodenum, and thence the channel is free all the way to and along the large intestine. The intestines resemble the stomach in structure, having three coats—an inner glossy (mucous), a middle muscular and an outer (peritoneal). They have also minute orifices on their internal surface, from which ooze out the juices of the glands. At the anus another muscular ring is found, called the *sphincter*.

The facts about digestion can best be understood by first considering the varieties of food. Two purposes are served by alimen- 63
tation. *First*, the building up or repair of organs and tissues ; for wear and tear is always going on. *Second*, **Physiology.**
the supply of fuel for the production of bodily energy and heat. Foods may be classed thus :

(1) *Albuminous* (nitrogenous). Examples : white of egg, lean meat, caseine of cheese or milk, gluten of **Classification of Foods.** 64
flour or oatmeal.

(2) *Fats* (hydro-carbons). Examples : oil, cream, fat, lard, butter.

(3) *Starches and sugars* (carbo-hydrates). Examples : potatoes, rice, sugar, beetroot.

(4) *Minerals and water.* Examples : soda, common salt, lime (phosphate), magnesia and liquids.

The glands are well supplied with blood, and from certain materials selected from the blood they secrete, or manufacture, fluids having properties of their own. Thus, we have gastric glands, salivary glands, etc., which prepare fluids peculiar to themselves, and having a precise chemical **Digestive Fluids.**
character and function. The digestive fluids, which are secreted by glands, are : (1) The *saliva*, which acts on starchy 65

foods. (2) The *gastric* or *stomach juice*, digesting such things as white of egg, lean meat, and other albuminous foods. (3) The *bile*, which enters the duodenum and reduces fats to a soapy condition, and so fits them for absorption. (4) The *pancreatic juice*, which also flows into the duodenum and acts on albumins, like the gastric juice; but, like the saliva, it also acts on starchy foods, and, like the bile, reduces fatty food to a state fit for absorption. (5) The *intestinal* or *bowel juice*, which acts like the pancreatic juice, though more feebly.

65 We now follow the stages of the alimentary and digestive process in regular order.

First comes chewing and salivary digestion, which takes place in the mouth, where starchy food is partially converted into sugar.

The food is here converted into a pulpy and soft mass (*bolus*), after which it is swallowed. The various steps in the act of swallowing are: The jaws coming together, the tongue rises to the roof of the mouth, presses the bolus backwards into the throat, where it is gripped by the muscles of the palate, which send it further back into the grip of the muscles of the pharynx, which 'hand-over-hand,' as it were, close upon it and send it into the gullet. Here it is acted on by involuntary muscle, and reaching the upper (cardiac) end of the stomach, the muscular ring, already described, relaxes, and it passes through into the stomach. The ring then closes tightly to prevent it coming back to the mouth again.

Swallowing.

As soon as food enters the stomach, the gastric juice wells out and pours over it, the muscular walls contract, and the stomach moves from side to side so as to churn the food and expose its every particle more freely to the action of the gastric juice.

Gastric Digestion.

After an interval of three to five hours the food-pulp, which in the stomach is called *chyme*, pours through the lower (pyloric) opening into the duodenum, where it is called *chyle*. Here, and lower down, it meets in turn with the remaining digestive juices, which act upon it, while the intestinal tube rolls about, worm-like, and passes it gradually on until it is fully digested and the waste is expelled through the lower bowel.

Intestinal Digestion.

Absorption of digested foods may take place through the lining membrane of the stomach and intestines into the capillaries, or

small veins ; except the fat, which cannot be absorbed as fat, but 66
has to be made into a soap, which then passes into special tubes for the purpose, lying in the lining of the small intestine. These tubes, called *lacteals*, carry the fatty soap into the lymphatic glands, through which it filters and ultimately, by channels called *lymphatic* tubes or vessels, enters into the blood circulation. The lymphatic circulation is a separate system ; but it is intimately connected with the blood circulation, acting both as a drain from the tissues and a direct feeder by means of a duct (*thoracic duct*), which enters the blood circulation in the neck.

Absorption.

The principal facts here stated concerning digestion and absorption are set out in the following table :

Alimentary Canal.	*Secreting Glands.*	*Secretions of Glands.*	*Class of Food acted upon.*	*Conversion.*	*Absorption.*
Mouth.	Salivary glands (parotid, etc.).	Saliva.	Cooked starches.	Sugar.	Into capillaries of stomach and intestines.
Stomach.	Gastric glands.	Gastric juice.	Nitrogenous (albuminous).	Peptones.	Into capillaries of stomach and intestines.
Duodenum.	Liver.	Bile.	Fats.	Emulsified and saponified.	Into lacteals.
	Pancreas.	Pancreatic juice.	Starches. Albuminous.	Sugar. Peptones.	Into capillaries of intestines.
			Fats.	Emulsified and saponified.	Into lacteals.
Small intestine.	Intestinal glands.	Intestinal juice (succus entericus).	Action similar to pancreatic juice, but weaker.		
Large intestine.	The process of digestion ceases with the small intestine, but the process of absorption continues in the large intestine.				

There is a stage of assimilation by the organs and tissues which take up nourishment from the blood *plasma*, and convert it into part and parcel of the tissue, or use it up in force production, as, *e.g.*, in muscular exercise. 66

Assimilation.

EXCRETORY SYSTEM.

The digestive fluids which have just been described are secretions, and it may be well here to pause and consider (1) what is a secretion, (2) what is an excretion.

(1) A *secretion* is the product of any gland which has yet its function to perform. (2) An *excretion* is the product of any gland which has already performed its duty, and is therefore waste matter to be got rid of in various ways, viz. :

By the Bowels. (1) *By the bowels;* the waste and refuse of the digestive process, with other matters thrown into the intestines, are eliminated in this way.

(2) *By the kidneys.* These are two small organs shaped like a French bean, weighing from four to five ounces each, and situated in the loins ; ducts (the *ureters*) pass from them to the bladder. The kidneys are constructed to remove various waste matters, urea, uric acid, etc., from the blood, and to drain them off in solution along the ureters into the bladder.

By the Kidneys.

(3) *By the skin*, which, as already stated, has sweat-glands. These also are part of the drainage system of the body, excreting water, carbonic acid gas, and some urea.

By the Skin.

By the Lungs. (4) *By the lungs*, which throw off carbonic acid gas and organic impurities by expiration.

Excretion is a very important function, and is as essential to the wholesome exercise of bodily function as free drainage is to the sanitary condition of a dwelling-house.

DUCTLESS GLANDS.

Whereas all the glands and organs that have previously been described in this book are supplied with tubes or ducts to carry off their products as secretions or excretions, there are certain glands or organs not so provided.

The principal of these are :

(1) The *Spleen*, a soft organ about the size and shape of the kidney, placed in the abdomen above the left kidney. One of its

functions is to make new white corpuscles, and destroy worn-out old red corpuscles.

(2) *Lymphatic Glands.*—These are small bodies situated in various parts of the body, being especially numerous in the neck, thorax, abdomen, axilla, and groin. They act as guards in the course of the lymphatic vessels to prevent the further absorption of poisonous materials.

(3) *Thyroid Gland.*—This consists of two lobes or masses situated in the neck on either side of the larynx and trachea, and joined together by a narrow piece called the *isthmus*. Its function is still a matter of some obscurity; but one or both lobes are frequently found enlarged, as in goitre, Graves' disease, etc. In Derbyshire and in the valleys of Switzerland people with enlarged thyroid glands are frequently seen.

THE NERVOUS SYSTEM.

The nervous system includes (1) the brain, (2) the spinal cord, 68
(3) the sympathetic chain, (4) the nerves.

The brain lies in the cavity of the skull, and weighs from forty to fifty ounces. It feels like and looks like a large mass of putty moulded to its particular shape. It has a bewildering **The Brain.**
appearance of furrows and folds, which give to it its distinctive appearance. These folds or ridges are the *convolutions* of the brain, and all have a precise position and relation to each other, and have their special names. The brain may be regarded 69
as composed of three large parts: (1) The largest, called the great brain or *cerebrum;* (2) a smaller, called the lesser brain or *cerebellum*, especially developed in animals; and (3) what may be called the intermediate or junction brain, which includes the *medulla* and *pons*. By means of this intermediate brain, the great brain communicates with the lesser brain, and the spinal cord with both. The brain in any part consists essentially of two kinds of structure, 70
grey matter and *white* matter. The grey matter is the covering of the brain, and is found in the convolutions. The white matter is enclosed by the grey matter. Through it are scattered small masses of grey matter. The grey matter contains nerve-cells, the white matter nerve-fibres; and a cement substance (*neuroglia*) binds them together.

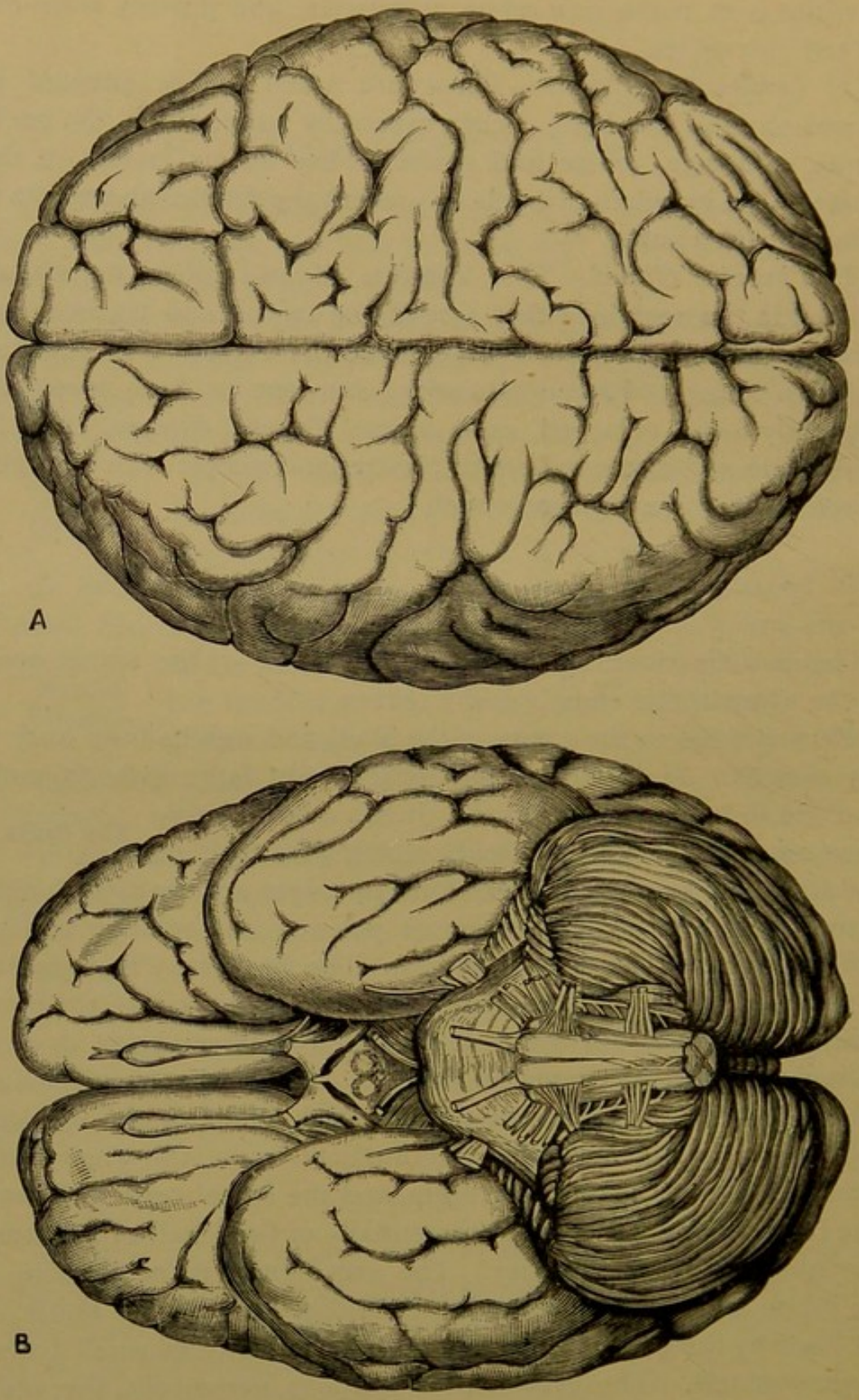


FIG. 11.—HUMAN BRAIN.

A. Upper surface of brain, showing convolutions of cerebrum. *B*. Under surface of cerebrum, cerebellum, medulla, and pons.

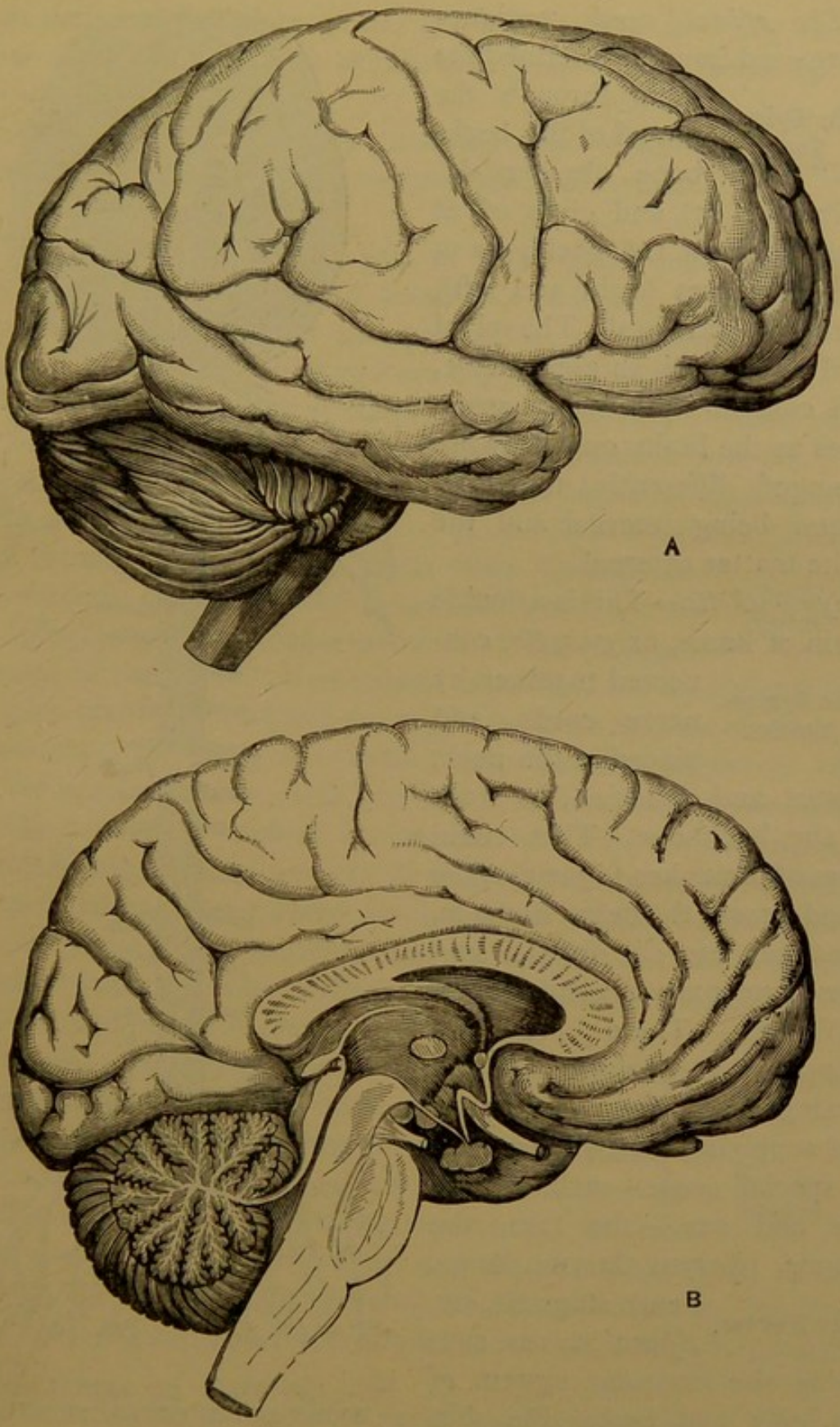


FIG. 12.—HUMAN BRAIN (*continued*).

A. Side-view of brain (right side), showing cerebrum, cerebellum, and medulla.
B. Section of brain through the centre.

71 *The spinal cord* continues downward from the intermediate brain through the tunnel of the backbone already described (p. 15), and gives off at every joint of the backbone a pair of nerves (right and left), thirty-one pairs in all. The spinal cord has a whitish appearance, and consists of the same structures as the brain, only they are arranged differently, the grey matter being internal and the white matter external.

The Spinal Cord.

72 *Sympathetic.*—This is a double chain of knots, or *ganglia*, connected together by nerve cords, and placed in the neck, thorax, and abdomen, in front of the backbone. This chain gives off branches to the eye, the bloodvessels, the heart, stomach, intestines, etc.; in fact, it supplies involuntary muscular fibre.

The Sympathetic.

73 *Nerves.* — There are two groups: (1) *Cranial nerves* coming direct from the brain, and supplying chiefly the organs of special sense—such as the eye and ear — the face, the tongue, pharynx, larynx, lungs, heart, stomach, etc. *Spinal nerves*, supplying the muscular system of the body and limbs, the skin generally, joints, etc. Nerves are delicate thread-like structures, as seen when teased out

The Nerves.

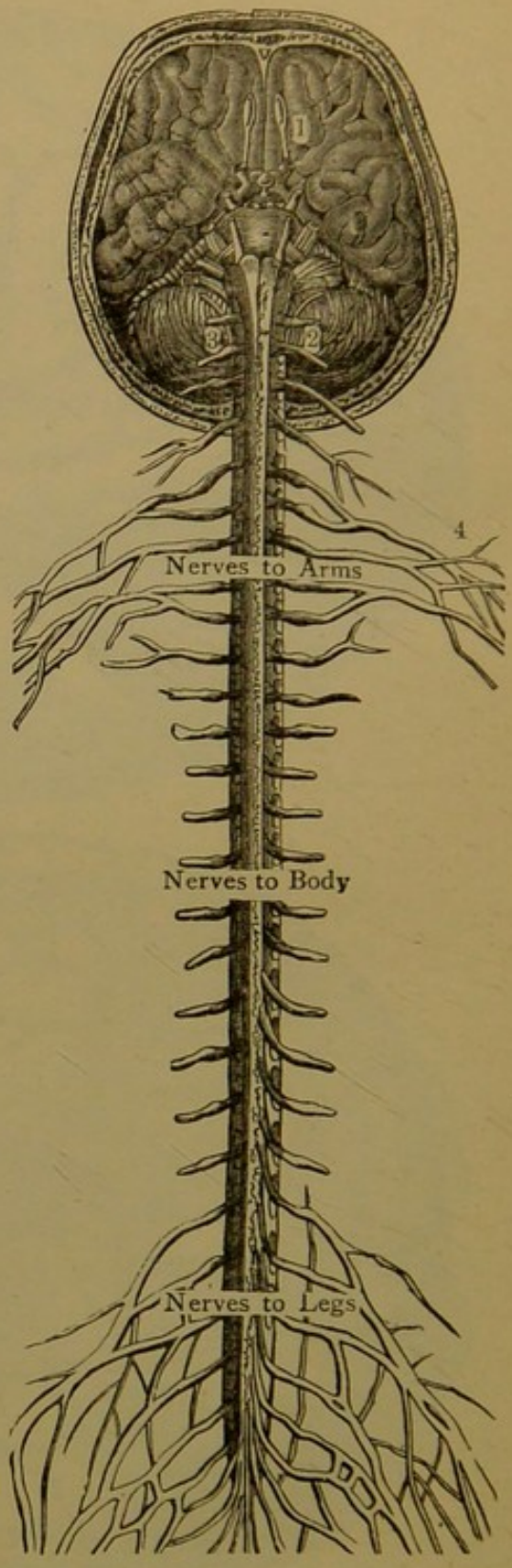


FIG. 13.—VIEW OF SPINAL CORD, SHOWING ITS CONNECTION WITH THE BRAIN.

1. The cerebrum, or brain proper. 2. The cerebellum, or lesser brain. 3. The medulla oblongata. 4. The cervical nerves.

from their bundles ; but as they leave the spinal cord the bundles have a distinct cord-like appearance before they break up into branches.

Physiology.

The nervous system is the most important of all the systems of the body. It presides over and regulates the action of the others.

74

The great brain is the seat of three great functions—*mind*, *motion*, and *sensation*. (Of *mind* we shall say nothing in this chapter.) It receives in its grey matter sensations from all parts of the body and from the internal organs, and from its grey matter it starts impulses, which are conducted to the muscles of the body and produce muscular movements. For the exercise of these two functions two sets of nerves are necessary, *motor* nerves and *sensory* nerves. Motor nerves conduct impulses from the grey matter of the brain down through the intermediate brain and the spinal cord, and out by the spinal nerves, to be distributed to all the voluntary muscles of the body. Understand that these nerves operate from the grey matter of the brain *by an effort of will*, and set the muscles in motion. The muscles so acting are, therefore, *voluntary*—that is, they act in obedience to the will. Without nerve connection muscles would be useless for movement. The starting-point of voluntary muscular movement is in the grey matter of the brain. When a patient is paralysed so that he is unable to lift hand or foot, the causes are generally not in the muscles, but in the nervous system. It may be due to disease in the brain, in the spinal cord, or in the course of the nerves.

Cerebrum.

75

Motor Nerves.

The seat of sensation is in the grey matter of the great brain, but the starting-point is in the extremities of the nerves. It may be in the skin, in muscles or bone, or elsewhere. Thus, a boil on the arm is painful, we feel it, and can put our finger on the sore spot, but we cannot feel it if the nerve connection between the boil and the brain is broken. Every throb of inflammation in the boil is communicated to the brain along a nerve, and only when it reaches the brain are we conscious of pain.

75

Sensory Nerves.

Observe, therefore, that the great brain is connected with the body by two sets of nerves, motor and sensory. Motor nerves conduct impulses from the grey matter of the brain to the muscles.

Sensory nerves conduct impulses from the skin and other parts in the opposite direction—that is, to the grey matter of the great brain. There are many kinds of sensation. Take the following as
76 examples : (1) Sensation of heat, (2) of cold, (3) of pain, (4) of effort (muscular sensation). There are also special forms of sensation, commonly called the *senses*.

The Senses.

The senses are important functions, and are very liable to disorder among the insane. They are sight, hearing, touch, taste and smell. Each sense has what is called an end organ outside the brain, and this end organ is connected to the grey matter of the brain by a particular nerve of its own. The end organ of sight is the eye ; the end organ of hearing is the ear ; the end organ of smell is a delicate membrane lining the nose ; the end organ of taste is the covering of the tongue; and the end organs of touch are to be found in the skin.

The great brain is, therefore, very intimately connected with the body, and you can conceive a multitude of nerves spreading out from it and the spinal cord to embrace and bring into communication with it all the structures and organs of the body. You cannot have an ache or a pain, a change of temperature, a sense of weariness or discomfort, but the great brain knows it. If you are conscious of sounds falling upon the ears, of objects passing before the eyes, it is because the great brain knows it. While you are awake it knows everything ; while you are sound asleep it knows nothing.

The great brain has two halves, a right and a left. The right starts the movement, and receives the sensations of the *left* half of the body. The left does likewise for the *right* half of the body.

77 The lesser brain is the centre for the balancing movements of the body. It enables a man to have his whole muscular system so poised and counterpoised that a perfect balance is maintained when he stands or walks. In this way the movements of the body are regulated, and there is no staggering or unsteadiness in locomotion.

Cerebellum.

77 The intermediate brain exercises what are called vital functions ; that is, functions absolutely necessary to life. In it lie the centres for respiration and the circulation, as well as for other bodily functions, and if it is the seat of injury or disease, such as apoplexy, life may cease suddenly.

Intermediate Brain.

The spinal cord is the continuation from the brain to the nerves

of the body, its white substance consisting of white fibres conducting impulses upwards to the brain or downward from the brain ; but in its grey matter it is also the centre of an important 78
function called *reflex action.*

Reflex action is a function of muscle and nerve combined. It is a movement made, without the intervention of the will, on the reception of a sensation. In order to get it, there must be a sensory nerve to take the impression, a healthy nerve-cell in the brain or spinal cord to receive it, and a motor nerve to take back the impulse given by the cell to the muscle. Reflex action is shown in a variety of ways, both in health and in disease.

Thus, a man may be paralyzed in both legs, and yet you may cause them to move if you tickle the soles of his feet. The reason of this is that there is disease in the spinal cord, which obstructs the impulses to and from the brain, but does not obstruct the passage to and from the spinal cord lower down than the seat of disease. Take another illustration of reflex action, viz., in a man who swallows, though he is unconscious from apoplexy ; though you speak in his ear he does not hear you —he is unconscious, and utterly incapable of his own will to do anything for himself. Tell him to swallow, he does not hear you ; he cannot put out his tongue because he has no consciousness nor will to do so, but drop some liquid in his mouth, the tongue moves, throws back the liquid into the pharynx, and it is swallowed. This movement, therefore, is done without help or hindrance from the will. It is called *reflex action.*

Reflex Action. 79

When the soles of the feet are tickled, and the legs move, though they are really paralyzed to voluntary motion, the centre of reflex action is in the spinal cord. In the case of swallowing, the centre of reflex action is in the intermediate brain. There are also centres of reflex action in the sympathetic system, and these centres regulate the contraction and dilatation of the bloodvessels, the process of digestion, and many other functions.

GENERAL OBSERVATIONS.

We have now dealt with the several systems of the body, and observed how they act and react upon each other. The muscular system depends for its stimulation on the nervous system, which is the connecting link between all the systems of the body. Observe

also how the other functions are dependent on each other. The organs of digestion and respiration supply nourishment to the circulation; the circulation distributes nourishment to all parts of the body; the hungry tissues feed upon this nourishment, and throw their refuse back into the circulation, and the circulation discharges its waste matter into the channels provided for draining it away.

It is necessary to make a few observations on such matters as the temperature and weight of the body, waste and repair, and sleep.

80 **Temperature.** If you take the temperature of a healthy person by placing the thermometer in the armpit, it registers as nearly as possible 98·4°. This is called the normal temperature, but it has variations in disease, and you will find in asylums that the average temperature is lower than this, though there are cases, as in general paralysis, after epileptic seizures, and in feverish conditions, where the temperature is above 98·4°. It is a remarkable evidence of the perfect design and harmony of the human body and its vital processes that whether a man be asleep or waking, whether digesting or fasting, whether during exercise or repose, his temperature is always evenly balanced, and scarcely varies up or down. One principal reason of this, as has been already mentioned, is the regulating action of the skin and sweat-glands.

Bodily heat chiefly results from the chemical changes taking place after the reception and digestion of certain foods—principally fats and starches (see p. 33)—and though, as said, it is maintained at nearly the same point in health and in healthy circumstances, yet it can be lost by the lungs and skin faster than it is formed, under exposure to cold.

81 **Sleep.** Sleep has been well described as 'closing for repairs.' While we are awake and active, repairs are going on; but the supply after a time falls short of the demand, and the body requires to lay up when night comes, so as to make good the deficiency in time for the next day's work. During sleep the bloodvessels in the brain contract and are comparatively empty. Sleeplessness, on the other hand, principally depends on there being too much blood in the brain. The nerves which regulate the size of the bloodvessels from time to time, acting in harmony with all other nerve-systems, ensure in a healthy person the proper amount of contraction. But these nerves (which are called *vaso-*

motor, and belong to the sympathetic nerve system) are very liable to be irregular in action, and are, so to speak, much under the dominion of the various organs and systems of the body. The irregularity of action is principally in the direction of remaining open instead of contracting, or of remaining contracted for too short a period. As long as this is continued, sleep of a proper character is denied. Sleep is encouraged by exercise in the open air, by regular hours, quietness, calmness of mind, a cool, airy bedroom, a comfortable bed, etc.

Weight is an excellent index of bodily health, and is an exceedingly valuable means of ascertaining the condition of patients in asylums. 82
A certain standard of height and weight is recognised by insurance companies as normal and healthy, but there are variations according to the particular constitution of the individual, and too much value must not be attached to these mechanical standards. It is of more importance to observe changes in the weight of the same individual ; but you will also find out that he or she may vary several pounds in a year, losing and gaining by turns, without any serious impairment of health. Weight is an indication of how the nourishment of the body is being maintained, and enables us to say whether wear and tear is in excess, or is being met by the digestion and assimilation of new material.

Weight.

A man's body, then, is simply a bank account of loss and gain, of waste and repair. The more he takes out of himself, the less he has to spare, and the more he requires to make up. Every organ must have reasonable exercise, and waste and repair should balance each other. We are here again face to face with our duties to the insane ; for many of them have overdrawn and are overdrawing their bank account, and we must try and recover the balance for them. A great deal lies in our power to remedy this state of matters. The risk of death from exhaustion is often great, and sound refreshing sleep and frequent meals are absolutely necessary to tide over the crisis. Here are placed side by side a scale of waste and a scale of repair, which should be carefully studied.

Causes, signs, or results of

83 WASTE.

Failure to take food.
„ to take proper food.
„ to absorb food.
„ to assimilate food.
Vomiting and diarrhœa.
Discharges from wounds, sores, or ulcers.
Loss of blood.
Wasting diseases, such as
Cancer,
Consumption,
Diabetes.
Excitement, if severe or prolonged.
Intense depression.
Loss of sleep.
Increase of temperature.
Loss of weight.
Loss of strength.
Pallor, thinness, and haggardness of face.
Skin unnaturally sweating or unnaturally hard and dry.
Etc.

Circumstances contributing to and signs and results of

84 REPAIR.

Thorough and painless mastication and digestion of food.

Absence of diarrhœa, vomiting and unnatural discharges.

Quiet habits of mind and body.

Cheerfulness, hopefulness, and sufficient refreshing sleep.

Normal temperature.

Increase of weight where it has fallen below normal.

Maintenance of weight at the normal point or a little above it.

Maintenance of strength in proportion to size and weight.

Healthy, well-nourished, and well-coloured appearance.

Moist and smooth skin.
Etc.

QUESTIONS ON CHAPTER I.

PART I.

1. What do you understand by anatomy and physiology?
2. What is the meaning of the word 'function'?
3. Name the bulky materials which make up the structure of the body.
4. How are these arranged?
5. Name some of the smaller materials.
6. Where are these found?
7. Into what parts may the skin be separated?

8. Name the glands of the skin, and give their uses.
9. What are the functions of the skin?
10. What are the functions of fat?
11. What is muscle?
12. What are sinews or *tendons?* What are they like?
13. What is meant by the words *voluntary* and *involuntary?* Give examples of voluntary and involuntary muscles.
14. What is peculiar about the heart-muscle?
15. What is the appearance of bone when sawn across?
16. What are the functions of bone?
17. What three kinds of bones are there? Give examples.
18. How many bones form the cranium?
19. Name and give the positions of the cranial bones.
20. What is the spinal column?
21. What is a vertebra? How many are there? Give their names and position.
22. What bones form the framing of the chest?
23. What is cartilage?
24. What are false ribs, and what are true ribs? What are floating ribs? Give the number of each.
25. What bones form the shoulder? Describe their position.
26. What two bones form the shoulder-joint?
27. What are the bones of the forearm? Which has the larger joint at the elbow, and which at the wrist?
28. How is the hip-joint formed?
29. What bones form the knee-joint? What is the patella, and where is it placed?
30. Name the two most freely movable joints. Which has the wider range of movement?
31. Which is the *deltoid* muscle? Which is the *biceps?* Give examples of movements made by muscles.
32. What is contained in the cranium? What is contained in the backbone?
33. What are the cavities of the trunk? How are they separated from each other, and what do they contain?
34. What are the organs of circulation?
35. Describe the outward appearance of the heart, and state where it lies.
36. Why has it been compared to a pump?

37. Describe its internal appearance and name its parts.

38. Where does the blood enter, and where does it come out?

39. Along what channels is the flow of blood conducted?

40. Distinguish between an artery, a vein, and a capillary.

41. What veins enter the heart? Where do they enter?

42. What arteries leave the heart? Where do they emerge?

43. How many openings has each chamber of the heart? Where do they lead to?

44. Describe briefly the course of the blood in the heart. Which is pure and which impure blood?

45. Describe the whole route of the circulation.

46. What changes take place in the quality of the blood as it flows along? What changes take place in the lungs? What are the two circulations?

47. What things are necessary for a healthy circulation?

48. What materials is blood composed of, and what are the uses of these materials?

49. What is fibrin? How is blood-clot formed?

50. What is hæmorrhage? Distinguish arterial, venous, and capillary hæmorrhage.

51. What is the aorta? Where does it lie? What branches does it give off?

52. Name the principal arteries of the arm.

53. Name the main arteries of the thigh and leg.

54. Which is the familiar pulse artery? How is the pulse produced? State the average pulse for a man and for a woman.

55. What are the organs of respiration? What are the air-passages?

56. Describe the lungs. Why are they popularly known as 'the lights'? Describe the air-cells.

57. Describe the movements of *expiration* and *inspiration*.

58. In what way does ventilation help respiration?

59. What is the rate of respiration in (1) the adult, (2) the child?

60. Into what parts is the alimentary canal divided? What organs communicate with it in the abdomen, and how?

61. Name different kinds of glands.

62. Describe in their order the various parts concerned in the digestive process.

63. What two purposes are served by alimentation?

64. Into what four classes may food be divided? Give examples of each.

65. Name the digestive fluids, and state their respective functions.

66. What are the several stages of digestion? What is assimilation?

67. What is excretion? Name the organs of excretion, and state briefly their uses.

68. What are the principal parts of the nervous system?

69. What are the principal parts of the brain? How do they communicate with each other and with the spinal cord?

70. What kind of matter composes the brain?

71. Where lies the spinal cord? How many pairs of nerves come out of it?

72. What is 'the sympathetic'? Where does it lie? What does it supply?

73. What two groups of nerves are there? What do they supply?

74. What are the functions of the great brain?

75. What are *motor* and *sensory* nerves? Give examples of their uses.

76. Mention varieties of sensation and of *special* sensation.

77. What are the uses of the lesser brain and intermediate brain?

78. Mention some functions of the spinal cord.

79. Give examples of reflex action.

80. What is the average temperature of health? How does it compare with the temperature of the insane?

81. By what means is sleep encouraged?

82. What is the advantage of recording the weight of patients?

83. Mention causes, signs, or results of waste.

84. Mention causes, signs, or results of repair.

PART II.—SYMPTOMS OF DISEASE AND DISORDER.

WHEN we speak of *disorder* we refer to mere disturbance of function without actual disease, such as a bilious attack or a cold. When we speak of *disease* we refer to more serious illness, such as cancer, heart disease, consumption, etc. The object of this chapter is to describe and explain the meaning of certain symptoms, as well

as to connect some of them with particular diseases. Our purpose in doing so is to qualify the nurse to observe intelligently anything unusual in the health of the patients, and understand the gravity of particular symptoms. In considering the seats of disease we shall follow as far as possible the same order as in Part I.

DISEASES AND DISORDERS OF THE MATERIALS OF THE BODY.

85 *The skin* may be the seat of disease of divers characters, such as *eczema*, *erysipelas*, etc. It is very sensitive, in some people more so than others, and irritation within the system as well as external irritation, such as dirt and infectious matter, is apt to excite some form of skin eruption. It is of importance to note these eruptions, as they may give useful hints of the patient's health, and may indicate a new course of treatment. The condition of the skin is useful as a guide to the state of the circulation and the general health of the patient.

The Skin.

86 Reference may here be made to the 'insane ear' (*Hæmatoma auris*). This is a swelling which appears on the outer ear, due to effusion of blood, or bloody fluid, among the cartilages of the ear. It may become as large as a hen's egg, and is at first of a red or livid hue. If left to itself, the swelling subsides after a time, but leaves the ear irregularly thickened, puckered, and much deformed. The condition is seen most frequently in general paralytics, epileptics, and cases of severe and long-continued excitement. The exciting cause is frequently some violence to the ear, as from the patient rubbing his head on the pillow in his restlessness, or from a blow; but apparently it may also occasionally arise spontaneously. It is important to observe it early, as by prompt blistering much of the deformity of the ear may be prevented.

Insane Ear.

87 The muscular system is subject to rupture from jerk or overstrain, and sometimes the tendons snap from the same cause. The muscles are also liable to rheumatism, and muscular rheumatism, of which *lumbago* is a very good example, may appear in any part of the muscular system.

Muscular System.

Bones and Joints. We have next to consider injuries as well as disease —fractures and dislocations as well as actual disease arising in the bones and joints from internal causes.

Fractures are of two kinds, *simple* and *compound.* In a simple 88
fracture the skin is not broken ; in a compound fracture it is, and the seat of the fracture is in communication with the outer air. A simple fracture may become a compound by careless handling, and then the risk to the patient's life becomes much more serious. Either a simple or a compound fracture may be *comminuted*, *i.e.*, when the bone is more or less shattered ; or it may be complicated by the wounding of neighbouring structures or organs (vessels, nerves, etc.).

Dislocations are most common in two ball and socket joints, the 89
shoulder and the hip, especially the shoulder ; but they occur also in the other joints as well.

Fractures and dislocations are most liable to occur in old people. 90
Paralytics and epileptics are very liable to have bones fractured in struggles ; and so are delicate patients if roughly handled. In addition to these, some people, and even young people, fracture from the slightest injury, and we find other cases in asylums where from deficient nourishment in the bones they snap when slight pressure is put on them.

Diseases of Bone.—Inflammation of bone arises from exposure, through a wound, from scrofula and other causes. The bone may become dead (*necrosis*), as a result of disease, or it may become the seat of a tumour.

Diseases of joints are chiefly seen in scrofulous children, or as a result of rheumatism and gout.

Symptoms.—When a part of the skeleton is affected, whether it be a joint or a bone, whether it be injury or disease, the following general symptoms may be expected : (1) *Pain* deep-seated and 91
localized, so that you can tell precisely where it comes from. The pain is aggravated by movement of the injured or diseased part, and by direct pressure or injudicious handling of it. (2) *Swelling.* This is not always noticeable at first, as in the case of fracture or early joint disease, but it makes its appearance by-and-by. Other symptoms appear according to the particular disease or injury, but they cannot be discussed here.

DISEASES AND DISORDERS OF THE CIRCULATORY SYSTEM.

The circulatory system is liable to disease in many forms, but a few only can be mentioned. *The arteries* may lose their elasticity, and become hard and resisting to the touch, as in the radial arteries (where the pulse is usually felt) of many old people, and the cord-like twisted arteries of the temples. This disease is known as *atheroma*, and affects also the aorta and the arteries of the brain, so that when a sudden spurt is put on the circulation they may give way, and hæmorrhage be the result. Thus we explain one form of *apoplexy* (hæmorrhage into the brain). An artery may only give way partially, and if no healing takes place, the walls are thinned out and the artery becomes dilated. In course of time the swelling at the weak spot tends to increase, the walls become thinner, and there is great danger of a rupture on sudden exertion, death almost always resulting if, as is generally the case, the artery affected is a large one and the pressure of the blood is great.

The Blood-vessels.

92 *The veins* are subject to enlargement from weakness in their walls and backward pressure; when they dilate much their valves are insufficient, and the blood swells out the veins into the condition known as *varicose veins*, so often seen in the legs. These swellings may be of great size and place a patient in great danger if a rupture of the vessel occurs. Varicose veins may lead to ulcers in the legs if they are not supported by resting on a sofa, for example, and if their circulation is allowed to be obstructed by loaded bowels pressing on the large veins in the abdomen.

Heart Disease.—It must not be supposed that there is only one kind of heart disease, or that you may recognise it from symptoms alone. Patients come into hospital complaining of what they think is heart disease, when often it is merely indigestion. But there are certain symptoms which naturally make one think of heart disease, and which often signify at least disorder of the heart, if not actual disease. It is well, then, to point out these symptoms. Observe the appearance of a person who has hurried to catch a train: he is flushed, panting, palpitating, and he cannot speak for want of

The Heart.

Symptoms.

breath; the head is hot, the temples throb, and in extreme cases there may be singing in the ears and the sight may be dimmed. Muscular exercise has put an extra strain on the heart, and the heart has given the lungs more blood than they can purify in a given time. These effects may occur in a perfectly healthy person, and are satisfactorily accounted for by excessive action of the heart and muscular system consequent on this effort; but they may appear in the form of heart disease where the muscle is thickened (*hypertrophy*), and contracts too often and too powerfully, with less call to do so than running to catch a train. This condition is common in aortic disease, which is most dangerous to life, often ends suddenly, and is caused by overwork, excesses of various kinds, and rheumatic fever.

More important still are the signs of obstructed circulation which may be seen in aortic disease when the heart muscle fails, but more commonly in disease of the mitral valve. If the flow of blood is retarded in passing through the heart, it naturally fills up and distends the veins in the lungs, liver, kidneys, and other organs, and in the limbs. The obstruction comes on gradually, and the congestion of these organs and parts from excess of blood comes on gradually also. The first symptoms may be breathlessness on slight exertion, congestive headaches, torpid liver, and 93
indigestion. Sooner or later the legs and feet swell, dropsy may appear in the abdomen and skin generally, and blueness of the face and tips of the hands and feet. Later, the congestion of the lungs appears as another serious symptom, and if the heart cannot be strengthened death will ensue. Other symptoms of any form of heart disease are pain in the region of the heart, especially on exertion or when excited, palpitation, faintness (*syncope*), and poorness of blood (*anæmia*), which is seen in the pallor of complexion of the gums and inside the eyelids. As already said, however, these symptoms are no absolute proof of the presence of heart disease, and one should not form hasty conclusions, especially if only one or two of these symptoms are present. Just as the circulation and respiration may be embarrassed in running to catch a train without proof of heart disease, some of these symptoms may be produced by indigestion rather than heart disease. They are grave under any circumstances, and the doctor should have his attention directed to them as early as possible.

Management. In all such cases, whatever the doctor's diagnosis be, bear in mind the following rules :

94 *First.*—The horizontal position, lying in bed, on a couch ; or in faintness on the floor. Thus the circulation is most easily and quickly restored. As a rule the head should lie low, but if head symptoms or the breathing are relieved by a sitting posture this is permitted. *Second*, patients so affected should never be argued with, or allowed to get into a heated discussion. Sane patients under these circumstances are irritable and excitable enough, and insane patients are naturally even worse. *Third*, they should never be allowed to do anything in a hurry—going upstairs, or uphill, or taking food. *Fourth*, they should not be allowed to take large meals. An overloaded stomach impedes the circulation by pressing on the veins, and encroaching on the region of the heart. They should rest after meals.

THE DISEASES OF THE RESPIRATORY SYSTEM.

Just as the circulation and respiration co-operate, and are dependent on each other in health, so also in disease the one reacts more or less on the other. Heart disease tells sooner or later on the lung circulation, till the lungs become congested and water-logged. Lung disease, by diminishing the area for purifying the blood, leads to poverty of blood and an ill-nourished, enfeebled heart.

The respiratory system is liable to many diseases, and as it is very sensitive to indraughts of cold air or irritating vapours and to exposure to cold and damp, disease usually takes the form of inflammation. If it attacks the larynx we call the inflammation *laryngitis ;* if the bronchial tubes, *bronchitis ;* if the lung substance, *pneumonia*. But there are other forms of inflammation, such as *pleurisy*, the seat of which is the lining of the chest, and the covering of the lungs ; and that familiar disease, consumption (*phthisis*), is of an inflammatory character also. Like pneumonia, it attacks the lung substance, but in a different way. It is not desirable to enlarge further on lung disease ; but it is well to know these diseases by name, so that you may remember them in relation to particular symptoms. There are several symptoms which are specially noticeable in respiratory

Some Varieties of Disease.

disease. These are: (1) cough, (2) spit, (3) pain, (4) disturbed breathing, (5) altered complexion, (6) fever, (7) perspiration (night-sweats are suggestive of phthisis) (8) wasting and loss of weight. **Symptoms.** 95

Cough is not always a sign of respiratory trouble, for there is such a thing as stomach cough, nervous cough, aneurism cough, etc.; but these are rare exceptions when we regard the frequency and importance of cough as a symptom in respiratory disease. The cough may be short and dry, as in early phthisis, or pneumonia, or pleurisy. It may be loud, almost barking, but still dry, as in early bronchitis; or it may be loose and easy, and with a crepitant (crackling) sound, as in the later stages of bronchitis and phthisis. It may be noticeable in the early morning, or it may be troublesome on retiring to bed. This last sign has an ominous meaning in consumption. 96

Expectoration (*Sputum, or Spit*).—This varies with particular diseases and the stage of the disease. It should always be kept for medical inspection. It may be viscid, 'sticky,' frothy, and slightly transparent (*mucus*), as in early bronchitis, or slightly streaked with blood. It may be yellowish (*pus*) and with fewer air-bubbles, or it may be partly mucus and partly pus (*muco-purulent*). In the last stages of phthisis the purulent spit is abundant; but a spit of muco-purulent character is common in chronic bronchitis. Lastly, the spit may be almost or entirely pure blood, bright red and frothy. A black spit is common in miners, who may nevertheless enjoy good health.

Pain may be present in phthisis; but it is more noticeable in bronchitis after coughing (when it is generally felt behind the breast-bone); in pleurisy as a 'stitch in the side'; and in pneumonia (especially when the pleura is affected). It is always an important symptom, and should be reported at once. It may lead to the detection of injury as well as disease, as in the case of broken ribs. After paroxysms of coughing there is a general soreness of the chest. 96

Breathing.—The breathing may be rapid all the time, as in pneumonia, or it may be so after a paroxysm of coughing, as in bronchitis. In phthisis and pleurisy it is more rapid than normal, according to the severity of the disease.

Complexion.—The complexion is dusky in asthma; in bronchitis,

if severe, it is flushed and with a bluish tint. In pneumonia there is a slight flush at first, more marked later on; and in phthisis it is pale, except for two bright red spots ('hectic') on the cheeks when the disease is far advanced.

Fever.—This varies with the severity of the disease, and runs a more or less regular course in pneumonia; but in phthisis the rise and fall of temperature are more regular. The temperature, as given by the thermometer, is often a valuable guide to the nature and severity of the disease.

Perspiration.—As a rule, the skin is dry; except in bronchitis after coughing, in pneumonia at the crisis of the disease, and in phthisis, where night-sweats are a bad omen.

97 *The Causes of Lung Disease.*—It will be noticed that all these diseases are commonly caused by exposure to cold and wet. The insane are peculiarly exposed to these risks, owing to their apathy and neglect of themselves.

DISEASES AND DISORDERS OF THE ALIMENTARY SYSTEM.

The symptoms of disease and disorder of the alimentary system are so mixed that a general description of symptoms grouped together under the name of indigestion must suffice. It will best give that practical knowledge which will be most useful to attendants. Indigestion may be a symptom of disorder, or it may be a symptom of actual disease. It has many forms, and it requires medical skill to distinguish one form from another, and to say whether a disorder or disease is at the root of the malady. Indigestion means failure to digest properly, and when you consider the many ways in which digestion may fail, you will understand how important it is for you to carefully observe and report symptoms. In doing this accurately, however, you can render valuable service.

Indigestion.

98 *Causes of Indigestion.*—Food may be badly cooked or unsuitable. It may be insufficiently chewed, and bolted hurriedly into the stomach. Certain things are very irritating to the stomach: unripe fruit, etc., and may cause slight indigestion, or, if persisted in, may give rise to disease. A very common cause of indigestion is failure of the liver to secrete

Causes of Indigestion.

bile. This failure of the liver may be due to a chill, over-indulgence in rich, highly-flavoured food, or in alcohol; or mental worry and anxiety. Without bile, digestion is incomplete, and the bowels get loaded and constipated.

The chief symptoms of indigestion are: (1) The *tongue* may be 99
large, indented by the teeth round the edges, flabby and coated with fur, or it may have a red, dry, irritable look; the former usually means disorder merely, the latter is more likely to signify chronic mischief. (2) The *breath* is offensive; it may be sour or smell like rotten eggs. (3) There may be *pain*, especially at the lower end of the breast-bone, which often spreads round to the back, under the shoulder-blades, and upwards under the left collar-bone. It is generally worse after food, but in some cases relief is obtained by eating. (4) There is usually a *sense* of *weight* and fulness after meals. (5) *Flatulence*, the wind being expelled either upwards or downwards. If upwards, it is soon after food; if downwards, a longer time elapses. If it cannot escape there is discomfort or colicky pain. (6) *Vomiting*. This is a natural effort to empty an overloaded or irritable stomach, or to get rid of some irritating substance, such as ill-cooked, indigestible food. But it may be the result of disease and irritability alone, and may be serious. (7) *Blood* may be in the vomit, and is usually in dark lumps, or like coffee-grounds; but it may be much more like blood from the lungs, and as the source is sometimes puzzling, all vomits, like all sputa, should be kept for the doctor's inspection. (8) *Diarrhœa*. This, too, is generally an effort to get rid of irritating substances; though it likewise may arise from disease. (9) *Constipation*. This may be due to actual disease, but is also very common among our patients from want of attention to the bowels, from unsuitable food, and from sedentary habits; and it should always be noted. (10) *The colour of the face*. When indigestion arises from too hearty a meal, flushing is generally seen. If there is much pain and discomfort, or nausea, the face may be pallid or drawn. If indigestion arises from disorder of the liver, the skin often becomes more or less yellow, and the white of the eyes is discoloured. In many people who have old-standing indigestion the tip of the nose gets red. This is not always to be attributed to drink, though sometimes the indigestion arises from drink.

Symptoms of Indigestion.

The management of indigestion chiefly requires (1) regulating 100

the food, and directions as to diet should be obtained from the doctor and strictly followed; (2) a careful study of the symptoms, and attention to the treatment prescribed; (3) attention to the bowels, so as to prevent constipation. The importance of this symptom as a cause of mental disturbance cannot be too strongly urged. It may excite epileptic seizures, retard mental recovery, or hasten paralytic seizures by irritating the brain. The health and well-being of the patients depends greatly on the bowels being regularly attended to.

Management of Indigestion.

Much indigestion is caused by bad teeth, which render proper mastication painful; or by want of teeth, whereby the food is not thoroughly chewed. As far as possible, the dentist should be called in whenever a tooth shows signs of decay; it may then be stopped and preserved for many years. Teeth which are too far decayed must be removed, and false ones substituted. No good dentist will recommend the leaving in of stumps, which are a fruitful source of future pain, and even abscess formation and putrefactive absorption.

The bloodvessels of the lower end of the bowel often become distended or varicose, and are then called *hæmorrhoids* or *piles*. It is necessary that persons suffering from them should not be allowed to become constipated, to which there is generally a tendency.

Hernia (rupture) is not an uncommon disease, especially among men. The common forms met with are due to some weakness in the abdominal walls which allows the bowel to protrude through, and a swelling arises. So long as the passage of materials through the bowel is not interfered with no great trouble arises; but at any time such interference may occur and the bowel may be nipped or *strangulated*. In this case serious danger at once arises.

Patients should be carefully inspected in order that a hernia should not be overlooked when it occurs (or when already present). No person suffering from a rupture should be allowed to undertake any work which produces severe straining. Some form of support, called a *truss*, is usually worn in cases of hernia, for protection and to prevent increase in size.

DISEASES AND DISORDERS OF THE EXCRETORY SYSTEM.

The function of excretion is more or less impaired when there is 101
disease or disorder of the respiration, skin, or intestines ; but the chief disturbance of the excretory function takes place when the kidneys and urinary system are the seat of disease. If the kidneys are blocked by disease, a gradual excess of poisonous matter is pent up in the blood, and blood-poisoning results.

The *causes* are numerous and variable : gout, diphtheria, scarlet 102
fever, alcoholic and other excess ; kidney disease may also appear as a sequel of phthisis or heart disease. Other causes, nervous, digestive, etc., contribute their share to the production of disease or disorder of the kidneys.

Causes.

The *symptoms* are of three kinds : (1) Those localized in the drainage channel itself, *i.e.*, kidneys and urinary tract. (2) Those revealed by the urine. (3) General bodily symptoms.

Symptoms.

(1) *Of the Drainage Channel.*—Of these we shall say little, as they are beyond the skill of the nurse to understand ; but of the others we shall say more. The symptoms are confined to the locality of the kidneys, or the *ureters* (the tubes connecting the kidneys with the bladder), and are chiefly the following : *Pain*, *swelling*, etc. A medical examination of the parts affected is here necessary.

(2) *Of the Matter drained.*—The normal daily quantity of urine is about two or three pints. It may be *scanty*, with or 103
without disease or disorder. In hot weather, when the skin acts freely, less passes through the kidneys, but in kidney disease scanty urine is often an early sign. It is scanty in feverish conditions, even though the skin also is dry. Lastly, if little liquid is taken, the quantity of urine is diminished. It may be *suppressed.* This is seen at the outset of sharp attacks of kidney disease, or when the disease is of long standing, and many of the bloodvessels of the kidney become obliterated. It is also seen in paralysis, and is a symptom of the gravest importance, for it means blood-poisoning and imminent danger of death. It may *be superabundant.* This is seen in diabetes and hysteria, and also, though to a much less extent, in health in cold weather, when the skin does not act freely. Copious drinking, and especially of beer,

The Urine.

Quantity, etc.

increases the quantity of urine. It may be passed frequently, in small quantities, or the patient may be unable to retain it, or its passage may be attended with pain. Not infrequently in the insane the urine may be formed in proper quantity, but held back in the bladder (*retention*), sometimes from lack of power to expel it, but more often from a dulling of those sensations which warn an ordinary person that his bladder should be emptied.

The Colour. It may be high-coloured, especially if scanty; or pale, especially if abundant. The colour may be dark like porter and due to bile, or it may be bloody.

Deposits. It deposits various matters on cooling, and by chemical and microscopic examination of these a medical man is often able to form an opinion of the condition of the kidneys, the ureters, and the bladder.

A sandy deposit may occur in the urine, or small stones may pass with it. When gravel or stone occurs there is great depression and irritability, and there is always ground for suspicion of this when a red sediment is seen sticking to the chamber-pot. In these cases, as indeed in many kidney disorders, the digestive tract is more or less at fault, and the diet and the use of stimulants should be carefully regulated.

104 (3) *General Bodily Symptoms.—Dropsy* is often a symptom of kidney disease. When the urine is scanty or suppressed the water of the blood must find an outlet somewhere, and so it oozes from the blood into the skin or the cavity of the abdomen, and one of the first signs of kidney dropsy is *puffiness below the eyes*. The dropsy of the skin can be distinguished from mere fat by pressing the surface with a finger-tip, when a little 'pit' remains for some time, whereas in the case of fat there is no such marking. In its chronic form dropsy may come on very slowly and insidiously.

Dropsy.

Coma and Convulsions. A state of unconsciousness accompanied with convulsions appears in conditions of blood-poisoning, the result of more or less suppression of urine, and this is also found during or after child-birth from a similar cause.

Eye Symptoms. Small hæmorrhages may occur within the eye in chronic kidney disease, and there may be various disorders of vision, such as total or partial blindness.

The heart becomes affected in the later stages of some forms of kidney disease, and disorders of digestion are common in many instances, even at an early stage of the disease. **Heart Symptoms.**

DISEASES AND DISORDERS OF THE NERVOUS SYSTEM.

Under this head we have to distinguish two groups: *nervous* diseases and *mental* diseases. The latter will be treated of in a separate chapter, but the former calls for attention here. Nervous diseases, as you might expect, are common in asylums, being 105
nearly related to mental disease.

The causes may be classed under four great divisions: (1) Hereditary causes; (2) excesses; (3) poisons; (4) exposure. The last three causes act more quickly and effectively if the first (hereditary predisposition) is present. Of the *first*, we may take the example of a disease descending from father to son. Of the *second*, alcoholic excess is an example. Of the *third*, lead-poisoning or poisoning from suppression of urine are examples. And of the *fourth*, exposure to wet or cold, *e.g.*, lying on the damp grass, or exposure at an open window during convalescence from 106
some other disease, are examples. **Causes.**

The symptoms may be considered in four groups. It must be remembered that in nervous disease symptoms of all these groups may appear together. **Symptoms.**

(1) *Sensory.—Pain* in a sensory nerve is known as *neuralgia*. In the large nerve of the thigh it is called *sciatica*, because the nerve there affected is called the sciatic nerve. But there are many kinds of pain, and they are described by different names; thus, we have 'girdle pains,' as if the body were being tightly constricted; 'lightning pains,' which come suddenly and intensely, etc. It is always well to note the character of these pains and their location.

Peculiar Sensations.—Gnawing sensations are sometimes felt in the stomach, twitching or jerking sensations in the muscles, and there are many peculiar head sensations.

Loss of Sensation, Sensory Paralysis, is not uncommon, especially with motor paralysis. It may be loss of sensation of

touch, or of heat or cold. Sensation in the insane, especially in chronic cases, is apt to be blunted. Disease sometimes develops in asylum patients without its being recognised, because pain, which is a warning to the sane sufferer, is not so readily felt. This fact also exposes some patients to danger from cold or heat; since, though they may be more ready than ordinary people to suffer from the effects of exposure, they are not impelled by the sense of acute pain or discomfort to protect themselves from it.

Special Senses.—Sight may be affected, or hearing, or any of the other senses, and the affection may be so slight as not to strike the casual observer.

(2) *Motor* symptoms are as a rule more noticeable than sensory symptoms.

Involuntary Movements.—The muscles, which in health move only in obedience to the will, may in disease be in a state of unrest in spite of all attempts of the will to keep them quiet. There are several kinds of involuntary movements. *Convulsions* and *tremors* are the two most familiar examples. Convulsions are violent movements, and are well seen in severe attacks of epilepsy. Tremor is a finer, less perceptible movement. It is often seen in the tongue, and in the muscles of a man who is suffering from delirium tremens. Midway between these are the muscle jerks of St. Vitus's dance (*chorea*).

Loss of Movement, Motor Paralysis.—This is well seen in a patient who has had a 'stroke.' One side is usually paralyzed, but there are degrees of paralysis. It may only affect some of the muscles of the face (Bell's paralysis), or only one arm, or only some of the muscles of the arm, as in paralysis from lead-poisoning; or it may be general, as in general paralysis of the insane.

(3) *Reflex* symptoms may be dismissed in a few words. There may be abolition of the reflex action of the pupil to light; that is, the pupil may fail to contract when a light is suddenly flashed in the eye. The muscles of swallowing may fail to act when food is placed at the back of the throat, as in bulbar paralysis. Or, on tickling the soles of the feet, there may be no response, or the movement may be exaggerated; and so on with other reflex functions.

(4) *Sympathetic Symptoms.*—As the sympathetic nerves regulate

the blood-supply, we find their disorders or disease manifested by flushing or pallor, especially noticeable after meals, and sometimes seen in red patches on the neck or side of the face. Disorder of the sympathetic nerves is manifested also in the disordered functions of secretion in the body, which are noticeable in mental disease, as, *e.g.*, when the skin is dry and harsh; and it accounts also in some measure for continued excitement and sleeplessness in many mental cases. In such cases the blood-supply to the brain is irregularly distributed, and does not subside at night when sleep would otherwise ensue.

Sympathetic Symptoms.

GENERAL SYMPTOMS.

It is necessary briefly to refer to three general symptoms which are not necessarily associated with any particular system or function. These are:

Derangement of Temperature.—In the insane the temperature is often below normal, except in acute cases, such as general paralysis, after epileptic fits and masturbation, etc. A rise of temperature may indicate one or other of many diseases, such as rheumatic fever, infectious fevers, erysipelas, pneumonia, inflammation of the bowel, etc. 107

Derangement of Temperature.

Shivering or Rigor.—This is often the first warning of anything serious about to happen. It is a frequent forerunner of puerperal insanity, of the formation of an abscess, or of the approach of a feverish disease, whether simple or infectious. 108

Shivering or Rigor.

Local pain has already been considered, but it is well to point out that pain in one place may point to disease somewhere else, as, *e.g.*, the headache of indigestion, pain in the knee with hip-disease, etc. 109

Pain.

Fainting (*Syncope*).—The chief characteristics of this are loss of consciousness and falling if the patient is standing or sitting; pallor or whiteness of the face, coldness of the skin, relaxation of the muscles, dilatation of the pupils, etc.

There are many degrees between complete syncope, or a 'dead faint,' and a mere sensation of faintness; any of these may be symptomatic of heart disease, or of weak action of the heart arising from the state of that organ itself or from debilitating

disease; or it may be caused by mental shock produced by sudden fear, distress, or even joy, or by unexpected sounds or sights.

Collapse is characterized by ashy pallor, anxiety, and pinched or shrivelled appearance, coldness and sweating of the skin, loss of muscular power, and, it may be, voicelessness. Consciousness is not necessarily lost, but often is. This is a sign of grave mischief having arisen, such as the bursting of an aneurysm; rupture or perforation of abdominal organs, *e.g.*, the stomach or intestines; or, if occurring in a person already suffering from serious disease, such as pneumonia or typhoid fever, it may be a sign of excessive loss of strength.

Inflammation.—The four marked symptoms of inflammation are *pain, heat, redness, and swelling.* Inflammation may take place externally, as in the case of a boil, when all these symptoms can be easily recognised; or it may take place internally. Inflammation ends in one of two ways: (1) by *resolution*—that is, departure, nothing being left behind it; (2) by *suppuration*, or formation of *pus* ('matter'), as in a boil. In the latter case, recovery may soon take place, or the inflammation may become chronic and require lengthy treatment and nursing for its remedy. As a general rule, internal inflammation is more serious than external. Occasionally pus is absorbed into the general system, and causes great disturbance and dangers. This condition is called *pyæmia.*

QUESTIONS ON CHAPTER I.

PART II.

85. Give examples of disease affecting the skin.

86. What is the insane ear, and how is it caused?

87. Give examples of affections of the muscular system.

88. What is a simple fracture? How may it become a compound fracture?

89. Where are dislocations most common?

90. What patients are most liable to fractures and dislocations?

91. What two prominent symptoms occur in injury or disease of bones or joints?

92. What is the condition known as *varicose veins?* How is it produced?

93. What are the signs of obstructed circulation in heart disease?

94. In all cases of disturbance of the heart's action, what four rules should be observed?

95. What symptoms are specially noticeable in respiratory diseases?

96. How may these symptoms differ one from another?

97. What are the causes of lung disease?

98. Mention the causes of indigestion.

99. What are the chief symptoms of indigestion?

100. In managing cases of indigestion, what things should be attended to?

101. When is the function of excretion more or less impaired?

102. What are the causes of kidney disease or disorder?

103. What would you notice regarding the passing of urine and regarding its characters?

104. What bodily symptoms are noticeable in kidney disease?

105. What are the general causes of nervous diseases? Give examples.

106. In what four groups would you arrange the symptoms of nervous disease? Give examples.

107. What may a rise of temperature indicate?

108. What may a shivering fit foretell?

109. Give an example of pain in one place referring to disease or disorder elsewhere.

CHAPTER II.

MIND AND ITS DISORDERS.

As shown in the preceding section of the handbook, the brain is 1
the centre of the nervous system. In it all the nerves of the body converge; and through them it regulates the move- **Brain the Organ of Mind.**
ments, sensations, and nourishment of every part of the body. But the brain has still another function; it is the *organ of mind.* A healthy mind requires a healthy brain; and all disordered mental manifestations have their origin in derangements of the brain.

The mind is complex in its constitution, and we are still very far 2

from having a complete understanding of it or an accurate knowledge of its working. It is thus not easy to give a simple and yet comprehensive definition of mind; but it is often described as that function or power by which we *feel*, *think*, *and act*. For our purpose it is sufficient to regard it as being made up of (1) the intellectual faculties, (2) the will, and (3) the emotions or feelings.

Healthy Mind.

3 The *intellectual faculties* are the reasoning powers—those powers by which we observe or perceive, judge of and compare, and reason regarding our surroundings or anything put before us; and in them we include also memory, the power of recalling to our mind former events or impressions. It is these faculties which we appraise roughly when we speak in ordinary language of a person as being of good intelligence or the reverse; and in health they are not only up to the normal standard in power, but are also always more or less actively in use.

Intellectual or Reasoning Powers.

4 **The Will.** The *will* is the faculty by which we direct and regulate our actions; or, in other words, it is the power of self-control, by which we decide on and guide our conduct.

Certain desires and susceptibilities are, as observation shows us, implanted in every person independently of the reasoning powers; such as the love of life, the love of offspring, the capacity for joy and grief, etc.; and these are termed the *emotions or feelings*. In addition to the purely mental faculties, we also have various 'organic' or bodily appetites or desires, such as the appetite for food and drink, and the sexual instinct; and these are called the organic appetites or instincts.

5 **Feelings and Instincts.**

6 By *insanity* is meant 'disease or unsoundness of mind'; and this unsoundness shows itself in a derangement or alteration of one or more of the mental faculties, feelings, or instincts. Thus, the intellectual or reasoning powers may be more or less impaired in their working, or may be so perverted that the person forms notions which are altogether wrong and constitute delusions; or the will and power of self-control may be affected; or the feelings and organic appetites are disordered. The outcome of this mental derangement is seen in the patient's conversation and general conduct. For instance, when a person who is naturally bright, active and cheerful becomes

Unsound Mind.

7

dull, stupid, and unable to do his work properly, or says that he is Jesus Christ, or feels intensely miserable without due reason, or shows by his conduct that he is acting from motives which are not usually recognised as natural and reasonable, we say that he is insane. The mental condition of every person varies from time to time under different circumstances; but such variations are not regarded as unhealthy so long as they do not pass beyond certain limits. But when the variations are such as to render the person unable to take proper care of himself, or to behave rationally towards his fellow-creatures, they are regarded as morbid, and the mental condition is considered unsound.

A person's mental state is judged by (1) his conversation, and 8
(2) his conduct; and in estimating these we compare him with the generality of his fellow-men. We also compare him with himself as he was previous to becoming insane. Even before speaking to him we may learn much regarding him by noting his expression, posture, etc. We see whether he is bright, lively, restless, and energetic, or dull, stupid, and listless, or suspicious of those around him. In conversation we observe whether he has a proper understanding of what is said to him, whether he answers correctly and intelligently, whether his memory is good or bad, and whether he has any delusions. Afterwards, by more prolonged observation of his general conduct, we decide whether he shows any evidences of insanity in his actions or habits. Similar information may occasionally be obtained by seeing the letters he writes. When a patient will not enter into conversation, he is sometimes willing to write if left alone, or may be induced to do so by persuasion; and from his writings we may be able to form an estimate of his intelligence, delusions, and feelings.

How to judge the Mental State.

In the great bulk of our cases the intellectual faculties, the will, and the feelings and organic appetites are all more or less affected together, and it is rare to find one of them deranged without the others being also involved. Therefore, in shortly reviewing the symptoms of insanity, we take, first, conditions of disturbance of the mind as a whole. In considering these, the changes in the intellectual faculties are the most striking, and call for most notice, though the will and the feelings are also affected. Some further reference will then be made to the condition of the will, to the more common alterations

Mind usually affected as a whole.

in the feelings and instincts, and to various insane acts and habits shown by our patients in consequence of their mental derangement.

Our arrangement, then, is the following :

9 **Arrangement of Symptoms.**

States of general mental disturbance.
(1) Depression of mind.
(2) Exaltation of mind.
(3) Enfeeblement of mind.
(4) Perversion of mind.
Condition of the will.
Changes in the feelings and instincts.
Insane habits and peculiarities.

STATES OF GENERAL MENTAL DISTURBANCE.

(1) DEPRESSION OF MIND.

10 In this condition there is a morbid feeling of distress or unhappiness. This feeling varies much in degree in different cases, being sometimes slight, at other times very intense and all-absorbing ; and it may also vary in the same case at different times. It may exist without any impairment of the intelligence : the patient may be able to converse rationally and acutely on the various subjects put before him, and show no evident mental weakness apart from the morbid feeling of wretchedness. But, generally, the feeling of distress is more or less constant, and is so marked as to occupy the patient's thoughts persistently, and interfere with the healthy play of the intellectual powers ; or there is very frequently great perversion of the intelligence, and delusions are developed. These delusions are of a distressing nature, such as that poison is put in the food, that everybody is conspiring to kill the patient, etc. Often they have reference to the religious sentiment, such as that the patient has been cast off by God, and is doomed to eternal misery ; or to the bodily health, as when the patient says that his bowels are closed up, or that his stomach cannot digest the food he puts into it.

Mental Depression.

In this state of mental depression the patient is sometimes very quiet, sitting quite still in his own place, disinclined to talk, or refusing to say even a single word, showing no interest in the persons and things around him, moody and self-absorbed, and

brooding constantly over his morbid fancies. In other cases there is considerable restlessness, with talkativeness, crying and moaning, wringing of the hands, frequent complainings, and the other outward signs of mental distress. The mental depression leads often to refusal of food, which may be persistent and difficult to overcome, and to suicidal and homicidal acts.

The suicidal tendency is relatively more common in this than in the other forms of insanity, and its possible presence should be carefully kept in view in the treatment of every case of mental depression.

(2) EXALTATION OF MIND.

The intellectual powers, while not weakened in themselves, may be working at too high pressure, and the balance between them and the power of self-control be disturbed. The thinking centres in the brain are morbidly active, ideas pass through the mind with excessive rapidity, and the patient is 'excited' in his conversation and conduct. The power of self-control being now insufficient, the patient is absurd and extravagant in his behaviour, talking too much, or chattering incessantly, wandering from one subject to another without apparent connection, and being restless, noisy, interfering, impulsive, mischievous, destructive, or violent. The degree of this disturbance varies very much in different cases. In acute delirious mania, for example, the brain excitement is so great that the patient is quite oblivious to ordinary external impressions, and he then remembers nothing of what happens during his illness. Or, without being delirious, he may evidently understand what is said to him, but be so excited that he cannot pay any steady heed to it (ordinary acute mania). Or in the less severe forms of mania he may understand and answer questions readily and smartly, but still show the mental exaltation in being excessively talkative and restless and interfering. The feelings and appetites are altered, and often exaggerated.

Mental Exaltation.

(3) ENFEEBLEMENT OF MIND.

10 The whole mental power may be more or less impaired or destroyed. Intellectually, this is shown in stupidity, impairment or loss of memory, incoherence, want of energy, want of attention, etc. The will-power is weak; and the feelings and instincts are usually much dulled. It is well seen in the condition of mental enfeeblement which often supervenes when the acute or severe symptoms of an attack of insanity pass off without recovery taking place. In degree it may vary from slight enfeeblement, indicated by some silliness or childishness in conversation or conduct, down to profound *dementia*, when the patient cannot tell even his own name.

Mental Enfeeblement.

(4) PERVERSION OF MIND.

10 The intellectual faculties, with or without marked depression, exaltation, or enfeeblement, may be so twisted in their action that the patient forms a wrong conception regarding himself or his surroundings; and he is then said to have a *delusion*.

Mental Perversion or Delusion.

11 An insane delusion is a 'false belief arising from diseased mental action.' Every *false* belief is not necessarily insane in character, for it may follow naturally or reasonably from something in the education or surroundings of the person who holds it. For example, the belief in witchcraft, which was formerly so common in this country, and which still prevails in some other countries, is erroneous, and therefore delusional; but it is fully accounted for by the limited knowledge and defective education of the time or country, and therefore is not regarded as an evidence of insanity. But when the false belief cannot be reasonably accounted for in any such way, when in fact it evidently springs from the deranged working of the man's own mind, and when he has not the mental power to appreciate and correct its falsity, it constitutes an *insane* delusion, and is a symptom of insanity. Frequently the belief is on the face of it preposterous and absurd, as when a person fancies that he is God Almighty and can move the world. At other times the patient's statement is not absurd in itself, as when he says that he has lost all his money, or that he is about to die; and

in such a case we have to ascertain that the belief is not founded on fact, or is not justified by the patient's circumstances, before regarding it as a delusion.

When the false belief refers to any of the special senses—that is, when it takes the form of an impression on one or other of the senses of seeing, hearing, taste, smell, and touch—it is usually spoken of as a *hallucination;* while those false beliefs which are not connected with any of the special senses, but are simply false intellectual ideas, are *delusions proper.* Therefore the general term 'insane delusion' includes two groups: (*a*) Hallucination, and (*b*) Delusions proper.

Hallucinations.

For example, a patient may say that he hears people in the next room or outside the house calling him by abusive names, and telling him to do things which he ought not to do, when there is no real foundation for the statement; he is then suffering from hallucination of hearing. In such a case there may be either no sound at all to set up the sensation of hearing; or there may be some sound, such as the noise of the wind, which the patient hears but misinterprets and twists into some diseased notion. Similarly with hallucinations of sight; a patient may say that he sees certain people in his room when there is no one there at all; or, seeing certain persons there, his sight perceptions regarding them are disordered, and he takes them to be other than what they really are. An example of hallucination of taste is when a patient says that he tastes the poison or filth which is maliciously mixed with his food; of hallucination of smell, when he complains of sulphur being burnt under his nose, or of bad-smelling gases being led into his room; and of hallucination of touch, when he imagines that insects are creeping all over him.*

Examples of Hallucinations.

* When the false perception arises from something external, which really exists, but is misinterpreted, the term *illusion* is sometimes applied to it. The term 'hallucination' would then be restricted to that graver form of derangement in which there is a false sense-perception with nothing external to account for it. A person hearing the noise of the wind, and taking it to be a voice, would be said to have an illusion of hearing; while if he heard a voice when there is no sound at all, it would be a hallucination. 11

A sane person may have illusions and hallucinations. Some people, for

Allied to the hallucinations of special sense are the cases of misinterpretation of those sensations which are perceived by us as arising in one or other of the organs in the body. For instance, a person after a severe drinking bout may misinterpret the pain felt in the stomach, and may think that rats are gnawing inside him. Similarly, some patients say that their 'inwards' are being constantly dragged on and twisted.

As a rule, patients suffering from hallucinations show them pretty distinctly by their actions, statements, or complaints. But sometimes there may be difficulty in proving the existence of the hallucination. This is chiefly true of the hallucinations of hearing (*aural hallucination*); and sometimes in these cases the patients not only do not reveal them readily, but exercise so much self-control as to guard carefully against other people discovering them. Sooner or later, however, an observant attendant will see such a patient turn his head sharply as if to catch a word, or shut his eyes and alter a tone, or smile, or frown in a way which cannot be explained by ordinary circumstances; or he may notice that the patient's eyes or whole body are fixed and strained in an attitude of attention. Talking to one's self is not necessarily a proof of hallucination of hearing, for many sane people have this habit when in deep thought; but if the speaking is in the nature of a conversation—that is, of observation and reply—or in a loud threatening voice, and evidently addressed to some person not present, it is almost certain that the patient is hearing delusional 'voices.' Care should be taken not to say that a patient is suffering from hallucinations unless the evidence of them is quite distinct.

Importance of Hallucinations.

Hallucinations are a very important symptom in insanity, and may lead to great violence and dangerous acts on the part of those suffering from them. All the different forms may occur in cases of acute and recent insanity; but the most frequent are those of hearing and sight.

example, see the figure of an animal, such as a cat, in the room when there is really no animal present. But the reasoning powers are brought into play to correct the false impression; the person knows from other observations that there is no animal in the room, and understands that it is simply his sight which is playing him false. When the false sense-perception is not corrected by the reasoning powers, but is accepted as true, it becomes a 'false belief,' and is delusional.

Often the hallucinations persist for a time, and then gradually pass away as the patient progresses towards recovery. It is usually an unfavourable sign if the hallucination persist without change for more than five or six months, and often means that the patient will not recover. In the chronic forms of insanity the hallucinations most frequently found are those of hearing; and in every asylum there are cases in which the hallucinations of hearing constitute the most striking feature, and in which the patient's conduct is largely guided by what the 'voices' tell him. Hallucinations of sight are common in the insanity associated with epilepsy. Occasionally, hallucinations have their origin in some local disease of the organ of the affected sense; and this ought to be kept in mind, for then the local disease should be corrected if possible.

Delusions Proper.—These are found in very many cases of insanity, and are of the most varied character. Thus, in the depressed cases, the delusions are, as already mentioned, usually of a more or less distressing character, such as having committed unpardonable sin, being lost eternally, being repulsive to everybody, causing infection, bringing evils on relatives, and having lost all property. In states of mental exaltation, the patient may say that he is possessed of great wealth; that he is Jesus Christ or Napoleon Buonaparte, or some person other than himself (*delusion of identity*); that his legs are made of glass, etc. These delusional ideas may be constantly changing, or they may persist for some time and then disappear as the patient improves in his mental state; or they may become permanent.

Delusions Proper: their Variety.

In some cases we find that the patient labours under delusions on one subject, or one set of subjects only; while apart from these particular delusions he appears to be rational and intelligent, and can behave himself very well. This is the class known as *monomania*, and is in popular language often spoken of as partial insanity, or being mad on one point. Here the delusion is more or less permanent, or 'fixed.' In it we find the following three types of delusion: First, the *monomania of grandeur* or pride, as when the patient believes himself to be an emperor or king, the heir to the throne, or to be possessed of great wealth, or of the whole place round him.

Limited or Fixed Delusions.

Second, some patients are morbidly suspicious, saying that they are the objects of persecution, that they are constantly being insulted, and that every little thing that is done is intended to annoy them; they attribute their supposed injuries to the people around them, and often bring unfounded complaints against the attendants and other patients. These are the cases of *monomania of suspicion.* Third, another class carry these suspicious ideas to a still further extreme, and imagine that they are worked upon by electricity, or mesmerism, or gases, but refer their persecution not to the real persons around them, but to some imaginary, supernatural, and unseen power. This is termed the *monomania of unseen agency.*

Delusions of different characters may be shown by the same patient. Thus, delusions of grandeur and of suspicion may be associated, as when a person says he is the rightful owner of certain property, but is unjustly kept out of it by the plots of his enemies. Also delusions of a depressing character are sometimes found existing along with those of a joyful nature. It is of great importance to ascertain the particular delusions and hallucinations of each patient, as in them we often find the explanation of the patient's general conduct; and from their character we are enabled to judge better of the patient's mental condition and of his propensities. For instance, a patient may think that he hears a voice from heaven telling him to do away with himself; and in such a case we must be prepared to guard against a suicidal attempt, especially if we see that the patient is very strongly under the influence of the hallucination. As with hallucinations, so with delusions proper; it is a bad omen when the false belief becomes fixed, while we are more hopeful as long as the delusions are of a changing nature.

Varying Delusions in same Patient.

CONDITION OF THE WILL.

12 In health the will and the power of self-control regulate our general conduct, and keep our natural impulses within normal bounds. The strength of this self-controlling power varies greatly in different individuals, and is much influenced by the education and training which the person has received. Some persons seem to be naturally deficient in it—they are of 'weak will,' flighty and irregular

Condition of the Will; Morbid Impulses.

in their conduct, and largely under the sway of their impulses. On the other hand, the will-power may not be weak in itself; but the impulses or desires may, either from vicious indulgence or from disease, be greatly intensified, until they become overmastering in their strength; the usual controlling power is then insufficient to regulate them. Examples of each of these conditions are found in connection with the habit of alcoholism (drunkenness). Persistent excessive indulgence in alcohol affects the brain in such a way as directly to weaken the will, and so the person becomes much less able than formerly to control himself properly. It also intensifies any craving which may naturally exist for stimulants, and this craving may grow so strong that the person is quite unable to resist it; and so, from *vicious indulgence* of the habit, he becomes a slave to drunkenness. But sometimes drunkenness is a real *disease* (dipsomania), not a vice. In this condition the person is free from the craving for drink for long periods together; but at certain times, in consequence of the peculiar state of his brain, the desire for alcohol assails him with such terrible force as to be quite uncontrollable, and he will then do anything in order to gratify the diseased appetite. Such morbid and overmastering impulses sometimes hurry the patient on to deeds that he would naturally shrink from and abhor.

13 In insanity the will and the power of self-control are often impaired to a greater or less extent; and there is frequently great irritability and impulsiveness. Moreover, the insane often act under the influence of delusions, of ideas which are mistaken, but which are nevertheless very real to the patient; and conduct which would be regarded as quite unnatural in a sane person may in an insane person be the very natural outcome of his diseased mental condition. Hence we should always bear in mind that the insane are not fully responsible for their actions, and sometimes are quite irresponsible.

The Insane are not fully responsible for their Actions.

CHANGES IN THE FEELINGS AND INSTINCTS.

14 Any of the natural feelings, emotions, or appetites may be exaggerated, impaired or destroyed, or perverted. A few examples will best show what is here meant. There is naturally in every man the love of life, with a desire to preserve it. In some forms of insanity this natural feeling is destroyed—the patient has no wish to live, or may

Alterations in Feelings and Instincts.

even loathe life and try to kill himself. In the mental derangement which sometimes follows child-birth, the natural affection of the mother for her child is often lost, or replaced by a feeling of intense hatred, and she may attempt to destroy the child. The appetite for food may be lost and the patient refuse his food; or it may be perverted, as when the patient eats filth and other repulsive substances. The sexual instinct may be lost; or it may be exaggerated and perverted, and then the patient gratifies his desires in an immoderate or unnatural way, or indulges in indecent practices.

There is in health a feeling of bodily well-being or pleasure, which is often not appreciated, but the want of which is at once indicated when we say that we 'feel unwell.' This feeling is often impaired in insanity, as when a melancholic patient says that he is utterly miserable or wretched. Patients sometimes say that they have no 'natural feeling.' On the other hand, the feeling may be unwarranted. In general paralysis the patient often says that he is thoroughly well and strong and in the very best of health, when in reality he is so paralyzed that he can hardly move or speak.

INSANE HABITS AND PECULIARITIES.

115 The various insane acts and habits of our patients have their explanation in one or other of the forms of mental disturbance which we have just considered. Some of these acts have been already incidentally mentioned. Wet and dirty habits, when not due to bodily paralysis, may arise from carelessness or wilful design, as in some cases of mania, or may be an indication of general mental enfeeblement, showing that the patient is too stupid to take care of himself. Destructive propensities, such as tearing clothes, are very common among the insane, and may be the result of a paroxysm of acute excitement, of mischievous intent, or of delusion. Fantastic dressing, such as wearing a tinsel crown, is usually due to some delusion of grandeur. Theft is a frequent practice, the patient sometimes thinking that everything he sees is properly his ; while at other times he is not able to control his morbid desire to obtain possession of whatever takes his fancy, even though he knows it does not belong to him. Under the delusion that stones, pieces of glass, etc., are articles of great value, patients may hoard up all kinds of useless rubbish, as often seen in general paralysis ; or they may squander their

Insane Acts and Habits.

property recklessly, under the idea that their wealth is inexhaustible. Refusal of food may be due to loss of the natural appetite for it, or may be the result of a melancholic delusion, such as that the food is poisoned, or that it cannot be paid for; or of an exalted delusion, as when the patient imagines he is a deity and needs no food. Talking to himself, especially in a loud scolding tone, often means that the patient hears or sees imaginary persons whom he is addressing.

Other acts which may be evidence of insanity are stripping naked; indecent exposure of the person; sexual malpractices; eating ravenously or like an animal, or eating strange articles; and various other less frequent eccentricities of conduct. But two propensities—the suicidal and the homicidal—require to be considered in more detail. A very large proportion of the insane are prone to injure themselves or others, and we have constantly to take measures for preventing suicidal and homicidal acts.

Suicidal Acts.—The suicidal desire may be due to simple misery 16
or weariness of life. Such patients converse quite intelligently, betray no delusion, but simply say that they are wretched, and that life is a burden to them. These are cases which require most careful watching; for suicide is often attempted by them, and their mental acuteness makes them more able to elude the vigilance of their guardians. More frequently, however, the suicidal propensity springs from a delusion, as when the patient thinks that he is hunted by his enemies or has some other distressing idea, and tries to escape from his misery by killing himself; or when he hears a voice from heaven commanding him to destroy himself. Without delusion or any feeling of wretchedness, there is sometimes an ungovernable impulse to self-destruction. Occasionally patients kill themselves accidentally, as when in a burst of wild excitement they try to escape from the house by jumping from the window; but such cases are not suicidal in the same sense as the others, for here there was not the intent to destroy life.

Suicide.

The quiet cases, that say nothing about their suicidal inclination or intention, are in reality far more dangerous, and more likely to make a determined effort at self-destruction than those who speak much about it. Hence we should be very vigilant with these quiet cases. Again, it must not be thought that a patient will not kill

The Quiet Cases are often the Worst for Suicide.

himself because he is afraid of being killed by others. On the contrary, this is one of the most common delusions of suicidal patients, and one that is very apt to throw the relatives off their guard.

Modes of Suicide.

The most frequent modes of suicide are drowning, hanging, strangulation, starvation, cutting, poison, using firearms, and precipitation. Sometimes the mere sight of the means of destruction, such as a sharp knife, rouses the suicidal impulse in the patient's mind.

Similar to suicide is the propensity to self-mutilation, as when the patient tears out his tongue, puts out an eye, or chops off a finger. This is almost always delusional in its origin.

Homicide.

Homicidal Acts.—Under these we include not only attempts to kill, but also the less severe forms of assault upon others. Such assaults may be made by a patient when trying to escape from restraint, or they may occur in a paroxysm of acute insanity; in the wild excitement of acute mania the patient may assault anyone near him, without showing the reason that prompts his attack. More frequently it arises from hallucination of hearing or other delusion, as when the patient thinks the assaulted person has been calling him abusive names, or is his enemy. Or it may spring from the mere *impulse* to kill. In the insanity associated with epilepsy there is often intense irritability; and these patients frequently make assaults, which may even be murderous, upon those near them on the very slightest provocation.

MIXED FORMS OF INSANITY AND BODILY SYMPTOMS OF INSANITY.

At this part of our subject it is desirable to emphasize two points:

(1) For the sake of clearness, the conditions of general mental disturbance (depression, exaltation, etc.) have been described as if they were sharply defined and separate from each other. It is quite true that we meet with cases which illustrate typically one or other of these conditions; but it must also not be forgotten that in a large number of patients we find two or more of these conditions present in the one case, and the conditions themselves shading off into each other in endless gradations. For instance, enfeeblement of mind may be found to a greater or less extent along with

depression or exaltation ; and, indeed, it is far more common to find 'mixed' forms of mental disturbance of this kind than to get typical exaltation or typical depression alone. It may then be difficult to say which of any two states found is the leading one ; and in describing the case we have to indicate that the patient shows, say, mixed exaltation and enfeeblement, rather than one of these conditions alone. Many patients, especially those who have been insane for several years, may be described as suffering from *chronic mania* (exaltation) or from *chronic dementia* (enfeeblement), according as we allow greater prominence to the excitement or to the enfeeblement of mind in the case.

(2) The object of this chapter has been to describe the mental symptoms in insanity, and hence little has been said in it about bodily symptoms, except in occasional illustrative instances. But many forms of insanity, especially the recent and acute varieties, are accompanied by indications of marked alteration of the bodily health, and the attendant should carefully notice these bodily symptoms (such as loss of appetite, refusal of food, constipation, sleeplessness, etc., as described in Chapter I.) in addition to the purely mental symptoms, and should regard them as being an essential part of the illness.

VARIETIES OF INSANITY.

The following names are given to the more common forms of insanity :

1. *Congenital Imbecility and Idiocy.* — Mental feebleness or defect, which has existed from birth or from infancy, the mind never having reached its proper standard of development. The term 'imbecility' is applied to the slighter degrees, and the term 'idiocy' to the more marked degrees, of this congenital defect.

Various Forms of Insanity. 17

2. *Melancholia.*—States of mental distress or suffering, the patient being always more or less wretched or unhappy without real or sufficient cause (mental depression). There may be but the simple feeling of depression or dulness to a greater or less degree ; or delusions may be developed, which are of a more or less distressing character, and aggravate the condition.

3. *Mania.*—There is here exaltation, or morbid activity of the mental powers, shown in excited conduct and speech, usually with

delusions, but without any feeling of mental distress. The term 'monomania' is often applied to those cases in which the insanity shows itself mainly in fixed delusions limited to one subject or one set of subjects, as mentioned previously (p. 73).

4. *Dementia.*—Mental feebleness similar to imbecility, but coming on in a person whose mental powers have previously been of a healthy standard.

5. *General Paralysis.*—This form of insanity results from degeneration and wasting of certain portions of the brain, and is marked by a combination of mental and bodily symptoms. The disease tends to increase more or less steadily, and is practically always fatal, the patient usually dying in from two to three years, though there is considerable variation in the length of the illness. Mentally there is a gradually increasing enfeeblement, which in the last stage of the disease is very profound; often with periods of more or less acute excitement, delusions of great power and wealth, restlessness, and propensity to steal and hoard rubbish. This delusional condition often prompts the patient to engage in struggles and feats of strength, which are beyond his power, and therefore attended with risk of injury. The bodily affection consists in a paralysis, which usually affects, in the first place, the lips and speech, and gradually extends over the whole body, until the patient becomes utterly helpless. The power of swallowing is more or less impaired, and there is thus risk of choking when food is being taken. The patient loses power over the bladder and bowels, and becomes wet and dirty in habits. Often there is inability to empty these organs properly; the bowels become loaded, and the bladder over-distended, and this may lead to serious risk. Even when urine is constantly dribbling away, it may be found that the bladder is much distended, as it is only the 'overflow' which is escaping; hence it is very important to see that the bowels are evacuated and urine passed regularly. The nutrition of the body is affected; the bones become brittle, and may be fractured by very slight violence. Convulsive seizures, similar to epileptic fits, often occur in general paralysis; and there is also a liability to attacks of congestion of the brain, in which the patient lies unconscious, as if in an apoplectic seizure. In the last stage of the disease there is great loss of flesh; bedsores readily form, partly from the effect of pressure on the

General Paralysis: its Symptoms.

degenerated tissues as the patient lies in his bed or chair, and partly from the action of the urine on the skin when the patient is allowed to be wet.

6. *Epileptic Insanity*.—Associated with epilepsy we frequently find attacks of excitement. This excitement may come on before the fits or after the fits, or may occasionally take the place of the fits, and it is often of the wildest and most furious character. Delusions are common, as also are hallucinations of sight and hearing. There is frequently great suspiciousness; and often the soreness and muscular pains, which are felt after the convulsive seizure, are attributed by the patient to rough usage by those near him at the time of the fit. As already mentioned, there is often intense irritability and quarrelsomeness, with great impulsiveness and deficient self-control, leading to violent and homicidal acts. Sometimes in these violent acts the patient is quite unconscious of what he is doing. When epileptic fits recur frequently over a long period, there usually results more or less marked enfeeblement of mind.

Epileptic Insanity.

ANOTHER MODE OF CLASSIFYING INSANITY.

Many insane patients show a marked similarity in the symptoms and progress of their illness, according to the age at which it has occurred or the condition which has brought it on; and thus we can place them in certain well-marked groups, which show another mode of classifying the forms of mental derangement. A few examples, taken from the most frequent forms of insanity, may be given here. The mental disorder which occurs between the ages of 18 and 25 years (*adolescent insanity*) is usually characterized by spurts of great maniacal excitement or exaltation, with fantastic behaviour, depraved habits, and violence, and often by a strong tendency to relapse—that is, to the excitement returning again after some improvement has apparently been made. Less frequently it is shown in depression of mind. The climacteric or 'change of life' (which occurs about the age of 45 or 50 years in women, and about the age of 60 in men) has also its characteristic form of insanity, marked by great depression, groundless anxiety and fears, delusions of a distressing nature, and suicidal impulse (*climacteric insanity*). The mental derangement of old age (*senile insanity*) is shown in confusion of mind, loss

of memory (especially for recent events), and general stupidity, often combined with much restlessness and a constant tendency to aimless wandering. Associated with the predisposition to lung disease (consumption or phthisis), there is sometimes found a morbid discontent, irritability, and moodiness, which may increase to actual delusions of poisoning or of suspicion (*phthisical insanity*). Alcoholism produces several varieties of mental disturbance; and to some of these reference has already been incidentally made. *Delirium tremens* is (in a medical sense) really an acute form of insanity caused by alcohol; it is marked by restlessness, talkativeness, incoherence, hallucinations of sight and hearing, a feeling of terror, and sometimes by suicidal tendency, along with typical muscular tremulousness. The chronic forms of *alcoholic insanity* exhibit, in varying degrees, mental enfeeblement, impairment of memory, delusions of suspicion, hallucinations of hearing, loss of self-control, and often much hypocritical pretence and an utter disregard of truth. Homicidal as well as suicidal impulse is seen pretty frequently in the insanity of alcoholism.

A recent or acute attack of mental derangement may end in recovery or in death; or the symptoms may persist, though in a less severe form, for years or permanently, making the case one of chronic insanity. In some cases the acute symptoms may pass off, but the patient, instead of recovering his normal mental power, may, as so often happens, remain enfeebled and wrecked in mind (*chronic dementia*).

QUESTIONS ON CHAPTER II.

1. What do you understand by the word 'mind'?
2. How may we regard 'mind' from the point of view of constitution?
3. What are the intellectual faculties, and how are they related to intelligence?
4. What is the will?
5. What do you understand by the feelings and instincts?
6. What is meant by *insanity?*
7. Give instances to make your definitions clear.
8. How do you judge of a person's mental state?
9. Give a classification of the various symptoms of insanity.

10. Give examples of each of these states, and say what symptoms you would consider to be of special importance.

11. Define the terms 'delusion,' 'hallucination,' 'illusion,' and give examples of each.

12. How is the *will* affected in certain cases of insanity? Give examples.

13. Explain why the insane are not fully responsible for their actions.

14. Show how the feelings may be altered in insanity.

15. Describe the most usual insane habits and peculiarities.

16. How are suicidal and homicidal tendencies manifested? State in detail the symptoms and dangers to be watched for.

17. What are the more common forms of insanity? Describe a case of each kind.

CHAPTER III.

THE NURSING OF THE SICK.

MOST asylums contain wards set apart for the accommodation of patients in feeble bodily health. The sick and infirm persons in such wards naturally require more careful attention to their wants and symptoms than do those patients who enjoy comparatively good bodily health, and the wards and rooms in which they are placed also require to be kept especially clean, orderly, and quiet. These wards must be looked upon as most important, and the position of the attendants in charge of them is both difficult and honourable.

All attendants should acquire, as soon as possible, some knowledge of sick-nursing, as any one of them is liable to be called upon to perform this special and important duty.

In this section of the handbook a few plain directions are given to aid attendants in carrying out the orders of the medical officers regarding the sick.

SICK-ROOMS.

Special care must be taken to keep those rooms in which patients are confined to bed in proper order.

A full supply of fresh air is especially necessary in sick-rooms,
1 **Ventilation.** and this is obtained by ventilation ; oxygen, the most useful element of the air, is thereby admitted in suitable amount, and any excess of carbonic acid, noxious gases, and microbes are removed.

2 Ventilation may be : (1) Natural, as in the change of air produced by wind, or by currents of air of different densities and temperatures ; (2) Artificial. The latter method is nearly always necessary in large buildings, and is produced in one of two ways : (*a*) The *vacuum* method, whereby air is drawn out by means of fans, fires, steam or hot-air coils, etc., and (*b*) the *plenum* method, whereby air, suitably filtered, warmed or cooled if necessary, is forced in by a fan. Sometimes both methods are combined. Practically speaking, air in rooms is mostly changed by (1) perflation, as when the wind blows through ; (2) by differences of temperature, the warm, lighter air tending to escape through the walls and ceilings, out of chinks, up the chimney, sunlight, and upper ventilators, while cold fresh air tends to flow in below to take its place, through the lower ventilators, from open doors, from beneath the floor, etc. This is why we say that smells ascend, the particles of matter causing them being, it may be, drawn into the room, then rising as the air warms. In ordinary circumstances in this country we combine heating with ventilation, by supplying fireplaces, ventilating sunlights, stoves, and coils heated by steam, hot air, or hot water. Currents of heavy, cold air tend to hug the floor.

Attendants must constantly study the force and direction of the
Temperature. wind, and the variations of outside and inside temperature, in order to maintain, as far as is consistent with freshness, a uniform temperature of 58° F. to 62° F. in the sick-
3 room. The great advantage of windows on opposite sides of the room is that we can at will have a thorough free change of the air by opening both, or a slow process of suction by opening only the leeward. Bright fires are kept up in cold weather, and on hot days they are damped down by burning wetted slack. A number of windows a little open are better than one or two fully open, because they break up the incoming cold currents. Likewise by opening them at the top one can mix the air better. At intervals all the windows should be fully opened for a minute or two, in order

that a free current may blow through, provided this can be done without exposing the patients to an injurious draught.

Light.

In a sick-room the light should be subdued, but cheerful. Sunshine should generally be allowed to enter freely, but not to stream on a patient's face and cause discomfort. The window-blinds require constant attention as the sun shifts its position. No more gas should be used than is required for proper supervision and attention to the wants of patients. It is to be remembered that burning gas rapidly consumes the life-giving properties of the atmosphere, and its glare is apt to irritate and induce wakefulness.

Cleaning Rooms.

The greatest care is necessary in cleaning frequently every nook and corner of the sick-room. The microbes which cause disease 4 lurk in the dust and solid refuse, especially in particles of fatty matter, in the chinks and corners, having settled there after floating about in the room. These particles come from the decomposing sweat of the patients, the discharges, urine, scraps of fluff off clothing, and the putrid matter exhaled by the breath. Sick-room smells are mostly caused by particles of solid matter which, floating about, come in contact with our nostrils; they are an index of want of cleanliness and ventilation. All soiled sheets, clothing and dressings must be instantly removed from the room, and not left for even five minutes, and all dirty bedpans, commodes, and urinals must be similarly treated. While being carried away they should be covered by a wet cloth, which entangles the smelling particles, and is much more efficacious than a wooden or earthenware cover. All dressings must be burned as soon as they are taken off. The 5 floors of rooms must be frequently cleaned, using as little water as possible, and drying afterwards with old cloths. Damp floors are a source of serious danger, owing to the rapid evaporation cooling and moistening the air. Nowadays wax dissolved in turpentine is mostly used for cleaning. Do not highly polish the floors, lest the patients slip and injure themselves. At frequent intervals all the old wax, with which is incorporated much filth, must be carefully scraped from all corners, beadings, etc. Before dry-rubbing a floor remove the dust. This should be done by damp mops which gather it up. Nothing is so futile as to brush up clouds of dirty dust, which straightway settles in another place. All beds and

articles of furniture must be moved in order that the floor space under them may be cleaned. When the floor is finished, all level ledges and spaces, such as chairs, tables, window-ledges, cornices, dado-beading, door-frames, and tops of pictures, must be dusted, and a damp duster should be used, which will gather all the dust, instead of merely sweeping it off on to the floor.

In the case of single rooms, and other places where dirty patients have been, it is very necessary to scrape the fæces from all corners, chinks between the boards, ventilator gratings, etc., and the water must be frequently changed and plenty of soap used. Do not desist while any smell remains. None of the so-called 'deodorizers' should be used in such circumstances; for they merely cloak the smell without exercising any benefit, the solid filth remaining as before.

The question of antiseptics, or substances which kill microbes, is closely associated with cleaning. Those chiefly used are soluble in water, and the strengths vary greatly. Boracic acid (1 in 16), carbolic acid (1 in 20), iodine, chlorine and quinine (all 1 in 500), and corrosive sublimate (perchloride of mercury—1 in 1,000 to 1 in 4,000), are the commonest; together with iodoform for sprinkling on wounds. There are also many more or less useful patent preparations—Creolin, Izal, Jeyes' fluid, etc. Attendants should remember that nearly all good antiseptics are in the nature of things highly poisonous, and should keep them carefully locked up in the medicine cupboard. They should be used in the exact definite strengths ordered by the medical officer. It is of no use to add a few drops of 1 in 20 carbolic to a bowl of water, and imagine one is using an antiseptic. Every strength must be measured; antiseptics are usually sent into the ward stronger than necessary, in order that for use a certain definite proportion of hot water may be added. Carbolic acid is the most generally useful, and is used for dressings in a strength of 1 in 40, or, if covered with guttapercha tissue, and kept on as a moist dressing for a long time, then 1 in 100 is sufficient. Calvert's No. 2 is generally selected for wounds, but for disinfecting linen No. 3 is good enough. The most economical way of treating large articles is to moisten them with the solution and pack them over-night in large tin pails with a close-fitting lid. In the morning they can be removed as they are to the disinfector.

6 **Antiseptics.**

It cannot be too strongly insisted upon that *asepsis*, or the prevention of putrefaction by absolute attention to cleanliness, is much more important than the destruction of infection already on the spot. For this reason the avoidance of dust, the careful cleaning of small corners, whether of rooms, utensils, instruments or hands, and a plentiful supply of soap and water, are at all times essential. The hands must be washed many times a day, after touching any dirt or cleaning patients, before serving their food, giving medicine, or dressing wounds. If large aseptic wounds have to be dressed or catheters handled, much more care is necessary. The infective material is chiefly gathered by the fatty particles on the skin, and lodges especially at the corners of, and under, the nails. The hands must be first thoroughly scrubbed with a nail-brush dipped in turpentine, and then again with soap and hot water. Lastly, they must be rinsed in carbolic, boracic or sublimate lotion. When dressing wounds or attending to patients, attendants must always wear a clean apron, sufficiently thick to prevent the discharges soiling their clothing, for this is one of the commonest vehicles of infection.

Cleaning of Instruments, Hands and Utensils.

Surgical instruments must be cleaned deliberately, as haste means inefficiency. All corners, edges, hinges, etc., must be thoroughly scraped out, and all dirt removed by soap and water. Before use they are rendered aseptic by steeping them for half an hour in antiseptic lotion, or by boiling them. No metal instruments ought to be soaked in sublimate solution, for an amalgam forms which destroys the temper. Catheters, if of silver or soft rubber, stand caustic alkalies, and should be boiled in soft soap or strong soda solution, and then soaked in boracic. Soft rubber is injured by carbolic acid. Gum-elastic catheters should not be boiled in soda, as they are thereby destroyed. They should therefore never be used except in special cases where the medical officer asks for them. 7

Ward utensils and dishes are cleaned by boiling water and rubbing with soap. Mere *hot* water is of no use for disinfecting ; it must be actually *boiling ;* or the utensil may be boiled, if a large pan supplied with a steam-pipe is fitted in the ward kitchen ; though this is only necessary in infectious cases. In such diseases as typhoid fever, colitis, and tubercular enteritis the *bedpans* require complete disinfection. They must be taken straight out of the

sick-room after use, and the fæces scraped out with a small piece of stick and rinsed once or twice with a very small quantity of water into old meat-tins containing sawdust. The stick is burned, and the tins removed to a *destructor* and there burned. The bed-pans are next rinsed with a little crude commercial carbolic acid or Jeyes' fluid, which is allowed to stand in them some time, and then they are cleansed with boiling water and soap. They must not be set down on any place which cannot be thoroughly cleaned, and attendants must remember that whatever touches infective material carries infection. No linen used by any infective case is to be mixed with the general ward washing. It must be kept separate, and removed daily to the disinfector.

Quiet.

Anyone who has suffered from even so mild an ailment as a slight headache can appreciate the necessity of quiet in a sick-room. Loud talking, the wearing of heavy boots, clattering of plates, banging of doors, etc., should be avoided.

Cheerfulness.

Much may be done by a good attendant to make a sick-room and its occupants cheerful by attention to the little wants of the patients ; by providing them with books and work, when these are allowed ; by talking with those inclined to conversation, and by attention to flowers, to the neat serving of food, orderly arrangement of bed-clothes, etc.

GENERAL DIRECTIONS REGARDING THE CARE OF THE SICK.

Food, etc.

The meals of the sick should be carefully and neatly served. A neat morsel, served at the right time, may tempt a capricious appetite, which might reject a half-cold and slovenly-served dish. All extra diet must be strictly adhered to.

Sick Diet.

A few remarks on sick diet will be useful. Patients who are suffering from inflammatory disorders and those who are much exhausted have very weak digestion, and so must be given food of such a nature as may be easily digested and absorbed. The nourishment which is the most easily digested is in the form of liquids, or, as people call it, *slops*. Milk is the most useful of these, as it has all the principles which are necessary for life ; and, as it contains a quantity of water, it relieves the thirst which is a constant symptom in feverish patients.

Some patients, however, cannot take it unless it is boiled, or mixed with an equal quantity of water, soda-water or seltzer-water. If given by itself it is apt to disagree, and then hard, curd-like masses are found in the stomach, which are either vomited or pass undigested into the bowels. This is a dangerous matter in cases of typhoid fever, because there is ulceration of the intestines in this disease; and curd-like masses passing into the weakened intestine would possibly cause rupture, and the contents passing into the cavity of the abdomen would set up internal inflammation—a very fatal complication. If milk be mixed with a little ground rice, arrowroot, or isinglass, not only will the nutritious value of the food be increased, but the formation of curd in the stomach may be prevented. Milk should always be boiled if it is not fresh. Boiled milk is useful in cases of diarrhœa, especially when mixed with arrowroot, ground rice, sago, tapioca, etc. If milk cannot be taken, then whey, which is composed of the mineral matter, sugar, and watery portion of milk, may be given. Whey does not contain the curd and a great deal of the fatty part of the milk, and is more easily digested. To the whey may be added strong beef-tea or the yolk of an egg previously whipped up in order to make it more nutritious. The yolk of an egg beaten up with hot milk, or with mutton-broth or soup, will also be found useful.

Good beaf-tea is made by putting a pound of well-minced lean beef in a pint of water in a jar, covered at the top, for an hour. The jar is then put to stand in a saucepan of water for another hour and gently boiled. The liquid is strained off from the solid part and used. In the same way tea can be prepared from mutton, chicken, or veal if requisite. A common way of preparing beef-tea is to put the meat into a saucepan of water and boil; but in this case only broth or soup is produced, which contains the mineral and flavouring matters of the food, but not much of the tissue-food constituents (albuminous, *vide* p. 33).

Most jellies are useful, because, though they consist chiefly of gelatine, which is not a tissue-forming constituent, patients can easily digest them, and they do to some extent help to save the wasting of the body from disease. Clear soups and broths when used should always have the juice of fresh vegetables added to them. By putting finely-cut carrots, turnips, etc., together with mint, parsley, etc., into a muslin bag, and then boiling and pressing

them, a juice will be formed. This when mixed with the broth will not only make it more tasty, but constitutes a wholesome diet. Starchy foods, such as arrowroot, ground rice, sago, tapioca, when prepared with milk, are useful in certain cases of diarrhœa ; and if added to soups and broths, the latter will be more nutritious, as they contain fuel-food.

In some cases it is necessary to give food in a concentrated form, and then concentrated and preserved foods, such as Liebig's extract of meat, Bovril, Kreochyle, condensed milk, may be used. In cases in which the digestion is very feeble the various peptonized or pre-digested foods, such as Liebig's, Allen and Hanbury's, Savory and Moore's, and Mellin's infant foods, peptonized meat, and peptonized milk and cocoa, will be advantageous.

As the patient gains strength and the digestion improves, the diet may by degrees be altered, and gruel, milk puddings, fish, boiled chicken, and game can at different times be given.

During sickness drinks such as lemonade and orangeade, to which some sugar is added, are refreshing. Barley-water, rice-water, and oatmeal-water are nutritious as well. Linseed tea is useful in chest affections and black-currant drink in colds and throat complaints.

9 No sick patient should be given anything to eat but what has medical sanction. In some diseases (ulceration of the bowels, typhoid fever, etc.) unsuitable food may kill the patient. In all acute diseases the digestion is more or less weakened, and injudicious feeding may cause vomiting and exhaust the patient. Any articles of diet brought in by friends should be taken in charge by the attendant, and nothing given to the patient before obtaining medical permission.

Sick persons, especially amongst the insane, are apt to refuse food ; but in many cases, by persuasion and patience, an attendant will succeed in getting them to take it. Patients' tastes and fancies, for or against various articles of food, should be observed and reported.

All beds should be frequently aired, and should be as thoroughly made as possible every day ; but no patient, suffering from serious bodily disease, should be raised for this purpose, without special medical sanction. The bedclothes should be neatly arranged, and kept drawn up near the chin of the

Beds.

patient, who should be discouraged from keeping his arms out and chest bare, unless these are protected by a flannel jacket or other extra covering. Many of the insane are constantly throwing off the bedclothes, which require to be as frequently replaced. A patient lying half covered presents an appearance of neglect and suggests slovenly management, besides being exposed to the risk of catching cold. Some margin may be allowed for the fancy of an individual patient as regards the quantity of bedclothing, but in no case is he to be allowed to become cold, an extra amount of bedclothing being frequently required to keep the bodies of feeble sick persons properly warm. Cold feet are dangerous in all cases, and often cause great restlessness and sleeplessness in old feeble persons. When the feet are found to be cold (and they should frequently be felt to ascertain this), a hot-water bottle *wrapped in two or three layers of blanket* should be at once applied. The latter precaution is essential, many patients having been seriously injured by the omission to properly protect the bottle.

The under-sheet is to be kept perfectly smooth and scrupulously free from crumbs, etc. Wrinkles in the sheet, and crumbs lying on it, give rise to great discomfort, and frequently cause troublesome bed-sores.

A piece of waterproof sheeting should be placed next the mattress of all wet and dirty cases in order to keep it clean. It requires frequent washing, and the mattress should be at once removed if it absorbs any discharge through the displacement of the waterproof sheet.

As a rule, the sheets should be changed as often as they become wet or dirty, no matter how often this may occur. In some cases of paralysis or great weakness, the stools and urine are passed almost continuously, and the condition of the patient renders it undesirable to fatigue him by frequent changing. In such cases the *draw-sheet* is of great service. A draw-sheet is a sheet folded 10
several times lengthwise; one sheet thus folded is passed beneath the loins of the patient, and above the usual under-sheet, and should extend from the patient's waist to his knees. When one portion becomes soiled, the draw-sheet should be removed and a new one substituted. It is important that attendants should know how this is to be done. The patient should not be removed from the bed, but be lifted as near the edge as possible. The

soiled sheet should then be rolled up lengthwise, and placed close to the side of the patient. The clean sheet is then placed on the side from which the soiled one has been removed, spread out over the bed, and the spare portion, rolled up, is placed close by the soiled sheet. The patient is then lifted on to the clean sheet, the soiled one taken away, and the folded portion of the clean one pulled out, and this and the other side tucked in under the mattress. A draw-sheet is not only useful to absorb fæces and urine passed by the patient ; but it is a great relief to him, when he has been lying for a long time in one place, to have a cool part substituted for the portion he has been lying on. Various forms of urinals are used to receive the urine of patients passing it unconsciously. These should be kept constantly in position, and are to be frequently emptied and kept scrupulously clean.

Air-beds, water-beds, and water-pillows are frequently used. The latter should be filled with water somewhat below the temperature of the human body, as ascertained by thermometer, say 90 degrees.

A patient must not be taken out of bed and placed in a bath without special orders. When a bath is given to a sick patient, great care must be taken that he is warmly clad while going to and from it, that he is not exposed to draughts, and that all linen, etc., is ready, aired and warmed, so that no time may be lost in covering him again. Much may be done to keep the persons of patients lying in bed clean by careful sponging. One limb should be sponged at a time ; then the front of the body, and then the back. Each part thus sponged should be carefully dried before a fresh part is commenced with. In order to prevent the bed-clothes from becoming damp during this process, the patient should lie on a mackintosh sheet covered with an old woollen blanket. These can be passed under the patient in the manner described for the draw-sheet. It is not necessary to use a large quantity of water ; sufficient to moisten the sponge will do. The face may in all cases, when there is no special disease of that part, such as erysipelas, be kept clean by tepid sponging. If flies settle on the face, it should be covered with gauze or mosquito curtain. To remove the matter that so often accumulates between or around the eyelids, they should be moistened with warm water, and the crusts or accumulations wiped away.

Cleansing of Sick Patients.

11

In serious cases the lips and mouth become dry and crusted. These crusts may be partly removed with a small stick covered at one end with soft lint and dipped in water or some lotion (such as glycerine and borax). Special attention should be paid to keeping clean the lower parts (buttocks, etc.) of patients.

The hair of the sick is very liable to become infested by lice or 12
nits, and requires care. Carbolic and other lotions will kill the lice, and they can then be removed with a fine comb; it is well that attendants should make a practice of carefully combing the hair of patients at least once a week.

The eggs or nits, being fastened to the hairs by a peculiar adhesive substance, are more difficult to remove. Turpentine, methylated spirit or spirits of wine dissolves this substance, and the nits can then be combed out as before. The head may afterwards be washed with a carbolic solution.

The nails also grow fast and require frequent cutting. Patients who suffer from chilblains should wear woollen gloves and thick stockings, and those who are very feeble should wear woollen bed-socks at night.

Among the frequently preventible diseases in asylums, phthisis is one of the most common. It is often spread by overcrowding, 13
by the lack of efficient ventilation, especially in dormitories, and by the diffusion of sputa containing the bacilli about the room. To combat the disease the windows should be kept a little open at night at the top, and patients encouraged to leave them so. All day as much sun and air as possible should be allowed to enter the dormitories. The tubercle bacilli are harmless while moist, but as soon as they dry they rise and fly about in the dust. Spitting about the floor must be strictly prohibited, and attendants should set an example to patients by avoiding the dirty habit of tobacco-chewing. It is especially necessary to prevent patients spitting down the covers of the heating-coils, or grids of ventilators, and upon doormats, for they are apt to become perfect hot-beds of infection, owing to the rapid drying and the constant upward currents of air. The spittoons must be frequently cleaned with boiling water and rinsed with Jeyes' fluid or other disinfectants, the sputa being collected on sawdust or coaldust, and burned before they have time to dry. The ward handkerchiefs

Prevention of Phthisis.

must not be supplied to phthisical patients, but soft rags given instead. These should be collected twice a day and burned. All sputa on the floor are to be rubbed with a rag dipped in carbolic lotion (1 in 20) which is then burned.

14 Attendants must be constantly on the look out for early phthisis, and bring suspicious cases under the medical officer's notice at once. The symptoms likely to attract attention are loss of weight, cough, raised temperature in the evening, night sweats, or some change in the general appearance or habits of the patient.

15 In many cases of disease *charts* are kept, showing the degree of the temperature, the rate of the pulse, and the frequency of respiration at certain times, and attendants should learn to fill these in accurately and neatly. Other papers also are kept in some cases, on which are recorded the temperature of the room at stated intervals; the amount of food, drink, and stimulants taken, and at what hours; the amount of sleep obtained; the frequency of stools, of fits, of paroxysms of coughing, etc. All entries on charts or records should be made at once, for experience shows that the best memory is not to be trusted on these points.

Keeping of Charts and Records.

Attendants in charge of the sick will find it useful to keep a private note-book in which to enter, between each medical visit, any symptoms or matters of interest occurring in the patients, that do not require to be immediately reported. Such a book, carefully kept, will prevent the danger of any symptom being forgotten, and in it may also conveniently be entered any fresh instructions regarding medicines, etc., given by the medical officers at each visit.

Attendants should be able to report intelligently regarding the symptoms of the sick under their charge to the medical officers at their visits.

Noting of Symptoms.

16 Among the principal subjects on which information may be asked are the following:

Appetite.—The amount of food taken; the mode of chewing and of swallowing.

The refusal of even one meal by a patient must be reported. It may be due merely to dyspepsia or constipation, or an ulcer of the mouth, or a bad tooth; but it may be the earliest available symptom of serious illness, such as pleurisy, pneumonia, or peritonitis. The exact amount of each article of diet must be

noted down, also the exact hour at which it was taken. Unless this be done, sick patients are apt to be overfed on the one hand, or, on the other, melancholics to be persistently underfed, for they may take only a portion of each meal. Delusional cases may secrete or give away most of their food if not closely watched, and general paralytics, dements, or idiots may overfeed themselves.

The mode of chewing and of swallowing is most important, for in general paralytics the paralysis comes on slowly, and they must be put on soft diet well within a safe limit. Those whose speech is much affected frequently suffer earlier in this respect. Degraded patients are apt to swallow large lumps of unmasticated food, and also to cram their mouths too full. Soft-diet cases, spoon-fed by an attendant, must be given small amounts, with plenty of time between each morsel; attendants are prone to feed them too quickly in order to save time. A furred tongue or offensive breath tells of some digestive disorder, often constipation.

Vomiting.—Every case of vomiting must be reported, and the vomited matter should be saved for the medical officer's inspection (*vide* Chapter I., p. 57).

Bowels.—How often moved, and at what times. Whether the 17
stools are full or scanty, natural, costive, relaxed, watery, painful, bloody, or of peculiar colour or smell. Whether they contain foreign bodies sometimes swallowed by the insane, such as pebbles, buttons, etc.; or contain worms, and of what kind the worms are —whether thread-worms, round-worms, or tape-worms. Whether the patient is attentive to the calls of nature, or wholly or partially neglectful in this respect.

Urine.—How often passed, and in what quantity. Whether it is natural in colour, or unusually pale or dark. Whether it is clear or turbid, or contains blood or matter or gravel. Whether it remains clear, or deposits a sediment on standing, and the colour and quantity of the sediment. Whether it is passed easily, or with difficulty or pain. Great attention should be paid to paralytic patients, and, indeed, to all who are seriously ill, and to those recently admitted, and it should be at once reported if they do not pass water for some length of time, appear wishful, but unable to pass it, or pass it constantly in a feeble trickle; all these conditions showing that there is something very serious amiss.

It cannot be too strongly impressed upon attendants that when urine dribbles away the bladder is nearly always distended and rarely empty (*overflow incompetence*). Able-bodied patients of wet habits pass a considerable quantity at a time with comparatively long intervals; that is, the bladder empties itself automatically when full (*reflex incompetence*). In a third form there is *paralytic incompetence*, either due to paralysis of the sphincter of a flaccid bladder (as in the third stage of general paralysis), or, more often, it is associated with a contracted and chronically inflamed bladder, *e.g.*, due to the passage at some former time of a septic catheter, to neglected distension, etc.

In some cases it may be necessary to carefully collect and measure the whole of the urine passed in a day. It must be kept in a perfectly clean utensil with a tight cover, so as not to become putrid before the medical officer examines it. In acute nephritis (inflammation of the kidneys) the amount may be very small (*e.g.*, 10 ounces a day); with chronic Bright's disease, on the other hand, it may reach 60, 80, or 100 ounces. When thus collected, the attendant should be careful to mix up all sediments as well.

Before catheterizing a patient, a hot bath, hip-bath, or an enema may be ordered; all directions should be carefully followed, especially as regards local cleaning of the patient, cleanliness of instruments, etc.

18 *Cough and Expectoration.*—Note the frequency of the cough, and its character, whether slight or severe, dry, or accompanied by expectoration, etc. The character of the spit (which should be received in a spittoon), whether clear or opaque, tinged with blood, or dark-coloured, must be reported. If a patient brings up blood, the attendant should notice the colour, and whether it comes on after a fit of coughing, or after vomiting, or whether it is only due to bleeding of the gums.

The spit, and all unnatural motions and discharges, should be preserved for inspection at each medical visit.

19 *Other Important Symptoms* are attacks of shivering, bleeding at the nose, fits, attacks of faintness, hæmorrhage from ears, eyes, nose, or mouth, stertorous or difficult breathing, fits of choking and swellings in the groin. All these must be reported at once.

Pain.—Any complaint of pain on the part of a patient should be noticed and reported, and also if a patient appears to shrink, or

complains of pain on any portion of the body being touched. All pressure on, or interference with, painful parts is to be avoided.

Complaints of pain or peculiar sensations must be reported.

Sleep.—Note how long (the exact hours should be noted) and at what times ; whether peaceful or disturbed, whether light or profound, or altogether absent. Sleeplessness often depends upon want of exercise, an empty stomach, or an uncomfortable bed. Patients who do not sleep, or who sleep badly, should have exercise, and, if they will not do so voluntarily, be made to walk about with attendants under medical orders. A little milk or arrow-root at night, a comfortable bed, and wrapping the feet of one who suffers from cold in a hot blanket, will considerably help a sleepless patient. Unusually deep sleep, with heavy breathing and a difficulty in arousing the patient, may indicate a dangerous condition.

All restless cases, as well as patients suffering from senile dementia or general paralysis, who are prone to walk about the room during the night, must be kept warm. They are very liable to sudden collapse, and should be carefully watched. If collapse should occur, they must be kept in bed until the medical officer sees them.

Effects of Medicines and Stimulants.—When medicines are given the effect should be watched, especially in cases where sleeping-draughts have been administered. When stimulants are given, it should be noted whether they appear to soothe or excite, to increase or diminish strength, to cause drowsiness or wakefulness, or to be followed by flushing of the face.

External Appearances.—Other things to be noticed are the expression and colour of the face, swellings of the eyelids, feet, or ankles, flushing of the cheeks, paleness of the lips, giddiness, twitching of the mouth or the drawing it to one side, squinting, a fixed condition or irregularity in size of the pupils, twitching of the muscles of one side of the body, dragging of one foot, a staggering gait, and stuttering or imperfect articulation of words. All bruises, eruptions, sores, swellings, distortions of the limbs, or other unusual external appearances, are to be reported, every opportunity being taken while patients are changing their clothes or being bathed to see that all is right in these respects.

The meanings of some of the symptoms which have been mentioned will more forcibly impress their importance on the mind of the attendants. **Indications of Symptoms.** 19

Shivering is often the first symptom of inflammation of the lungs or of fever ; on its occurrence, the temperature of the body should be at once taken.

Convulsions occur in apoplexy, epilepsy, general paralysis, and kidney diseases, and in digestive disorders or diseases in children.

Violent fits appear in cases of drunkenness, hysteria, or epilepsy.

Hæmorrhage from ear, eyes, nose, or mouth occurs in fracture of the skull.

Stertorous breathing is found in apoplexy and compression of the brain.

Difficult breathing is a symptom of disease of the lungs, obstruction to the air-passage, injury to the nervous supply of these organs, disease of the heart, and broken ribs.

Swellings in the groin are important, as they generally are a symptom of rupture.

Swellings of the eyes, feet, and ankles are found in heart and kidney disease.

A flushed face occurs in intoxication, apoplexy, epilepsy, and in disease of the lungs and fevers, as well as with indigestion.

Giddiness may indicate stomach, liver, kidney or brain disease.

Drawing of face to one side, squinting, dilated, fixed condition of pupils, irregularity in size of pupils, twitching of the muscles, and dragging the foot on one side of the body, may indicate paralysis from disease or injury to the nervous system.

A staggering gait is a symptom of disease or injury to the brain or spinal cord, as well as of intoxication.

There are several *infectious* or *contagious diseases*, with reference to which some important points may be mentioned. They are scarlet fever, small-pox, measles, German measles, typhoid fever, typhus fever, erysipelas, diphtheria, chicken-pox, mumps, and whooping-cough. In all these diseases the patient becomes a source of danger to others, as the contagion is given off from the body by the breath, skin, secretions, or evacuations. When this contagion has entered the body, there is first an *incubation* or hatching period, which varies in time according to the nature of the disease.

Contagious Diseases.

As the poison increases in power, the beginning or *invasion* of the attack sets in. There is a rise of temperature of the body and a state of feverishness or fever, the fluctuations of which will vary

with the disease. Sometimes it commences with shivering fits (*rigors*), headache, aching of the limbs, or even delirium. There is thirst, loss of appetite, a coated tongue, nausea, and even vomiting. The heart and lungs are affected, as shown by the increased quickness of the pulse and of the breathing. The skin is hot, dry, and parched, and the urine scanty and high-coloured.

As the attack goes on, the fever reaches its height, and in most of these affections a characteristic *rash* or *eruption* appears at a time which varies with the disease (*e.g.*, it appears on the second day in scarlet fever, on the third in small-pox, etc.). In diphtheria, mumps, and whooping-cough there is no rash.

Some parts of the body are more severely affected than others in 20
these contagious disorders, and some parts appear to be more infectious than others. Thus, in scarlet fever there is sore throat and a skin eruption, and the contagion is communicated by the peeling skin, the discharges from the throat, and the breath ; in small-pox by the scabs and bits of skin from the rash ; in measles by the expectoration, the breath, and the discharges from the mouth and nostrils, as well as from the skin ; in typhoid fever by the motions, the poison chiefly affecting the bowels and urine; in typhus by the skin ; in erysipelas by particles of skin from the affected part ; in diphtheria, in which the throat is attacked, by the breath and the throat discharges ; in chicken-pox by the scabs which are formed ; in mumps by the breath ; and in whooping-cough by the breath and discharges from the throat. After a time the patient either dies or recovers ; in the latter case the symptoms subside, there is a decline of the fever, and the patient becomes convalescent.

Of course, during the time that a patient is suffering from an attack he is a source of danger to those around him, and any person who has been exposed to the contagion of any contagious fever should be kept apart from others, so as to be certain that he has not acquired the disease, and does not carry the contagion about his clothes. In most infectious fevers the period of active infection is probably the early stage, not unfrequently, as in measles, before the characteristic rash appears ; hence the importance of watching carefully the first appearance of the eruption, and the importance also of isolating suspicious cases.

Good ventilation is especially necessary in the case of all the 21

eruptive fevers. The secretions and discharges of the infected person must be guarded against and got rid of. Secretions from the eyes, nostrils and mouth of cases of measles and small-pox, and the discharges from the throat of diphtheria and scarlet fever, should be wiped away with pieces of rag, which should at once be burnt. The mouth should be rinsed out, and the patient persuaded to gargle his throat with some disinfectant. The face, upper and lower extremities, and body should perhaps be sponged with tepid water, to which a disinfectant should be added. When the skin peels off, as in scarlet fever, or its surface becomes scabby or rough, with contagious scurf or other material, as in small-pox, the application of camphorated or carbolized oil may be ordered to prevent the contagious particles from flying off into the air of the room, and settling on to clothing or bedding. Contagious expectoration must be received into spittoons containing a disinfectant. In typhoid fever the stools and urine should be disinfected immediately by receiving them into a vessel containing a solution of carbolic acid, or other disinfectant ; and they should be removed from the room at once. The bedding, clothing and body linen which are infected by the secretions or discharges of the patient should be steeped in a tub containing a disinfectant liquid, or placed in an apparatus for disinfection by heat, and the rags and mops which have been in use should be at once burnt.

SPECIAL DUTIES.

The normal *temperature* of the human body is 98·4°. The temperature of a patient is usually taken by placing a thermometer in the armpit. The *index* of the thermometer should be gently *shaken down* to 95° *before each observation.* It should then be placed close to the skin, with its bulb in the centre of the armpit, and the arm brought close to the side of the body. Care must be taken that the skin is dried, and that there is no clothing between it and the bulb. The thermometer must be left in from two to ten minutes, according to the delicacy of the instrument used. It will be necessary to see that for some minutes previously the patient has been clothed up to the chin, or, if in bed, well covered up. Inattention to these points may lead to error.

22 **Taking Temperatures.**

Temperatures are sometimes taken in the mouth; but attendants should never attempt to do this in the case of insane patients.

The temperature in *pyrexia* (fever) may be raised gradually, or, 23
as in some fevers, rapidly, with much shivering, chattering, and sensation of cold (although the temperature is really raised much above normal)—that is a *rigor*.

Pyrexia is divided into three stages: (1) *Invasion*, often ushered in by a rigor; (2) *acme*, or height of fever, in which the skin feels hot; (3) *decline*, which occurs in two ways, by:

(*a*) *Crisis*, or rapid fall of temperature, with profuse sweating.

(*b*) *Lysis*, or more gradual fall of temperature.

The course of pyrexia may vary also. It may be (1) continuous; (2) remittent; (3) intermittent.

(1) *Continuous.*—In which the temperature is persistently above normal, with only slight variations between the morning and evening records (about 1° or 1½°).

(2) *Remittent.*—In which there are marked diurnal variations—that is, a difference of over 1½° between the morning and evening records.

(3) *Intermittent.*—In which the temperature suddenly rises to some height, to fall again to normal, or below, in a few hours, this occurring repeatedly.

The average rate of the *pulse* is seventy beats a minute for a man, and eighty for a woman. Feeling the pulse is performed by placing the first three fingers of the right hand on the patient's wrist, on its margin, just a little above the thumb. The pulse may be slow or fast, strong or feeble, regular or irregular, or intermittent. An attendant should be able to count the number of beats of the pulse per minute, and be prepared to report roughly on its character; but a proper appreciation of the indications of the pulse can only be made by a medical man.

Feeling the Pulse.

As a rule, an adult breathes from fifteen to eighteen times a minute. The *respirations* are *counted* by watching the movements of the chest, each rise and fall together making one respiration. This can generally be done without moving the patient's clothes. During the counting, it may be noted whether the breathing is regular or irregular, light or heavy, easy or painful, etc.

Counting Respirations.

24 *Dressings* of various kinds are applied to wounds and sores. They may be : (*a*) dry (cotton-wool, gauze, lint, etc.) ; (*b*) moist (lint soaked in plain water or some lotion) ; (*c*) oily (various ointments spread on lint).

They should be changed regularly, and should always be replaced or renewed when removed or destroyed by a restless patient. The old dressing should never be taken off until the new one is ready to be put on. Dressings are to be removed gently from both sides of the wound or sore at once, drawing it off towards the centre. The edges of the wounds and sores should be gently cleansed, but the surface should never be touched, except with such applications as may be specially ordered. Any alterations in the appearance of the sores should be noted when the dressings are changed. Everything required for a dressing must be in readiness before the operation is commenced. The old dressing should be removed at once from the sick-room, and burned.

Wet Compresses.—These consist of a roll of flannel or calico, wrung out of cold water, applied to the part, and covered with waterproof. Wet compresses should be allowed to remain on continuously, and should not be renewed, unless they become dry.

Hot Applications.—Heat is applied locally either in a moist or a dry form. Poultices and fomentations are examples of the former ; the hot bottle, hot sandbag, etc., of the latter.

Great care must be taken, in using all warm applications, whether poultices, fomentations, or stupes, that they are not too hot ; and the same caution is necessary in the case of enemas, and, indeed, of food, etc., given by the mouth.

Poultices are made chiefly of linseed-meal. If a mustard poultice is required, a tablespoonful of mustard should be sprinkled over the surface of the poultice after it is made,

Poultices.

25 but there are other methods of making this poultice. Mustard poultices must not be allowed to remain on the skin for more than a quarter of an hour or twenty minutes, or a nasty sore may be the result.

To make a poultice, get ready a piece of linen or tow, three or four inches larger than the poultice required. Put the linseed-meal before the fire, if there is no oven in the ward-kitchen. When the water boils, pour some into the basin. Throw this away, as it is simply used to scald the basin. Pour a second quantity into

the basin, and then add as much linseed as will be required for the poultice. Beat the mixture with a knife, fork, or handle of a spoon, until water and linseed are thoroughly mixed, taking care that the mixture is not too thin nor too dry. Turn out the mass upon the linen or tow, spread it over the surface with a knife, until it is about half or three-quarters of an inch thick, and of the size and shape the poultice is to be. If the poultice is made on linen, fold over the dry edges upon the poultice. Take care that it is not too hot, and, to avoid this, always test the heat with the cheek or back of the hand. Place the poultice on the part where it is ordered to be put. Do not press it down, but allow it to settle, and then cover it with a towel and clothing, to retain the heat.

A poultice applied all round the chest is called a *jacket poultice.* Such poultices require changing every two or three hours, the skin being gently wiped dry with a cloth before each one is put on. A cold poultice is worse than useless, from the chill it may cause about the diseased organ.

Fomentations are made by wringing flannels out of water, as hot 24
as can be borne. They should be applied to the skin at the part directed, and covered with waterproof, to keep the heat from being lost by evaporation. They should not be allowed to get cold, but be renewed frequently during the time their application is directed. A material called 24
spongio-piline is frequently used for fomentations. It is a thick woollen material with a waterproof coating on one side. The hot water should be applied to the woollen side.

Fomentations.

Stupes are fomentations with some external remedy, such as spirits of turpentine, sprinkled over the surface that is to be placed next the skin.

Stupes.

When an *enema* is given, of whatever kind—whether of food, medicine, or purgative mixtures, etc.—the amount ordered must be 26
strictly adhered to. When a warm enema is administered, care must be taken that it is not too hot—not more than 90°. The tube is to be oiled, and passed gently, in a backward direction, for two or three inches into the bowel, with the right hand, while the patient lies on the left side, with the knees drawn up. The injection should be very slowly and most gently administered, and its flow should be stopped at once if the patient shows any sign of distress. When the required quantity has been in-

Enemas.

jected, the tube is to be gradually and gently withdrawn, and the
27 buttocks pressed together for a few minutes. Air must not be injected, and, for this reason, the syringe should be filled before the introduction of the nozzle.

Usually enemata are given for the purpose of stimulating the lower bowel to evacuate its contents, and consist of one to two pints of warm water, or water with the addition of a mild irritant, such as soap, with perhaps 2 ounces of turpentine, or 2 ounces of castor-oil. This may be ordered to be followed by 2 or 3 ounces of castor-oil, which is intended to be retained and induce purging. Or Epsom salts or aloes may be sent in from the dispensary in the exact dose, and ordered to be injected. Another good purgative enema consists of one or two teaspoonfuls of glycerine; but this, even when diluted, causes in some patients painful straining.

26 Enemata are also given for other purposes, such as:

(1) *Sedative enemata*—of starch and opium, for diarrhœa, etc.

(2) *Astringent enemata*—of sulphate of zinc, alum, etc.

(3) *Anthelmintic enemata* (for destroying worms)—turpentine, common salt, etc.

(4) *Antipyretic enemata* (to reduce fever)—ice-cold water, etc.

(5) *Styptic enemata* (to arrest bleeding)—tannin, perchloride of iron, etc.

(6) *Nutrient enemata* (to feed the patient)—beef-tea, milk, etc.

(7) *Antiseptic enemata*—quinine, corrosive sublimate, etc.

27 When any of these are prescribed, the attendant must satisfy himself that the lower bowel is empty; and, if necessary, a simple enema may be ordered to precede the medicinal one. As a general rule, the quantity of fluid to be injected varies with the locality to be treated, and as regards whether or not it is intended to be retained. One to two pints will stimulate the rectum to evacuate its contents, while not more than 1 to 3 ounces will be permanently retained. Nutrients and sedatives must be given in very small bulk; while to reach the ileo-cæcal valve in colitis as much as 6 pints may be required. The administration of such a large quantity requires great practice to effect, great caution, and thorough patience. It is always carried out under the supervision of the medical officer. It is useless pumping in fluid which immediately runs out. Three-quarters of an hour of steady, slow pressure should be allowed.

Suppositories should be gently passed up the bowel with the forefinger of the right hand for a distance of two inches, while the patient lies on the left side, with the knees drawn up. A little sweet oil on the suppository and on the finger facilitates the operation. Care should be taken to ascertain that a suppository is retained in the bowel.

Suppositories.

Great difficulty is frequently experienced in teaching patients to *gargle* properly. An attendant may learn to do it himself, and thus teach them by gargling in their presence, and explaining how it is done. A patient should always sit fairly up in bed before being allowed to gargle.

Gargles.

When *steaming* is ordered, care is necessary to see that the 28
steam constantly strikes on the nose and mouth of the patient, and that the steam is not too hot at that point. The moisture gathering on the face should be wiped off, from time to time, and the pillow and the upper part of the body and bed-clothes protected from the moisture by water-proof sheeting. The steaming must be constantly kept up, and for the time directed. It may do more harm than good if carelessly performed.

Steaming and Inhalations.

The object of *inhalations* is to bring simple steam or medicated vapours in direct contact with the lining of the air-passages. Many more or less complicated inhalers have been devised, but a simple and efficient one may be fashioned by pouring boiling water into a jug, the neck of which is surrounded by a folded towel. The patient places his mouth and nose into the aperture and breathes in the vapour.

Hot, tepid, and cold *baths* may be ordered medicinally. The temperature ordered must be strictly maintained during the whole time the patient is in the bath. To ascertain this, a thermometer should be in constant use. Should any appearance of faintness come on while a patient is in a bath, he should be at once removed and placed in bed.

Baths.

Packing in the wet sheet is thus performed. The patient is to be 29
stripped, and the whole of his body wrapped in a sheet wrung out of water, which may be hot, tepid, or cold, according as may be ordered. He is then enveloped in a blanket, and laid on his side in bed on several thicknesses of blanket. A number of blankets are then placed over him,

The Wet-pack.

and carefully tucked in all round him and up to his chin. A patient in a wet-pack is not to be left alone on any account, but must be carefully watched during the time he is in it. When the time ordered has expired, the wet sheet is to be removed, and the patient's body rapidly sponged with tepid water and dried. He is then to be placed in a well-warmed bed and carefully covered up. Of course, the wet-pack should never be used without medical authority. Instead of a wet-pack a wet sheet laid over the patient is in many cases useful.

Cold or tepid *sponging* is sometimes ordered in cases of fever, etc. It is to be done while a patient is in bed between two blankets. The extent of the surface of the body to be sponged and the duration of the sponging are usually defined by the medical officer. Should any symptom of faintness come on, the patient should be at once dried and removed to a warm bed.

All *medicines* must be given regularly, and at the times and in the quantities ordered. It is well to shake all mixture bottles before pouring out the required dose, even if this direction is not specially given on the label. The label of directions must be read each time before the medicine is given, and the quantity ordered carefully measured into a clean glass. In giving pills, care must be taken to see that they are really swallowed by a patient. Should any patient refuse medicine, this fact should be carefully reported.

Administration of Medicines.

When a patient refuses food, much may be done by attendants by means of gentle persuasion with some, and by a firm but kind manner with others. Beyond this an attendant should never go. No apparatus for *forcible feeding* should be employed by any other than a medical officer under any pretext whatever. If a patient has to be forcibly fed, take care to have everything ready, such as a chair with pillow, oil, hot water, food, and the appliance used by the medical officer for feeding. Some medical men feed their patients while lying on a bed. In this case the chair and pillow will not be required.

Forcible Feeding.

Great care is necessary in feeding paralytics, delirious patients, and those who are unconscious or dying. The quantity given at a time should be very small, and it must be ascertained that one spoonful has been swallowed before another is placed in the mouth. No paralytic or epileptic patient should eat alone.

Of *bandaging* little can be learned from a book. In bandaging a limb, the bandage should be carried with a gradually decreasing pressure from below upwards. Any complaint or appearance of a bandage being too tight should be at once attended to, and the bandage loosened without loss of time and a report made. **Bandaging.**

As all patients have not the sense to complain about a bandage being too tight, the attendant should be able to judge for himself. If the bandage be only a little too tight, the part below the bandage will be swollen and congested, showing that the pressure is preventing the return of blood through the veins. If much too tight, the part below the bandage will be cold, of a pale colour and bloodless, showing that the pressure from the bandage is preventing the blood circulating in the arteries.

EMERGENCIES.

In all emergencies the first duty of an attendant is to *send for a medical officer* as soon as possible. 30

In any case of *faintness* the patient should at once be placed on his back, the clothing about the neck and waist should be loosened, and fresh air should be freely admitted. If he can swallow, an ounce of brandy in hot water may be given; and when there is coldness of the extremities hot blankets and bottles may be applied. When a patient *appears* to faint during a meal, it cannot be too strongly impressed upon attendants that he *may* in reality *be choking;* for the commonest form which this accident assumes is that in which the patient falls forward with pale face and loses consciousness. Whenever, therefore, a faint occurs, not only during a meal, but at any other time, feel the back of the throat with your finger, and be satisfied that it is free from obstruction. You cannot be sure that the patient may not have secreted a crust, and be choking in the effort to swallow it quickly. **Fainting.**

Epileptic fits are of two kinds: the *petit mal*, in which the patient often staggers or falls, almost as in a faint, and quickly recovers, with only momentary loss of consciousness; and the *haut mal*, or typical seizure, most commonly seen. Besides these, there is a form in which localized convulsions occur, often without loss of consciousness. **'Grand,' or Epileptic Fits.** 31

The ordinary fit consists of four stages: (1) Sudden and com-

plete loss of consciousness ; followed almost instantly by (2) the stage of *tonic* spasm, during which respiration is arrested and the muscles all over the body are rigid ; (3) the stage of *clonic* spasm, during which convulsions occur and the respiration is partially resumed, but in a jerky manner ; (4) coma and stertorous breathing, ending in gradual recovery.

If a fit occurs during a meal, the mouth should be cleared of all food during the tonic stage, for with the resumption of respiration food is apt to be drawn into the trachea and cause choking. The lividity during a fit is caused by the absence of oxygen in the blood during the time respiration is suspended. Attendants should very carefully note the exact order in which the limbs and sides of the face are involved. Often the spasm commences in one limb and passes to another after a few seconds. They should also study the mode in which each patient falls, for this indicates the order of involvement of the muscles, and most patients repeat the same method each time. These points are of great assistance to the medical officer, who is rarely present at the exact commencement of a fit.

Apoplexy.

Should *apoplexy*, or any other form of loss of consciousness by a patient occur, the clothing about the neck and chest is to be loosened, and the patient placed in bed.

Usually before the apoplectic attack there are some premonitory symptoms, such as headache, disordered speech, numbness on one side of the body, pallor, and faintness or sickness. Sometimes the attack begins with a convulsion, but generally the patient falls down and becomes unconscious. At first the coma is very profound, and the deeper it is the more likely is the apoplectic attack to be due to cerebral (brain) hæmorrhage. During the comatose stage there is flushing, or a livid condition of the face, and fulness of the veins of the neck ; slow, laboured, stertorous breathing, and puffing out of the cheeks during expiration ; throbbing of the carotid arteries ; and the pulse is slow, full, and soft. Sometimes there are symptoms of shock; the face is pale, and the pulse quick, small and feeble. *Hemiplegia* (loss of power on one side of the body) exists on the opposite side of the body to that of the brain in which the hæmorrhage has occurred.

32 Should *choking* occur, medical aid must be instantly summoned, as every moment is of the greatest value. Meanwhile, pull the

patient's head back with your left hand, and put anything hard (*e.g.*, a cork, spoon, or peg, wrapped up in a handkerchief or apron) between the teeth ; pass the forefinger of the right hand to the back of the throat and base of the tongue as far back as it will go, but a little to one side, and try to extract the mass by hooking it forward. If this fails, press down the back of the tongue as far as possible — a proceeding which will probably cause vomiting and bringing up of the food that is causing the choking. Slapping the back is usually a waste of time. Paralytics, epileptics, dying persons, and those of the insane addicted to 'bolting' their food, as also suicidal patients, who sometimes seek self-destruction by this means, require to be specially watched and guarded against choking.

Choking.

Any considerable *loss of blood* is at once to be reported, the colour of the blood and the quantity lost being carefully noted. In 33 the case of bleeding from wounds and incisions, the flow of blood may be controlled somewhat until medical aid arrives, by pressure on the spot with the finger or a pad of linen. If the bleeding is very copious, and is from the upper or lower extremity, tie a handkerchief round the limb above the bleeding-spot, put a piece of stick under it, and twist tightly. This will stop the bleeding until the arrival of the medical officer. If the hæmorrhage is from a varicose vein in the leg, all that is necessary to do is to lay the patient on the ground and elevate the leg, when the bleeding will at once cease. As a rule, the part from which the blood comes should be raised as much as possible above the rest of the body. Constrictions (waistbands, collars, etc.) should be loosened or removed, as they impede the free return of venous blood to the heart. In bleeding from the nose, the head should be kept erect and the hands raised above it, or the patient is made to sit up ; if the hæmorrhage persists, the patient will then faint earlier, and the hæmorrhage will then cease before the loss of blood has reached a fatal amount. Internal hæmorrhage, except when an aneurism bursts, is probably not so rapid as external hæmorrhage. If it is from an external wound, the patient must be stripped and put to bed ; pressure on the site of the hæmorrhage should be at once applied. The difference between arterial, venous, and capillary hæmorrhage has already been described in

Hæmorrhage or Bleeding.

Chapter I., p. 26. In all cases of hæmorrhage, *rest* is of the first importance.

Fractures often occur in general paralytic or old demented patients, whose bones are very brittle and liable to fracture. If any such patient should fall, no attempt must be made to raise him, until it is ascertained that his legs are not broken. The fracture may occur in the thigh, leg, or about the foot and ankle, and is distinguished in the following manner: If in the thigh, one leg will be shorter than the other, and the foot will be turned out; if in the leg, there will often be an alteration in the shape and position of the limb; if about the foot and ankle, there will usually be alteration in the outline of the bones. In nearly all cases there will be pain on movement. It is imperatively necessary in these cases that the patient should not be moved until the medical officer arrives. The reason for this is that unskilful handling may cause serious mischief by converting a simple fracture, where there is no wound in the skin, into a compound fracture, in which there is a flesh-wound, communicating with the broken ends of the bone (see Chapter I., p. 51), and so air is admitted to the fracture. The latter is a much more dangerous condition to the patient. If it is necessary to move him out of a position for fear of his being injured, lift him by the shoulders and pull him backwards out of the way.

Fractures.

A fractured arm is not so dangerous as a fractured leg, and should be left alone until medical aid arrives, unless there is reason to fear that it may become aggravated, when it may be placed in a sling, by putting the forearm in a towel or handkerchief, and tying the ends of the towel together around the neck.

Fractured ribs will be distinguished by the way in which the patient breathes. This will be shallow and jerky, and there will be catching pain at the same time. In this case the patient is to be left alone until the medical officer arrives.

A nurse who has not received special instruction in midwifery should not attempt to interfere with a patient *in labour*, but should place her in bed, and at once report the case. Attendants on the insane must, however, carefully watch patients who are pregnant, as the insane in this condition frequently give no warning of the onset of labour, by expressing their sufferings, or even by showing signs of discomfort.

Labour.

One of the most common modes of *suicide* attempted by insane patients is *hanging* or strangulation. In some of these cases the life of the patient may be saved by prompt and timely action on the part of an attendant. 36

Attempted Suicide.

The moment such a case is discovered, the patient should be raised, and the ligature should be at once cut and removed from the neck. If the patient is unconscious, means are to be taken to restore him by the application of cold water, as in cases of fainting, and, if the breathing has ceased or is feeble, *artificial respiration* is to be instantly commenced, and continued until medical aid arrives. 37

Hanging or Strangulation: what to do.

Artificial respiration is performed thus: The patient is laid on his back, with a pillow under his shoulders, and the operator, kneeling behind his head, grasps the patient's forearms just above the elbows, draws them gradually upwards, till they meet above the head, and keeps them in that position for two seconds; then, bringing the arms down again, he presses them gently, but firmly, against the sides of the chest for two seconds more. These acts are to be steadily repeated alternately, fifteen times in a minute, and the process of artificial respiration by this means continued, until medical aid arrives. When natural efforts at breathing are noticed, one should be careful so to time the movements as to *assist* them, *e.g.*, by drawing up the arms during *inspiration*, etc.

Artificial Respiration: how it is accomplished.

In cases of drowning, the two points to be aimed at are restoration of breathing, and, *after breathing is restored*, promotion of warmth and circulation. First cleanse the mouth of weeds or other obstruction, then place the patient on the ground for a minute or two face downwards, with one arm under the forehead. The reason for this is that fluid more easily escapes by the mouth, and the tongue falls forwards, so that there is free access of air to the windpipe. The next step is to turn the patient on his back, pull the tongue forward, and perform artificial respiration until natural breathing is restored.

Drowning.

As soon as natural breathing has been restored, wrap the patient in hot blankets and energetically rub the limbs *upwards*. Warmth may also be promoted by the application of hot flannels, bottles

of hot water, or heated bricks, wrapped in blankets, to the pit of the stomach, the armpits, between the thighs and soles of the feet.

Artificial breathing must be kept up for at least two hours, or until the arrival of medical assistance.

Suffocation by Gases.

In cases of *suffocation by gases*, remove the patient into the fresh air, loosen the clothing, and employ artificial respiration.

Sunstroke is not very common in this country, but should it occur, raise the head, apply ice to it, or pour a plentiful supply of cold water on it. Remove tight clothing from the neck and chest. No stimulants to be given.

Sunstroke.

If the clothing of a patient *catches fire* (an accident more common in the case of female than of male patients), make her lie down at once horizontally on the floor, envelop her in a blanket, or carpet, or hearthrug, or in any large pliable covering which may be at hand ; then roll her from side to side until the fire is extinguished. Quickly drench all the clothing with water until it is saturated.

38 **Fire.**

If a nurse is rendering assistance, she must be careful to prevent her own clothing from catching fire.

Remove the clothing, cutting it where it sticks to the skin. Pour over it olive-oil or castor-oil. *Scalds* are often produced by the attendant not being sufficiently careful in bathing patients.

Burns and Scalds.

To prevent accidents of this kind, the chief rules are to turn on the cold water first, never to allow the patient to have the key of the bath, and to use the thermometer before any patient is allowed to enter the bath. The water should be well stirred before taking its temperature.

As *patients* may sometimes require to be *carried* from the ward to bed, a few simple directions will be useful. Let two attendants stand, one on each side of the patient. Each attendant should put his arm under the thigh, and grasp the hand of the other. Each attendant puts his other arm behind the patient's shoulder, and grasps the arm of the opposite attendant. The patient puts his arms round the necks of the attendants. Of course, if a carrying chair is available, it would be used in preference to the above.

39 **Directions for carrying Helpless Patients.**

In cases where the patient is helpless or unconscious, a stretcher should be used. The *rules for* using the *stretcher* are :

(1) To put it at the head of the patient in the same line as the body.

(2) Two attendants lock hands underneath shoulders and hips as previously described; raise the patient, carry him backward, and lower him on to the stretcher.

(3) The attendants then take their places, one at the head, one at the foot of the stretcher, lift and carry the patient off, feet foremost. **Stretcher-carrying.**

(4) To carry the stretcher in hands or suspended by straps over the attendants' shoulders.

(5) To march in broken step—not in time.

(6) In ascending, patient's head to be in front; in descending, behind.

Poisoning.—Accidents through poisoning should never occur in asylums, as rules to prevent them always exist; but as these are sometimes neglected, a few hints as to how to act are necessary. Nearly all symptoms of poisoning may be simulated by various diseases; the exact diagnosis is often difficult, and no attendant can hope to learn all the symptoms and treatment of the various poisons. But in practice there are very few substances of a 40 dangerous nature to which asylum patients may have access, and these are practically confined to the following groups :

(1) Those used for ward cleaning, such as soft-soap, turpentine, washing soda; or for disinfecting, as chloride of lime and crude carbolic acid. (2) Surgical or medicinal agents, as carbolic or sublimate lotion, iodoform, mercurial ointments, liniments, lotions, or medicines. (3) Articles left carelessly about in an attendant's room, and which should never have been brought into the ward, such as marking-ink, non-safety matches, salts of lemon, or rat-poison.

When a suspicious case occurs, the attendant may have the patient's admission of having swallowed something, which may be named correctly or not, or the evidence of other patients, or he may notice special signs, such as the whitening of the skin caused by carbolic acid, stains or paint on the hands, clothing, etc., or a special odour, as that of carbolic acid, iodoform, chlorine, prussic acid, chloroform or ammonia.

41 Poisons may be roughly divided into two classes: (1) *Irritants* and *corrosives*, which cause vomiting or purging, or both, with pains in the throat or abdomen, and subsequent collapse, feeble pulse, cold extremities, and subnormal temperature; (2) *Depressants* and *narcotics*, which produce stupor, unconsciousness, or coma, with stertorous breathing and gradual lowering of the temperature and failure of pulse. Among irritants we may include soft-soap, washing soda (not dangerous), turpentine, sublimate lotion, mercury ointments, red lotion, marking-ink, blue-stone, ammonia, camphor, nitrate of silver in lotions, or solid in sticks of caustic; oil of vitriol and caustic potash are examples of corrosives. Depressants include laudanum, and other compounds of opium, chloral hydrate, chloroform, liniments containing aconite or belladonna, and a medicine bottle may contain altogether a dangerous quantity of some of these, though the individual doses in it may be harmless.

The general preliminary treatment in all cases of suspected poison is to *empty the stomach*, either by means of emetics or by washing it out. The attendants' duties will therefore be: (1) At once summon the medical officer. (2) Prepare the stomach-pump, with basins, towels, and hot and cold water in abundance. (3) Prepare hot blankets and hot bottles, and have brandy ready at hand. (4) Collect evidence of any likely source of the poison, not forgetting stray bottles in attendants' rooms, in order that the time of the medical officer may not be wasted when he comes. Pending the arrival of the medical officer, and except in the case of corrosive poisoning, attempts may be made to induce the patient to vomit, either by tickling the back of his throat with the finger or a feather, or by administering warm salt water (two tablespoonfuls of table-salt to half a pint of warm water).

It is not advisable to resort to artificial respiration unless the patient be actually dying; for apparent irritant poisoning may be really such a disease as rupture of intestine, especially from an ulcer, strangulation of a hernia, stoppage of the bowels, or peritonitis; while apparent narcotic poisoning may be really apoplexy, and in any of these cases artificial respiration may do harm.

BED-SORES.

Nothing is a surer test that careful attention is given by the attendants to the sick-nursing in an asylum than the absence of bed-sores in those patients liable to them, and the successful management of such sores when, in spite of every precaution, they do unfortunately occur. An attendant should consider the occurrence of a bed-sore discreditable, for it often denotes inattention and want of care.

The patients most liable to bed-sores are those known in asylums as general paralytics, those suffering from other forms of paralysis, and those who, confined to bed for a lengthened period, have become extremely feeble and emaciated. Such cases require very special attention to the state of their skin, and to the bedding on which they lie. The under sheet should be kept smooth, free 42
from crumbs, and as dry and clean as possible, and the position in which the patient lies should be frequently altered. The back should be examined daily, washed and dried carefully, moistened with spirit or brandy, and have plenty of dusting-powder applied ; if possible, the patient should be placed on a water-bed.

When bed-sores occur, they should be dressed with lint soaked in carbolic acid lotion (1 in 40 to 1 in 60) or boracic lotion (boracic acid 10 grains to 1 ounce of water), or sulphate of zinc lotion (4 grains to 1 ounce of water), the lint being covered with gutta-percha tissue ; or with lint on which boracic or zinc ointment is spread. Cotton-wool should be applied round the edges of the bed-sore and fixed by adhesive plaister, so that the sore is kept from coming in contact with the bed. An extra amount of care as to cleanliness and frequent change of dressings is required, for the latter, owing to their situation, very soon become foul.

LAYING OUT THE DEAD.

When a patient dies, the eyelids are to be closed by gentle pressure with the fingers, and a bandage applied under the lower jaw, to support it. The limbs are to be straightened out, the arms placed by the sides, and the lower extremities kept in position by a bandage round the ankles, and by one connecting the great toes.

The clothing is then to be removed, the body thoroughly washed and re-clothed in a clean bed-gown. The corpse is then to be completely wrapped in a clean sheet.

QUESTIONS ON CHAPTER III.

1. Why is ventilation necessary?
2. How is ventilation produced?
3. How can the temperature of a sick-room be regulated?
4. Why is it necessary to cleanse a sick-room?
5. What are the chief points to attend to in cleansing?
6. What are the chief antiseptics, and for what purpose are they used?
7. How would you clean surgical instruments?
8. What are the chief kinds of sick-diet, and why are they given?
9. What are the dangers in giving unsuitable food to sick patients?
10. How is a draw-sheet to be arranged, and how is it used?
11. How would you cleanse the body of a patient lying in bed?
12. How are lice in the hair removed?
13. What are the methods of lessening the chance of a patient being attacked by phthisis?
14. What symptoms would make you suspect phthisis in a patient?
15. What are charts, and what are their uses?
16. What are the points on which you should be able to give information about a sick patient to the medical officer?
17. What is to be noted about the bowels, the urine?
18. What is to be noted about a cough and about expectoration?
19. Name any six symptoms, and state what they may indicate.
20. What are the chief contagious diseases, and what are the parts of the body most severely affected in each?
21. How would you proceed to get rid of the secretions and discharges of infected patients?
22. How would you take the temperature of a patient?
23. What is pyrexia? what courses may it follow?
24. What applications are made outwardly for medical or surgical reasons?
25. How would you proceed to make a poultice?
26. What are the chief kinds of enemata? and how would you proceed to give them?

27. What precautions are necessary in giving enemata?
28. How is 'steaming' to be done?
29. How would you pack a patient in a wet sheet?
30. How would you treat a patient who has fainted?
31. What are the stages of an epileptic fit?
32. What is to be done for a patient who is choking?
33. How would you stop hæmorrhage from the arm or leg? how if it occurs from the nose?
34. How would you distinguish fractures in various bones?
35. Why is it necessary for you not to move a patient who has sustained a fracture?
36. What are the most common methods of attempting suicide?
37. When would you use artificial respiration? and how would you proceed to perform it?
38. If a patient's clothes caught fire, what would you do?
39. How are helpless patients best carried when a stretcher or carrying-chair is not available?
40. What are the poisons likely to be used?
41. What classes of poisons are there? and what ready means of treatment can be adopted in each case?
42. How can bed-sores be best prevented?

CHAPTER IV.

THE CARE OF THE INSANE.

THE duties of an attendant on the insane are of a very responsible kind, and he is concerned in looking after both the bodily and the mental welfare of the patients under his charge.

MANAGEMENT OF THE BODILY CONDITION.

Among the insane, just as among the sane, the mental condition is very largely affected by the state of the body, by its well-being and comfort, or by its derangement and discomfort; and everything that tends to promote the bodily welfare has a direct and beneficial influence in promoting the mental health. Hence in all cases, and more especially in those in which the mental condition is such that

1

Importance of attending to the bodily Health.

the patient cannot take proper care of himself, everything possible should be done by the attendant or nurse, under the direction of the doctor, to preserve the bodily health—to improve it, if necessary, and to keep it up to a proper standard. In studying the bodily functions (first chapter of the Handbook), we saw the necessity of good ventilation, cleanliness, warmth, sufficient clothing, good and sufficient food, regular open-air exercise, undisturbed sleep, etc., for the proper discharge of these functions; and it is necessary to attend to all these matters in the interests of our patients. The attendant should keep the day-rooms and the
2 sleeping-rooms scrupulously clean, tidy, well ventilated, and sufficiently warm; he should have the bed-clothing thoroughly aired at proper times, and kept clean and dry; and he should see that the patient wears clothing suitable and sufficient for the season of the year. Care should be taken that wet or damp clothes are dried without delay, that fresh clothing is suitable, aired and warmed before being used, and that boots are dry and in proper repair. Cleanliness, both of person and of clothing, is absolutely essential. The attendant should be very particular in seeing that the instructions of the doctor as to the amount of exercise or work to be done by the patient, the taking of medicines, and any other details of treatment, are accurately and punctually carried out. Sufficient time should be allowed for the taking of food; there should be no undue haste in removing the dishes; and the attendant should see that each patient takes his food in sufficient quantity and in a proper way, duly masticating it. Note should be made of any difficulty in mastication from defective teeth or from any other cause, and also of any evidence of indigestion, such as pain after taking food or flatulence. Dislike of special kinds of food, or an undue craving for stimulants, should be observed. Any tendency to eat garbage or swallow indigestible substances should be promptly reported. The attention to the action of the bowels should be systematic, and all cases in which a tendency to constipation is present should be induced to go to the closet at fixed times, and the result observed, and, if necessary, reported. Care should be taken that the water-closets are not unnecessarily occupied by some patients, causing delay and inattention in the case of other patients. It is particularly important to note the action of the bowels in melancholics and in stuporous and demented cases,

as in them the mental disorder is frequently intensified by neglect of the bodily condition; and, similarly, in cases of epilepsy and general paralysis, derangement of the bowels is often the cause of an increase in the number and severity of the fits, or brings on the 'congestive' attacks. The other bodily functions should be duly observed in a similar way; for example, in paralytic cases it is necessary to see that the bladder is properly emptied from time to time. During the night all noise or other source of disturbance should, as far as possible, be prevented in the sleeping-rooms.

All the Insane are Patients.

The various conditions which bear upon the bodily health have been already fully indicated in previous pages of the Handbook, and it is therefore unnecessary to enlarge further upon them here. In the third section of the Handbook instructions are given for special nursing in the cases of more pronounced bodily illness. A good attendant should consider that *all* the persons under his charge, even when they are not in the infirmary or hospital ward of the asylum, are *patients* in the truest sense of the term, and require special care and management; and many of the general instructions given in the third section are directly applicable to the treatment of all insane persons. For instance, in the ordinary wards attention should be given to the ventilation and heating of the rooms on the same lines as in the sick ward. When the dormitories are vacated in the morning, 3 the windows should be opened, if the weather allows, or the other arrangements for ventilating the room attended to. In the afternoon the windows should be closed, and the fires or heating apparatus looked to sufficiently early to have the rooms fairly warm before the patients enter them in the evening. Similarly in the day-rooms, it is often advisable to have the fires lit early, so that the rooms may not be cold and chilling when the patients first come to them in the morning. Here, also, the action of the ventilators must be noticed and regulated; and the windows should be opened at suitable times, and especially when the rooms are empty, as, for instance, while the patients are in the dining-hall. A suitable temperature for the ordinary rooms is about 55 degrees. Much may be done by the nurse towards promoting the cheerful aspect of the sitting-rooms by general tidiness, neatness, attention to the window-blinds, and by little decorations, such as flowers on the tables. It should also be remembered that the wardrobe

presses, the medicine-cupboards, etc., should be kept in an orderly and tidy way, and fit for inspection at any moment. In the ordinary wards, just as in the sick-room, efforts should be made to secure tranquillity, due quietude, and cheerfulness; and the patients should as far as possible be guarded from conditions which might injure their bodily health, such as exposure to cold or to draughts, or eating improper things.

4 It is the attendants' duty to take note of any symptoms of bodily derangement or failing health, such as cough, breathlessness, loss of appetite, irregularity of the bowels, wasting of body, increasing feebleness in walking, etc., and to report them without delay to the medical officer, so that any treatment which is called for may be begun

Report Changes in the Bodily Symptoms.

5 at once. It is likewise a good rule to examine the patient's person carefully every time he is being dressed or undressed or bathed, and to observe whether there are any abnormal appearances, such as bruises, marks of injury, redness, swelling, eruptions on the skin, commencing bed-sores, etc. When found, these should be reported to the doctor at once. An examination should also be made as soon as practicable after any fall, struggle, or collision with other patients; and any indication of injury should be immediately reported. Patients of wet and dirty habits should be frequently attended to, and kept as dry and clean as possible; and any medical directions given to prevent scalding of the skin should be carefully carried out. In some cases, especially in the advanced stage of general paralysis and in the stupor which follows a succession of epileptic fits, there is risk of choking from paralysis of the power of swallowing; to these all food should be given in a soft form, such as minced meat, milk, custards, and the soft part of bread; while hard food, such as crusts, should be avoided. It is sometimes necessary to be vigilant to guard against the patients getting hold of such hard food—from the plates of other patients, for example—and injuring themselves with it.

MANAGEMENT OF THE MENTAL CONDITION.

The arrangements of an asylum, its discipline and daily routine, are intended : (1) to *promote recovery* when that is possible ; (2) to secure *due observation and control* of the patients ; (3) to *ensure as much comfort as possible;* that is, in all cases, even when recovery does not take place, to make the surroundings of the patients as favourable, healthy, and comfortable for them as is possible, consistent with their safety and proper custody. It is, therefore, the duty of the attendant to make himself familiar with the arrangements and regulations of the institution in which he is serving, and to carry them out in a loyal and conscientious manner. In most asylums the attendant, on beginning duty, receives a copy of the rules applicable to his work; he should carefully study these rules and act up to them.

Aims of Asylum Care.

Study and obey the Asylum Rules.

For example, in one or more of the wards the patients may, by direction of the medical officer, receive a very considerable amount of liberty, because it adds to their contentment ; certain doors may be left open; and the attendants are expected to supervise the patients without the aid of locked doors; while in other wards, where the cases are not so trustworthy, the doors are kept constantly locked, to prevent the patients passing away from direct observation. In these latter wards the door should never, by any negligence of the attendant, be left unsecured at any time. And equally in the former wards, the doors should be kept open at the stated times ; and the attendant, unless instructed by one of the superior officers, commits a serious breach of rule if he locks a door which is meant to be open, simply to save himself some extra bother in looking after a troublesome case.

In the same way, all the other arrangements of the asylum, which are intended to secure the safety or promote the comfort of the patients, should be intelligently carried out ; and the instructions for the routine work, such as the awakening of patients in the morning, the serving of meals, the bathing of patients, and their supervision when at work or taking walking exercise, should be carefully followed. The windows are usually 'checked,' so that they cannot open wide

Importance of the Routine Work.

enough to let a person pass through; and the shutters in the sleeping rooms can, when necessary, be securely fastened.

In dealing with the patients themselves, we should endeavour to grasp the mental peculiarities of each case. Thus, on taking charge for the first time of any patient, the attendant or nurse should at once try to obtain his confidence by kindness and sympathy of manner, by watching over his comfort, and by explaining the misapprehensions which so commonly exist in the minds of the insane; and in this way he may learn the ideas and feelings of the patient, the character of his delusions, and the probable nature of his conduct, and thus be better able to guide and control him in a suitable manner. It is particularly important to do this in the case of newly-admitted patients, and it may be advisable to keep them under constant observation until their mental condition is properly known; but the same plan should be followed with all cases, whether newly admitted or not, which are received in charge for the first time by the attendant. When the patients have already been for some time under care, information about them may also be obtained from those who have previously had the charge of them.

8 **Treatment of the Different Mental States.**

In the treatment of individual cases, we try to lead the mind into a more healthy groove of action, to repress morbid acts or habits, and to train the patient to more healthy and correct habits. We endeavour to cheer the depressed by kindly sympathetic conversation and conduct towards them, and to divert their thoughts from their distressing fancies by getting them to take an interest in the things around them, and by inducing them to engage in active work and amusement, when their bodily health permits it. The noisy, turbulent cases should, as far as possible, be soothed by persuasion and judicious management, and kept from annoying their fellow-patients. When the excitement is severe and long-continued, we try to provide a healthy outlet for it in active muscular work or active open-air exercise. With the demented patients, the attendant has more or less to think for them in everything. He has to see to their being dressed and undressed; to their getting their food properly and going out for exercise; to their being protected from exposure to cold or other danger; and to all the other routine of their daily life. Those patients who are impulsive and wayward

in their conduct should be encouraged to habits of better self-control.

With regard to delusions, these should never be made a subject of thoughtless ridicule or ill-timed jesting. Neither argument, nor ridicule, nor flat contradiction, will convince a patient of his error; and he may be needlessly annoyed and hurt thereby. It is much better, then, just to ignore the delusions as far as possible. The attendant should avoid bringing them up in conversation, or doing anything which leads the patient to think about or express them; and he should try to get the patient to act as if the delusion had no existence. Insane persons do not by any means always follow out their delusions to their logical conclusion. A patient may think he is a king or the owner of the whole place, but still sees nothing incongruous in helping, like any ordinary person, in the work of the house, or in taking his orders from the asylum officers; and it is wise to encourage him in this habit, and thus quietly to ignore his delusion. If the patient speaks about his delusion of his own accord, we should just say firmly, but temperately, that we think he is wrong there, and then try to lead him away from the subject. Nicknames should never on any account be given to patients from their delusions or other peculiarities; for doing so is just one way of keeping the idea constantly present to their mind.

How to deal with Delusions. 9

All those acts and habits which spring from the diseased mental condition, and which are therefore morbid and unnatural, should be repressed as far as possible, and correct habits inculcated in their place. Thus, destructiveness and all other mischievous propensities should be checked. Slovenliness in dress and disorderliness in eating should be corrected, and the patients encouraged to be neat, tidy and orderly. When food is refused, much may be done by tact in persuading the patient to take it. Sometimes patients, while refusing all food offered directly to them, will yet take readily anything they can steal or pick up unobserved; and advantage may be taken of this peculiarity in getting them to take food. When forcible feeding is required, it should of course be done only under the immediate direction of the doctor. The eating of leaves, cloth, and other improper things, should be prevented; for the patient may thereby injure himself seriously. Some general paralytics are especially

Correct Insane Habits. 10

apt to eat ravenously, stealing the food from the plates of other patients, and cramming it in great pieces into their mouths, at the risk of choking themselves ; this propensity should be guarded against. Dressing fantastically in obedience to a delusion should not be permitted. When wet and dirty habits are due to the mental condition, not to bodily paralysis, much may be done by assiduous attention from the attendant in training the patient to attend to the calls of nature at certain regular times, and in getting him into more correct habits.

Bad sexual practices are unfortunately common among the insane, and ought to be prevented as far as possible. The possibility of any patient indulging in bad habits should be borne in mind, and a constant watch for signs should be kept up. The detection of any such habit should be reported ; and when, as sometimes happens, the patient himself is desirous of checking it, he should be encouraged in his effort by fitting advice and by help in finding occupation and amusement for him.

This training to proper healthy habits not only promotes the comfort of the patient, but has a very direct effect in improving the mental state. Also the attendant's exertions repay themselves well in the end ; for the time and trouble bestowed on the patient at first will save still more time and still more trouble with him afterwards, as well as prevent the discredit attached to his being found in an unsatisfactory state.

Promote Good Habits.

The daily routine of the asylum is meant to help in carrying out these various indications for the treatment of the insane. The regular hours for rising, taking food, work, exercise, amusement, and retiring to bed, are beneficial not only to the bodily health, but also to the mental state, in making the patient lead a regular life and educating him in good habits. Occupation is a most important means in the treatment of our patients. It is not the amount and value of the work done that is here considered ; it is, that suitable occupation, however simple in itself, by exercising alike the bodily and the mental powers, has a most salutary effect on both the body and the mind. It diverts the patient from his morbid fancies, and leads his thoughts into a healthy channel. Hence, whenever the bodily strength allows of it, we should try to get the patient to occupy his time usefully and engage in some work that is suitable and congenial to him. Such

Importance of Regular Occupation.

11

occupation is found in housework, in the garden or workshops, on the farm, in needlework, in the laundry, in drawing, writing, or any other work for which the patient is able. It is not enough for the attendant to take the patient out with the working-party, and then let him lounge about idly ; he ought rather to make diligent efforts to get every patient to engage in some steady work, however simple that may be. The willing must not be overtasked ; and the idle are to be induced to work.

Suitable amusements, such as dancing and games, are of value in introducing variety and interest into the life of the patients ; and as many of the patients as possible should be encouraged to join in them. The associated entertainments—that is, those attended by a large number of patients of both sexes, such as concerts—are of course arranged by the higher members of the staff. But even in the daily life in the wards, the attendant may do much to interest and benefit the patients, by inducing them to engage in appropriate pastimes, such as reading, or music, or singing, or games of cards, etc. Listless idleness is very hurtful to the patients ; hence the great importance attached to occupation either in active work or in amusements.

Amusements.

The amount of liberty allowed to each patient is, of course, regulated by the instructions of the doctor. Escapes should as far 12
as possible be prevented by watchfulness on the part of the attendants. Certain patients show themselves more prone to escape than others ; and they of course require to be specially looked after. General paralytics, in the early restless stage of their disease, often make numerous attempts to escape in a foolish, aimless way. When an attendant takes a number of patients out for work or walking, he should know exactly how many are with him, and should on his return count them again, to see that all have come back with him. It is a good practice also to go over the patients when they are at table and at bed-time, and to see from the unoccupied chairs and beds if any are missing.

Liberty ; guard against Escape.

The risks of suicide and homicide must be guarded against. 13
Several of the routine regulations in asylums are intended to lessen the danger under this head. Thus, such articles as scissors, razors, knives, etc., which may be used for suicidal purposes, should be very carefully looked after.

Precautions against Suicide.

It is necessary to have them locked up when not in use ; and they should be counted when given out for use, and again when taken back, so as to ensure that none are left out. Great caution should be shown in allowing any individual patient to have such a thing as a pocket-knife ; for while he himself may not use it for any wrong purpose, he may be facile and may allow a dangerous patient to get it from him. Broken glass should be carefully gathered together and put safely away. In certain rooms it may be necessary to cover the fires by locked guards ; and it is necessary to restrict the use of matches by patients. All medicines should be kept in a place of safety. But the ways of committing suicide are so very varied that general regulations, such as those noted above, are not sufficient by themselves. Thus, suicide has been attempted by swallowing pins, or stones, or broken glass, or other things picked up while the patient is walking ; by tearing the clothing and using the strips for strangulation or choking ; by using the braces or the tapes from petticoats or pillow-covers in the same manner ; by means of the steel taken from a pair of stays ; by breaking articles of glass or crockery and using the sharp-edged fragments for cutting ; and in many other ways. Therefore, when the suicidal
14 propensity is known or suspected in any case, the doctor usually gives instructions for the patient to be placed under special observation—that is, to be kept under the direct and constant supervision of one or other of the attendants. Only in this way can we make sure that all the patient's actions will be observed, and the suicidal tendency efficiently counteracted. When the order for special observation is given, the attendant should carry it out faithfully. There should be no negligence ; no allowing the patient to wander away from the room or get out of sight under any excuse for even a very short time ; and no relaxing of the watchfulness without direct permission from the doctor ; for there is no knowing when or how a suicidal patient will attempt to carry out his intention. In passing him from the charge of one to another, the first attendant should, before relinquishing duty, see that the second attendant has duly taken him under his care. It may be necessary to search the patient's pockets and clothing frequently, and to examine him carefully when he is put to bed, in order to see that he has not succeeded in secreting anything that may be used hurtfully. Melancholic patients are often at their worst in the early morning, just after

waking and before food has been taken ; while after breakfast, and as the day wears on, they get less wretched, and the suicidal desire is less marked. It is necessary, then, to see that the supervision is kept up carefully in the early morning, just as at other times ; and it is often advisable to give the patient some food, such as a cup of milk or warm coffee, immediately on his waking.

Homicidal assaults may best be guarded against during the day by having the patient suitably occupied ; by judicious supervision ; and by having a sufficient number of attendants to be able to control the patient thoroughly if required ; while at night the patient may be made to sleep in a room by himself. When a dangerous patient has a special dislike to any attendant or patient in the same ward, it should be reported to the doctor, who will separate them by removing one or other to another ward. The irritability after epileptic fits is often best treated by persuading the patient to lie down in bed and rest quietly, away from his fellow-patients.

Precautions against Homicide. 15

Struggles with patients should always be avoided if possible. This is, for reasons already indicated, particularly important in the case of epileptics and general paralytics. When it is necessary to use force, the attendant should not, unless there is no help for it, attempt single-handed to struggle with the patient. It is far better to summon assistance and get several attendants together, when the patient, seeing that resistance is useless, will often submit quietly ; or, if a struggle is still necessary, the patient can now be mastered thoroughly and with sufficient ease, so that the risk of his receiving any injury during the struggle is lessened as much as possible. Inexperienced attendants often think it a weak thing to get assistance, and pride themselves on managing a troublesome patient without aid from others. This is a grave mistake. It leads to personal struggles with patients, which ought never to occur ; and these struggles are often dangerous to both parties, and are always injurious by the bad feeling they create. In certain circumstances, indeed, it behoves the attendant simply to leave the patient and get out of his way ; and there is not only no cowardice, but there is real wisdom, in such a course, if the patient, while morbidly irritable and quarrelsome, can be safely left

16

Avoid Struggles.

Never use Force Single-handed.

alone. Struggles with patients ought to be immediately reported to the doctor.

Other exigencies in particular cases call for appropriate management. For instance, with new patients, it is, as already mentioned, well to keep them under particular observation for a time, until their propensities can be known, and a trustworthy idea formed regarding their mental state. In the insanity of old age there is often great restlessness along with great bodily frailty. This increases the risk of accidental injury; and sometimes the restlessness is so incessant as in itself to exhaust the patient's strength. These dangers must be guarded against, and the patient got to rest as much as possible. Epileptics should be prevented from engaging in work or getting into situations (such as going too near an unguarded fire or being left alone in the bath) which would be dangerous if a fit were to occur. For the same reason they should never be left alone when taking food, but should always be under observation. Treatment which benefits the fits has usually a correspondingly good effect on the mental state; and any medical directions given with this view should be carefully carried out. When paralysis is present, it is necessary to guard the patient more carefully from risk of injury, as from accidental falls; the bodily health has to be specially looked after; and the danger of choking, of soreness from the wet habits, etc., has to be kept in mind.

17 **Other Exigencies.**

As with the bodily, so with the mental state; the attendant should endeavour to notice any changes or new symptoms, such as greater restlessness, greater dulness, any delusions expressed, attempts to escape, or other peculiarities of conduct, etc., and should report them to the doctor at his next visit.

18 **Report Changes in the Mental State.**

In their personal intercourse with the patients, the attendants should remember that example is better than precept. They should themselves, therefore, be examples of neatness, punctuality, and orderly conduct, and should always bear themselves with courtesy and respect towards both their fellow-attendants and the patients. Few persons can exercise control over others, especially if they are weak, without tending to abuse it; and the position of authority in which attendants are placed is specially apt to be abused by

19 **Attendants should be Exemplary and Tactful in Conduct.**

coarse and unfeeling persons. This must be guarded against, and attendants should bear in mind that the power over their unfortunate fellow-creatures entrusted to them is to be exercised always justly and considerately; never for the purpose of gratifying any personal wish for retaliation, or the mere vainglorious desire of lording it over others, but always with a single eye to the welfare of the patient. They should remember that the insane are not fully responsible for their actions, and should therefore not resent rude language or rough conduct from them, but show constant self-control and kindliness, as well as firmness, towards them. It is most difficult to distinguish the annoying speech and conduct of many insane patients from the bad conduct of sane people, which would deserve punishment. For such insane conduct attendants must never, on any account, resort to punishment. They should report it fully to the doctor, and he will adopt the proper means for checking it in a medical way, which will have far more effect than the summary treatment of an attendant; just as society is far better governed by a magistrate dealing with offenders, than by each man taking the law into his own hands. Attendants should not make a promise to a patient, unless it is to be fulfilled. They should try to win the confidence of the patients by sympathy, kindness, and due consideration for their feelings. They should not hold themselves aloof from their charges, or be content with supervising them; but should join heartily in their occupations and amusements, and work both with and for the patients. Much may be done by personal influence; and a patient will often be docile and quiet with one attendant, who guides him in the right way, when under another attendant he would be very troublesome. When it is necessary to refuse requests made by patients, or to enforce control over them, attendants should constantly refer to their 'Rules' as their reason for doing so, rather than their own will; for thus there is much less feeling of irritation roused in the patient. Above all things, remember that 'a soft answer turneth away wrath.' No maxim is of more value in dealing with the insane, or will save an attendant more trouble in the end. These duties call for the exercise of much tact—that knack of knowing how best to manage a patient, which cannot be taught on paper, but which can be acquired when there is forgetfulness of self and an earnest desire to do the best for the patient.

ATTENDANCE ON THE INSANE IN PRIVATE HOUSES.

The attendance on those suffering from mental disease in their own homes or in lodgings is now one of the recognised branches of nursing. Few patients in the higher classes are sent to asylums without home treatment having been tried in the earlier stages of the disease. A good attendant is of incalculable value in the home treatment of a case of insanity. Through such services, attacks may be cut short, infinite anxiety and risks saved to patients and relatives, accidents avoided, suicides averted, and valuable lives restored to reason.

Home Treatment.

The chief differences between treating a case at home and in an institution are the following :

1. Less help can be got either from fellow-attendants or doctors, and therefore more forethought and observation of the patient's symptoms, more resource and self-command, are needed. 2. The risks are far greater from stairs, open windows, razors, knives, etc. ; and therefore the first thing an attendant in charge of a patient at home must do is carefully to obviate such risks, by taking possession of keys, removing bolts from inside of water-closets, checking windows, arranging for rooms on the ground-floor, and putting away knives and razors. 3. The difficulties of getting the patient to take food, medicines, and exercise are much greater ; therefore, if these things cannot be done by tact and persuasion, the patient will probably have to do with less of them than he needs. A patient will usually be found to be much harder to control in his own house than anywhere else, and more apt to resist interference with his liberty. 4. The relatives of the patients will often be suspicious, or lose their heads from fear, or be fussy, or positively obstructive ; therefore an attendant must be patient but firm with the relatives and friends ; and, above all things, must get the doctor in attendance to give explicit orders for the course adopted, and to take the responsibility for the instructions required. It is in many cases better that the doctor should suggest that the patient should be left with his attendant, without relatives coming in to interfere too much. 5. The labour is more exhausting, often involving night and day work. An attendant should tell before his own strength and nerve give way, and should ask for

Differences between Home and Institution Treatment.

assistance. 6. A good attendant can help the doctor in attendance greatly, by keeping a daily-written note of (*a*) the food taken, (*b*) the amount of sleep, (*c*) the length of time in the open air, (*d*) the patient's temperature, (*e*) the chief mental symptoms, with the changes that take place in them, (*f*) the patient's weight, if possible every week, if the case is long continued. Such observations are very good for the attendant himself, and give confidence to the patient's relatives. 7. It falls more directly on the attendant, than in an asylum, to note whether the patient is in any way suicidal, and to take measures for his being properly watched. No mental nurse should ever go to a case without thinking of the question of a suicidal tendency. 8. As his position is isolated, he should ask the doctor very minutely about the treatment and contingencies, and speak fully about his difficulties; and he should report all struggles with the patient, etc. 9. As he should be above suspicion, it is usually better not to take any alcoholic stimulants at all while on duty. 21

To have the care of a few cases in their own houses, or in lodgings, is very good for an attendant trained in an institution. It makes him more watchful, more self-reliant, and more thoughtful, and he feels his own responsibility and the importance of his duties more. He should keep his place as the patient's *nurse*, and not mix with the servants; and, above all things, should not gossip, either in the house or out of it, about the patient's symptoms. Most likely he will at first be looked on with some suspicion or jealousy by those in the house, therefore he ought to be very prudent in his conduct; but if he does his work well, and the case turns out satisfactorily, he will often be rewarded by the gratitude and goodwill of his patients and their relatives.

Home Treatment enlarges Knowledge and increases Responsibility.

QUESTIONS ON CHAPTER IV.

1. Why is it important to attend carefully to the bodily health of the insane?

2. Under the head of 'Care of the Bodily Health,' what points require special attention?

3. How would you promote ventilation of the rooms?

4. Mention some bodily symptoms which would call for report by you to the medical officer.

5. Why, and when, should a patient's person be examined?

6. When a patient is much paralyzed, or has had a series of epileptic fits, what details require attention?

7. In regard to management of the mental state, what objects are aimed at in the general arrangements of an asylum?

8. How would you deal with individual patients, according to their varying mental conditions?

9. How should you act in regard to the delusions of patients?

10. How would you deal with insane habits? Give examples.

11. How may occupation and amusement of the patients be provided for, and why are they useful?

12. How would you guard against, and discover, escapes?

13. How do you guard against suicide?

14. What is meant by 'special observation'?

15. How do you guard against homicidal impulses?

16. If it is necessary to use force with a patient, what points should be attended to?

17. What general precautions should be observed in the case of (1) epileptics, (2) paralytics, and (3) senile cases?

18. Instance some mental symptoms which call for report.

19. What qualities should attendants show in their own conduct?

20. What precautions should an attendant take at once, when sent to have charge of a patient in a private house?

21. On what points, regarding a patient's progress, may a daily report from the attendant be expected by the doctor?

CHAPTER V.

*GENERAL DUTIES OF ATTENDANTS.**

IT is important that all who are engaged in the care of the insane should recognise the gravity of the charge entrusted to them, and

* Many of the suggestions contained in this chapter may be found scattered here and there in other portions of the Handbook, and it is simply with a view to focus the principal duties of an attendant, so as to enable them to be referred to readily, that they have been concisely reproduced here. This chapter should be read in conjunction with the rules of

that the duties connected therewith require the enduring exercise of much kindness and firmness, sobriety of demeanour, and an intelligent appreciation of, and obedience to, the rules and orders which may from time to time be laid down for their guidance. These duties, like all others, must be learnt, and it is therefore necessary that attendants should make themselves thoroughly familiar with the special rules and regulations of the asylum in which they may happen to be serving, as well as with the facts contained in the previous portion of this book, and the practical hints which form the subject of the present chapter.

Duties of Attendants.

The general principles which ought to guide attendants in the discharge of their duties are indicated in the declaration which is usually signed before they enter on asylum work. By that declaration they pledge themselves to promote the objects of the institution, to further the recovery of the patients, and to secure their comfort, welfare and safety. This chapter is designed to show, in brief, how such pledge may be redeemed.

Attendants should always remember that their position is one of great trust and responsibility ; that they have the care of those who, through affliction, cannot care for themselves ; and that, upon their exertions, the recovery, comfort, happiness, and safety of the patients in great measure depend ; while any disregard of rules, or a want of constant vigilance and care, may be the occasion of some dire calamity, bringing discredit, not only upon those directly responsible, but upon all who are associated with them in the work of the asylum. An attendant should consider himself part of a large, important and beneficent organization, in the satisfactory working of which he should take a personal pride ; he should endeavour by every legitimate means in his power to promote its interests and usefulness ; as in so doing he will not only enhance the good name of his asylum, but will add to his own reputation as being a member of its staff.

Attendants on the Insane occupy very Responsible and Trustworthy Positions.

Attendants should be gentle, forbearing, patient and humane in speech and action, and should themselves set an example of

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the asylum in which the nurse or attendant may happen to be engaged ; it is not intended to act as a substitute for such rules, but merely to supplement them, and perhaps in some degree to explain the reasons why they have been formulated and require to be strictly enforced.

industry, order, cleanliness and obedience. Patients should be treated with perfect candour and truthfulness; no deception should be employed towards them; delusions should not be laughed at, nor, on the other hand, is it well to make much of them. Violence on the part of a patient must never be met by similar conduct from an attendant. Profane, angry, irritating or threatening language should be scrupulously avoided; and efforts made to discourage its use by patients. Anything in the shape of a blow, no matter how slight, or ill-treatment in any form whatever, renders the offender liable to prosecution under 53 Victoria, cap. 5, section 322;* while sections 323 and 324 of the same

General Conduct towards the Patients.

Penalties for Ill-Treatment, etc.

* Lunacy Act, 1890.—Section 322: 'If any manager, officer, nurse, attendant, servant, or other person employed in an institution for lunatics, or any person having charge of a lunatic, whether by reason of any contract or of any tie of relationship, or marriage, or otherwise, ill-treats or wilfully neglects a patient, he shall be guilty of a misdemeanour, and, on conviction on indictment, shall be liable to fine or imprisonment at the discretion of the court, or be liable on summary conviction for every offence to a penalty not exceeding twenty pounds nor less than two pounds.'

Section 323: 'If any manager, officer, or servant of an institution for lunatics wilfully permits or assists, or connives at the escape or attempted escape of a patient, or secretes a patient, he shall for every offence be liable to a penalty not exceeding twenty pounds nor less than two pounds.'

Section 324: 'If any manager, officer, nurse, attendant, or other person employed in any institution for lunatics (including an asylum for criminal lunatics), or workhouse, or any person having the care or charge of any single patient, or any attendant of any single patient, carnally knows or attempts to have carnal knowledge of any female under care or treatment as a lunatic in the institution, or workhouse, or as a single patient, he shall be guilty of a misdemeanour, and, on conviction on indictment, shall be liable to be imprisoned with or without hard labour for any term not exceeding two years; and no consent or alleged consent of such female thereto shall be any defence to an indictment or prosecution for such offence.'

In Scotland similar offences are punished under 20 and 21 Vict., cap. 71, section 99: 'If any superintendent, inspector, officer or servant, or other person, employed in any public, private, or district asylum or house, or otherwise having the care of any person detained as a lunatic patient . . . shall wilfully maltreat, abuse, or neglect any person so detained to the injury of such person, such superintendent, inspector, officer or servant, or

Act impose very heavy penalties upon anyone wilfully permitting, assisting or conniving at the escape of a patient, and upon an attendant convicted of misconducting himself with a female patient.

Occupation and Amusement.

The occupation and amusement of the patients is a most important part of their treatment, as well as of the duty of an attendant; and it should be carried out with as much care and regularity as would the administration of any medicine that might be ordered.

Never leave the Wards unattended.

Attendants should exercise a constant supervision over all patients entrusted to them. When on duty, they should not leave the wards, except in obedience to instructions; and under no circumstances should a ward ever be left without an attendant, so long as there are any patients in it not on parole.

Keep your Wards and your Patients Clean and Tidy.

A well-kept, orderly, comfortable ward rarely fails to exercise a beneficial influence, even upon those patients who may at first sight appear to be incapable of appreciating the character of their surroundings. Attendants should see that the wards and dormitories are properly ventilated, and the temperature maintained at or near the point indicated in their instructions. The patients should be kept neat and tidy, not only in the wards, but in the airing courts, or when out for walks, and the most scrupulous personal cleanliness should be constantly enforced; a dirty head, except in the case of a recent admission, should be unknown in an asylum; while patients with faulty habits should receive the special attention of the attendants, as much improvement may be effected in some cases by seeing that regular visits to the closet are made at stated periods, and thus a good habit may be established and a bad one eradicated.

Keep newly admitted Patients under Close Observation.

Newly-admitted patients, as well as those who are dangerous, destructive, or dirty, should receive unceasing attention; while those who are prone to escape likewise require constant care; and it must not be forgotten that many seemingly quiet patients are, at times, liable to become dangerous to themselves and others.

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other person, shall be guilty of an offence, and for every such offence be liable in a penalty not exceeding one hundred pounds, or to be imprisoned for any period not exceeding six months.'

Never Gossip in the Hearing of the Patients.

Attendants should be very guarded as to what they say in the presence of the patients, and on no account should reports be made in the hearing of those referred to; nor should attendants discuss the affairs of the establishment or the patients and their peculiarities with anyone outside the asylum.

Examples of Occasions when Special Reports should be made.

The following are examples of occurrences which call for immediate and special report: accidents, violence (struggles), bodily illness, refusal of food, difficulty of swallowing, injuries, extraordinary mental symptoms, eruptions on the skin, shiverings, succession of fits, unusually threatening language (suicidal or homicidal), depression of spirits, attempts at escape, loss of keys, knives, etc. It should be clearly understood by the attendant that the emergencies mentioned in this paragraph are not the only ones that should be reported at once, as others may at any time arise which might call for a special and immediate report.

Nothing too Small for Observation and Consideration.

Nothing should be looked upon as of too trifling importance to notice in dealing with the insane; and a good attendant will be always on the watch for symptoms or other matters which, small in themselves, may, if disregarded, lead to trouble and anxiety for all concerned.

Suicidal Cases.

Especially is this true in the case of patients who have suicidal tendencies. So much ability and shrewdness are displayed by this class in the endeavour to accomplish their purpose, that the only plan is to adopt the rule which is, on the whole, a safe one, namely: NEVER ON ANY ACCOUNT, NOR FOR EVEN THE VERY SHORTEST PERIOD, PERMIT ANY PATIENT OF SUICIDAL TENDENCIES OUT OF YOUR SIGHT, NO MATTER UPON WHAT EXCUSE OR HOW PLAUSIBLY THE DESIRE FOR PRIVACY MAY BE URGED, *until those under whose authority you are acting withdraw the notices usually issued to all who have the care of suicidal patients.*

Golden Rule for Dealing with Suicidals.

Search Diligently and Thoroughly.

Such patients should also be frequently searched during the day; and at night care should be taken that nothing is concealed about their beds or persons, that might be used as an instrument of self-destruction.

When it is necessary to search a patient, it should be done

thoroughly, but in such a manner as to avoid irritating him, and to give as little annoyance as possible. All rubbish, food, and anything that might be converted into a dangerous weapon, should be taken away; but many patients have treasured possessions of little value to anyone but themselves, of which it would be positive cruelty to deprive them.

Searching Patients.

Much ingenuity is often exhibited by patients in the construction of weapons from all sorts of out-of-the-way articles, such as broken stay-busks, pieces of old iron, nails, slate, glass, etc., etc.; while stockings, neckties, boot-laces, tapes, garters, apron-strings, strips of calico and dress-material, braces, bandages, blind-cord, round towels, etc., have each at various times been used, often, unfortunately, with fatal effect, by patients who are afflicted by this most distressing and harassing symptom of mental disorder.

Improvised Weapons.

The possibility of suicide by the improper use of the common lucifer match should not be overlooked, and attendants should be careful not to introduce matches of this description, but invariably to use the safety matches now almost universally supplied in asylums; thus giving an additional security, not only from suicide, but also from risk of fire.

Do not Use the Common Lucifer Match.

It is important that articles which might possibly be converted into dangerous weapons should be kept out of the way, not only of the suspected, but also from all other classes of patients; as nothing is easier than for a cunning suicidal patient to obtain from a quiet and apparently harmless demeanour some article which, while only a plaything in the hands of the latter, becomes a formidable weapon under the manipulation of the former.

Keep Dangerous Articles from all Classes of your Patients.

Knives, scissors, razors, and every other description of cutting instrument, should be kept under lock and key when not in use, and should be counted at least once a day. Broken glass and crockery should be entirely and immediately removed out of reach of patients.

Count and Lock up all Cutting Implements.

A persistent effort should always be made to ascertain, if possible, the cause of any smell of fire or gas, or any other offensive or unusual odour; and, in case of failure to trace the origin of the nuisance, a report on the subject should be made without delay to a superior officer.

Smells of Fire, Gas, Drains, etc.

Report Structural Defects.

All doors, windows, shutters, etc., should be closely and constantly inspected, and any defect, however trifling, reported.

Keep all Articles likely to be Used as Weapons under Lock and Key.

Pokers, fire-shovels, towel-rollers, brooms, mops, deck-scrubbers, etc., may prove awkward articles in the hands of a violent patient, and for this reason, as well as for others, should be kept in a locked cupboard when not in use.

Medicines should never be entrusted to the care of patients, but should be placed under lock and key, and should not be kept in the same cupboard as disinfectants, many of which are of a corrosive and poisonous nature. Not more than the exact dose of a medicine should be given; and this should be ascertained by carefully reading the instructions on the label each time the medicine is administered.

Care and Administration of Medicine.

Never allow Patients to Enter Attendants' Rooms.

Patients should not be allowed to enter such places as attendants' rooms, where forbidden articles may be inadvertently left about, instead of being in a place of security. Keys should never be left in the lock or lying about, and the loss of one should be reported immediately.

The risk of suicide by burning should be minimized by the proper protection of all fires and by guarding lights; and the possibility of a patient being scalded or drowned in a bath is to be avoided, by the attendant retaining the bath-key always in his own possession; by always turning on the cold water first; by keeping the waste-tap open when the bath is not in use; and by never leaving a patient in the room while there is any water remaining in the bath.

Suicide by Burning, Scalding or Drowning.

Do not Interfere Unnecessarily with an Excited Patient.

No interference with any patient, still less with a violent one, should be practised, unless he is actually dangerous to himself or others; and even then it should not be continued longer than is absolutely necessary.

Do not Kneel upon or Twist the Wrists of a Patient.

In dealing with a violent patient, the knees should not be placed on any part of the body, and twisting the wrist should never be practised. Serious injury to the attendant may be caused by neglecting to remove the boots from a violent patient, as soon as it is possible to do so.

Attendants should always report at once to the proper official the occurrence of a struggle, so that any injury that might possibly have taken place may be discovered and treated without delay. The observance of this rule is as important in the interests of the attendant as it is for the safety of the patient.

Report Struggles Immediately.

Epileptics are often very malicious and spiteful towards those against whom they have any real or fancied grievance; but, as this is only part of their general malady, an attendant should never regard or treat their actions as he would those of a person not so afflicted, no matter how calm or rational the epileptic may appear to be during the interval between his attacks. It is well to mention also that epileptics will often attempt to bite those about them with whom they may happen to be at variance.

Epileptics Malicious and Spiteful.

Epileptics are very apt to injure themselves by falling, and in many cases this is quite unavoidable; but it is sometimes possible, with a little judgment and knowledge of a patient's habits, to make such arrangements as may tend to diminish the risk, and avoid the very disfiguring marks and injuries which otherwise frequently occur. For example, when it is known that a patient usually falls forward or backward on his head, a suitable padded cap may be worn, or the patient may be placed in such a position as the known circumstances of the case might suggest as advisable; while nothing is more calculated to do good to an epileptic threatened with severe fits, than treatment in bed under constant observation. When an epileptic, or, indeed, any patient, has had a fall, it is important to ascertain, before raising him to his feet, that no bone has been broken or other injury sustained.

Great care should be taken, when a patient is seized with a fit at meal times, to see that the mouth is clear; and the danger of suffocation during a fit at night can only be entirely prevented by placing the patient in an observation dormitory, and, if a special case, in a bed close to the station of the night attendant.

Danger of Suffocation.

Every attendant should learn how to deal with such an emergency as choking; and full instructions are given at p. 109 of this Handbook how to act pending the arrival of the medical officer, who should be summoned at once.

Treatment of a Patient who is Choking.

Epileptics should be Attended both Going Up and Down Stairs.

Epileptics should not be permitted to go either up or down stairs alone ; but should be accompanied by an attendant, who, on going upstairs, should follow the patient, and in descending precede him.

Treatment of an Ordinary Epileptic Fit.

In an ordinary epileptic fit the mouth of the patient should be cleared if necessary, the necktie or dress loosened, and care should be taken that suffocation does not occur from turning over on the face. After the convulsion has ceased, place a pillow under the head, and let the patient lie quiet for a time if so disposed. A patient having a succession of fits should be reported without delay to the medical officer or head attendant.

General paralytic patients frequently require the exercise of all the skill and patience of an attendant, in order to protect them from injuring themselves, or receiving an injury from those about them. Such patients are frequently very unsteady on their feet, restless, constantly endeavouring to get in and out of bed, and prone to interfere with the other inmates.

General Paralytics.

The bones of the general paralytic are often very brittle, so that he must be handled with great care ; and, in the advanced stages of the disease, bed-sores can only be guarded against by the most skilful nursing. General paralytics are even more liable to be choked by food than epileptics. The food should be soft, free from lumps, and readily swallowed ; and if the patient is able to feed himself, it is advisable to furnish him with a dessertspoon instead of the tablespoon generally used ; but the better plan is for an attendant to feed the patient, great care being taken that one spoonful is swallowed before another is given. Accidents have frequently occurred from the propensity to appropriate improper food, which is not uncommon with this class of patient ; so that it is well to deprive them of any opportunity of obtaining solid, or otherwise unsuitable, food, by placing them at a table apart from the other patients ; while it is all-important to see that they have quite emptied the mouth, before permitting them to leave the table. An observant attendant would draw the attention of the medical officer to any patient who might show signs indicating the necessity for the substitution of a soft or minced diet in lieu of that ordinarily provided.

Nursing and Feeding of General Paralytics.

The special bath rules in force in every asylum should be strictly observed, as many patients have died in consequence of such regulations being disregarded, or carried out with insufficient care by the attendant. It may not be out of place to specially emphasize the necessity of (*a*) using the thermometer when preparing a bath, so as to ensure that the temperature indicated thereby is that ordered by the rules or special directions ; (*b*) turning on cold water first, seeing there is sufficient in the bath before the hot is turned on, and keeping the hot and cold water constantly stirred, so that the temperature of the bath may be uniform before the patient is permitted to use it ; (*c*) never turning on the hot water while the patient is in the bath ; (*d*) never forcing the patient's head under water ; (*e*) seeing that the water is turned off, the bath empty, the waste-valve open, and the patient out of the room before the attendant leaves ; (*f*) never giving a cold or shower bath without a special order ; (*g*) never lending a bath-key, or, indeed, any other key, to a patient.

Bathing.

Special Points to be Observed.

No patient should be subjected to any seclusion, mechanical restraint or privation (such as of food, tobacco, etc.) without a special order from the medical officer. By *seclusion* is meant the placing of a patient alone in any locked room or locality during the daytime. By *mechanical restraint* is understood any restriction of the bodily liberty of a patient by some appliance, such as a sheet, rope, strait-jacket, towel or straps.

Privation, Seclusion and Restraint.

To those who have not had considerable experience in dealing with the mentally afflicted many of the suggestions and warnings contained in this chapter may appear fanciful and unnecessary ; but, as a matter of fact, the majority of them are founded upon reported cases which have actually occurred ; and all are given as the result of long and intimate acquaintance with the insane and their numerous peculiarities.

Conclusion.

While it is very important that due attention should be paid to the rules laid down for the guidance of attendants, yet, as it is impossible to formulate a code of regulations that shall provide for all the emergencies which may occur in the everyday life of an asylum, much must be left to the common-sense and judgment of those directly engaged with the patients. A good attendant takes a personal interest in the welfare of those placed under his charge ; he

is persevering in his efforts to promote their recovery and well-being in every possible way; and, in order to do this, it is necessary that he should observe their peculiarities and minute points of character. He must encourage them by his example; control their waywardness by his firmness, gentleness and patience; and he should never forget that even the most demented among his patients may have their heavy burden lightened by his treatment, while the prospect of restoring health to many of those entrusted to him should be a powerful incentive to exertion, and its successful accomplishment a reward for the anxieties, which must inevitably be the lot of all who conscientiously undertake the care and management of the insane.

APPENDIX.

NOTICE.—These regulations are in force at the date of issue of this edition, but it is proposed at the Annual Meeting of the Association in 1899 to make some important modifications, and candidates are recommended to apply after that date for the new code.

MEDICO-PSYCHOLOGICAL ASSOCIATION
OF
GREAT BRITAIN AND IRELAND.

REGULATIONS FOR THE TRAINING AND EXAMINATION OF CANDIDATES FOR THE CERTIFICATE OF PROFICIENCY IN NURSING AND ATTENDING ON THE INSANE.

TRAINING.

1. The system of training attendants in asylums to be on the following lines :

a. A period of three months' probation to be required before the attendant is considered to have formally entered training.

b. A period of two years' training and service in the asylum (including the period of probation) to be required before an attendant is allowed to become a candidate for examination.

c. System of training to be by :

(1) Study of the Handbook prepared and issued under the authority of the Association. Other books may be used in addition at the discretion of each individual superintendent.

(2) Exercises, under head and ward attendants, to be arranged at the discretion of the superintendent.

(3) Clinical instruction in the wards by the medical staff.

(4) Lectures or demonstrations (other than ward instruction) given by the medical staff, at least twelve of which shall be attended by each attendant during his two years of training.

(5) Periodical examination to test progress left to the discretion of the superintendent.

d. Scope of training shall be limited to the ordinary requirements of nursing and attendance on the insane patients, combined with instruction in the general features of mental disease, together with general ideas of bodily structure and function, sufficient to enable nurses under training to understand such instruction and to qualify them to render 'first aid,' especially in the case of accident or injury that may arise in asylums.

e. Any person who possesses a certificate of competence in nursing from a hospital or infirmary connected with a medical school, and having a system of training nurses, may be admitted to the examination for the nursing certificate of this Association after a residence of one year in an asylum. *Provided* that such candidate conform to all the regulations for admission to such examination save only in the matter of length of residence in an asylum.

f. In cases of an exceptional character, in which a person who has had a large experience of nursing the insane, but has been unable, through no fault of his own, to comply precisely with the regulations governing the admission of candidates to the examination for the nursing certificate, application may be made to the Registrar to place the circumstances of any such case before the Council, which may, in its discretion, order that such candidate be admitted to the examination. *Provided* that every such application be accompanied by a recommendation from a member of the Association, and by evidence that the applicant has had experience of nursing in an asylum.

g. The syllabus prepared by authority of the Association (see p. 146) indicates the subjects in which training is compulsory.

EXAMINATIONS.

2. Examinations for the purpose of granting certificates of proficiency to successful candidates to be held by the Association under the following conditions :

a. Examinations to be held twice yearly : on the first Monday in May and the first Monday in November.

b. Examinations to be held at individual asylums, wherever there may be candidates.

c. Examinations to be partly by papers and partly *vivâ voce*, the questions in each being confined to the limits of the syllabus.

d. The papers to be set by the examiners of the Association (appointed from time to time for examining medical candidates for the diploma of the Association). The examiners, when setting the papers, to fix marks for each question and to fix the minimum

total required for a pass. The Council frames regulations to prevent the contents of the papers being divulged before the proper time.

e. The examinations to be conducted as follows: The papers to be answered on the days fixed, under the supervision of the superintendent (not more than four hours being allowed for this), and to be examined and valued by the superintendent and an assessor. The practical part to be conducted by the superintendent and the assessor on as early a date after the fixed day as can be conveniently arranged by the superintendent and assessor, and the results forwarded to the Registrar not later than ten days from the fixed date.

f. The assessor to be the superintendent of another asylum, the consent of the President of the Association to his acting as such having been obtained.

g. The candidate shall obtain from the Registrar a schedule which shall be filled up and signed as required, *and returned to the Registrar at least four weeks before the examination.*

h. If, between the time of the signing of such certificates as are required by the schedule and the time of the examination, the candidate should be guilty of misconduct such as, if committed before the signing of such certificates, would have precluded the granting thereof, such misconduct shall be at once reported to the Registrar, and by him reported to the President. On such report the President may, if he thinks fit, order that the examination of a candidate be postponed; in which case he shall inform the Council at its next meeting both of the fact and his reasons for thus acting. The Council shall consider the matter, and may order that the candidate shall be refused admittance to the ensuing or any examination; and in that case shall give notice to the Registrar, who shall be empowered to return the examination fee, and shall take such steps as will, in his judgment, carry out the order of the Council.

REGISTER.

3. A register of candidates who have passed the examination shall be kept by the Registrar of the Association.

4. In case of misconduct on the part of a holder of a certificate, a superintendent (or, in private nursing, any member of the Association) shall at once transmit a report of the circumstances to the Registrar, who will lay the same before the Council for consideration. The Council will, if it thinks fit to do so, direct the Registrar to erase the name of the delinquent from the register.

5. Superintendents and other members of the Association on engaging attendants who profess to be on the register shall satisfy themselves that such is the case by inquiring of the Registrar.

FEES.

Each candidate is required to send 2s. 6d. with the schedule to the Registrar.

In case of failure, the candidate is required to send 1s. fee for each subsequent examination undergone.

Communications for the Registrar should be addressed in the first instance to—

THE REGISTRAR,
Medico-Psychological Association,
11, CHANDOS STREET, CAVENDISH SQUARE, W.

SYLLABUS OF TRAINING AND EXAMINATION.

See note at the commencement of the Appendix.

MATERIALS OF BODY STRUCTURE.—Names and uses of the more common, their relation to, and connection with, each other; elementary description of structure and functions of the skin, fat, muscle, bone.

FRAMING OF THE BODY.—Skull, spine, chest, trunk, limbs, names of the principal bones, description of joints, movements of the body, how effected.

ORGANS OF THE BODY.—Grouping into systems. *Circulatory system*—Composition of blood, the heart and bloodvessels, relation of circulation to respiration. *Respiration*—Mechanism of it, lungs, air-passages, chief changes in blood caused by respiration. *Alimentary system*—Description of the alimentary canal and its divisions, secreting organs, glands, process of digestion, classification of foods, effects of digestion, absorption, assimilation. *Excretory system*—Excretion by particular organs, the kidneys, etc. *Nervous system*—Brain and its chief divisions, white and gray matter, spinal cord, sympathetic nerves, nerves, elementary physiology, motion, sensation, the special senses, reflex action.

GENERAL CONDITIONS OF HEALTH.—Temperature of the body, weight of body, sleep and sleeplessness, waste and repair, and signs thereof.

SYMPTOMS OF DISEASE AND DISORDER.—Of the skin, the insane ear, of muscles, bones, and joints, fractures and dislocations of bones. *Of the organs of circulation*—Signs of obstruction of the circulation, syncope, heart dropsy, varicose veins. *Of the respiratory system*—Chief varieties, cough, spit, pain, disturbed breathing, fever, etc., chief causes. *Of the alimentary system*—Indigestion, its causes and symptoms, the tongue, flatulence, vomiting, diarrhœa, constipation. *Of the excretory system*—

Causes, urine, its quantity, colour, etc., kidney dropsy, coma, convulsions. *Of the nervous system*—Chief causes, pain, loss of sensation, involuntary movements, convulsions, tremor, loss of power of movement, reflex and sympathetic symptoms.

General Symptoms of Disease. — Derangement of temperature, shivering, pain, loss of weight.

General Ideas of Management of Illnesses.

Mind and its Disorders.—The seat of mind, healthy mind, intellect, will, feelings, instincts, memory, unsound mind, how defined and tested, mental depression, exaltation, enfeeblement and perversion, hallucinations, illusions, delusions, fixed delusion, condition of will, weak will, impulse, how far the insane are responsible, changes in emotions, insane habits and peculiarities, refusal of food, suicide, causes and methods, homicide, causes and methods, chief varieties of insanity, idiocy, imbecility, melancholia, mania, dementia, general paralysis, epileptic insanity, clinical varieties of insanity.

Nursing of the Sick.—*Management of sick-rooms*—Their ventilation, temperature, cleanliness, warmth, quiet, disinfectants. *Personal attention to the sick*—Diet, administration of medicine, method of cleansing sick persons, bed-sores, their causes, prevention, and management, making of beds, waterproof-sheets, draw-sheets, water-beds, hot bottles, etc. *Observation of cases*—Charts, records, and reports of symptoms, points to be noted, external indications of illness, taking temperature of body, counting pulse and respirations. *Appliances, etc.*—Cold dressings, wet compresses, poultices, fomentations, stupes, enemas, suppositories, steaming and inhalations, baths, wet packing, sponging, bandaging, carrying of helpless patients, use of stretcher. Forcible feeding. *Emergencies, principles of management in*—Fainting, epileptic fits, apoplexy, choking, hæmorrhage, fractures of bones, hanging or strangulation, drowning, suffocation, burning or scalding, poisoning. Artificial respiration.

Nursing and Care of the Insane.—Responsibility of attendants. *Management of the bodily condition*—Cardinal principles, general duties ventilation of rooms, cleanliness and order, reports of symptoms of illness, examination and observation of patients, wet and dirty cases, choking at meals, etc., rules for bathing patients, seclusion, restraint. *Management of the mental condition*—Observation of the rules of the asylum, routine, dealing with delusions, insane habits, occupation and amusements, liberty, and escapes, precautions against suicide and homicide, violent patients, assaults, struggles, and use of force, epileptics, reporting of mental changes. Bearing of attendants to patients, promises to patients.

Attendance on the Insane in Private Houses. — Differences between it and asylum attendance, reports to the doctor, responsibilities, risks and precautions, bearing towards other inmates of the house.

Full size of Badge.

THE Council of the Medico-Psychological Association have approved of a badge to be worn by the holders of the Certificate of Proficiency in Mental Nursing.

The Council, while consenting to the use of the badge, expressed a strong opinion that it should not be a gift to the Nurse or Attendant, but should remain the property of the Asylum, and be returned with the keys, etc., at the termination of the engagement.

The badge is in bronze, and can be had with a brooch-pin or with a ring suspender.

Further particulars may be obtained from the Registrar of the Association.

INDEX AND GLOSSARY.

THE END.

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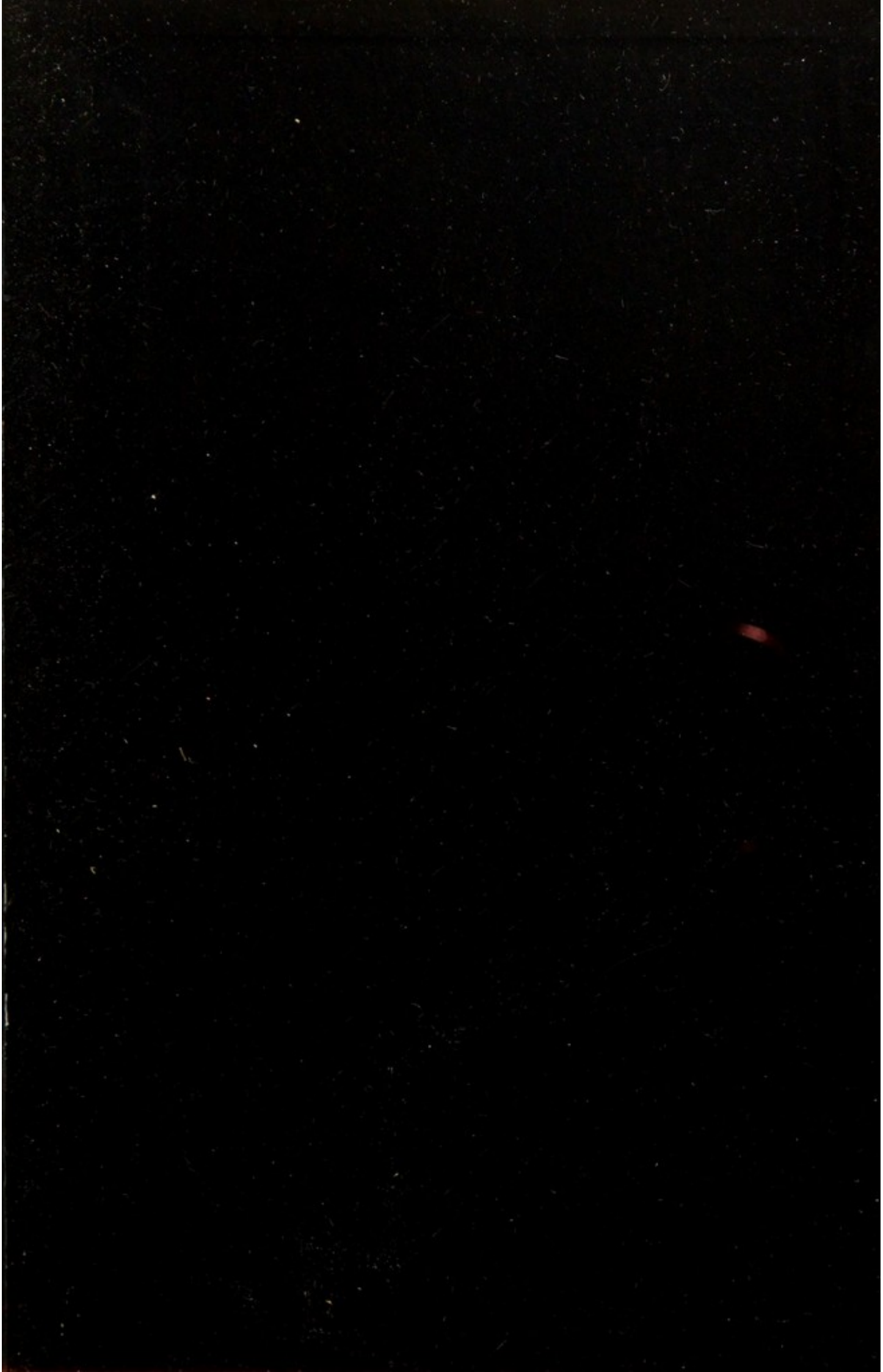


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