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MANUAL

FOR THE

MEDICAL STAFF CORPS.

WAR OFFICE, 1893.

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SECTION I.

TRAINING OF THE MEN OF THE MEDICAL STAFF CORPS IN FIRST AID AND NURSING.

1. PRELIMINARY REMARKS ON THE GENERAL SCOPE AND OBJECT OF THE INSTRUCTION OF MEN OF THE MEDICAL STAFF CORPS.

The duties of Medical Staff Corps.

1. The Medical Staff Corps is organised for the performance of duties, under the officers of the Army Medical Staff, in connection with the hospital and ambulance service of the army.

Duties in hospitals.

2. In hospitals, both in peace and war, at home and abroad, the corps is responsible not only for the nursing of the sick and the dispensing of medicines, but is called on to perform various duties connected with the charge of equipment, the making timely requisition for fuel, light, provisions and all requisite supplies and repairs, the cooking and expenditure of diets, the custody of patients' kits, the cleanliness of the hospital and its surroundings, the exchange of soiled for clean linen, bedding and clothing, and the preparation of the necessary accounts, abstracts and vouchers of expenditure. The standing orders relating to these duties are contained in Section III. of this volume.

Duties in the field.

3. In the field, the corps is further charged with another duty. It supplies to an army corps an organisation designed expressly for the purpose of speedily collecting and succouring the wounded during and after an engagement, and removing them from the battle-field to the field hospitals. The soldiers by whom this duty is performed are designated Stretcher Bearers, more briefly

Section I. Training of the Men

PRELIMINARY REMARKS—continued.

Bearer Companies.

Bearers, and the unit of this organisation is called a Bearer Company.

Duties of bearers.

4. The duties of bearers are in the first place to search for and tend the wounded, by administering to them water and stimulants, by applying a temporary dressing if the nature of the case so require, and by removing them, their arms and accoutrements, to a place of safety ; and secondly, to pitch tents and hospital marquees, to cook for the wounded, and to find guards for the wagons on the line of march and in camp.

Necessity for technical training.

5. To enable the men of the Medical Staff Corps to undertake even the most elementary of these duties, either in hospitals or in the field, it follows as a matter of necessity that they must undergo a course of technical training.

Preliminary training.

6. This technical training will commence as soon as the recruit has gone through a short preliminary training in squad and company drill, and the modified course of musketry instruction prescribed by the Queen's Regulations.

Duration of technical course.

7. The technical training, which embraces the subjects mentioned in the next paragraph, will, as a general rule, occupy about two months, the theoretical and practical instruction, which will invariably be imparted by, or in the presence and under the direction of, a Medical Officer, being carried out at the same time.

Which is theoretical and practical.

8. The theoretical training will embrace the subjects treated of in this section.

The practical training will include the application of field spliuts, tourniquets, and temporary dressings, and the various methods of lifting and carrying the wounded laid down in the Medical Staff Corps Drills and Exercises, in Section II.

Medical Staff Corps drill.

9. This drill was originally arranged by Brigade-Surgeon Sandford Moore, M.B., and published by him in 1877 in his "Manual of Exercises for training Stretcher-Bearers and Bearer-Companies."

Division of daily work.

10. The daily work should consist of 1-hour lecture, 1-hour corps drill, 1-hour exercise in the application of bandages, splints, tourniquets, &c., and 1 hour devoted to questioning on the previous day's work.

2. ANATOMICAL AND PHYSIOLOGICAL OUTLINES.

Method of instruction.

11. The Instructor will by explanation and demonstration expand the brief anatomical and physiological outlines

here given, sufficiently to impart to the men such a knowledge of the subjects referred to as will enable them to carry on their duties as nurses and hospital attendants intelligently. He will particularly explain the course and position of each of the principal arteries and veins, and point out the situations where the former can be most effectively compressed. The Instructor will obtain material assistance by employing Marshall's Physiological diagrams to illustrate his subject.

Construction of the human body.

12. The human body is made up of :—(1) the skeleton or bony framework with its joints; (2) the muscles; (3) the heart and blood vessels; (4) the lungs and air passages; (5) the brain, spinal cord, and nerves; (6) the stomach, intestines, and organs connected with digestion; (7) other organs contained in the abdominal cavity; (8) the skin.

Skeleton.

13. The skeleton consists of a number of bones, some long, some short and irregular, held together by bands or ligaments to form joints, which allow of greater or less movement between them. The bones determine the general shape and proportions of the body, give attachment to the muscles and form levers on which the muscles act to move the body from one position to another. They also form cavities for the protection of important organs.

The skull.

14. The bones of the head and face are collectively called the skull. The more important of these bones are the following :—

The cranium.

The *cranium* is the name given to the eight bones, closely united together, which form a strong bony case for the protection of the brain. In front is the *frontal* bone, behind is the *occipital* bone, at the sides are the two *temporal* bones, above and at the sides are the two *parietal* bones, and forming the base are the *sphenoid* and *ethmoid* bones. The extreme top of the head is called the *vertex*.

The occipital bone is articulated to the spinal column, and here has an opening through which the spinal cord from the brain passes into the canal in the spinal column. Just above this opening there is a projection of the bone forming a sort of knob, the *occipital protuberance*.

Bony protection of eyes and ears.

The frontal bone, in connection with the sphenoid and the bones of the face, forms sockets for the eyes.

The temporal bones contain the apparatus for hearing, protected in strong bony canals.

Bones of the face.

The face is made up of a number of small irregular bones, which give shape to the face and attachment to its

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

muscles. They are immovably united together like the bones of the cranium, with the exception of the lower jaw or *inferior maxilla*. The upper edge or border of the lower jaw has set in it sixteen teeth, which meet and shut against sixteen similar teeth set in the lower edge or border of the upper jaw bones or *superior maxillæ*.

Bones of the trunk.

15. The bony parts of the trunk are the spinal column, the chest, and the pelvis.

Spinal column.

The *spinal column* or back bone, to allow of the movement of the trunk, is composed of twenty-four separate and somewhat similarly shaped bones called *vertebræ*, placed one above the other, down the centre of which runs a canal or cavity, the *spinal canal*, which contains and protects the *spinal cord*. The first seven of these bones from above down are the *cervical* or neck vertebræ, the next twelve the *dorsal* or back vertebræ, and the last five the *lumbar* or loin vertebræ. Below these come the *sacrum* or rump bone and the *coccyx* or tail bone, both continuations of the spinal column, the former being joined with the hip bones to form the pelvis.

The chest.

The chest or *thorax* is a large bony cavity, containing the heart, lungs, *œsophagus* or gullet, and great blood vessels, formed by the union of the twelve dorsal vertebræ of the spinal column with the *costæ* or ribs, and the *sternum* or breast bone in front. There are twelve ribs on each side, seven termed *true* and five *false* ribs, two of the latter are called *floating* ribs.

The pelvis.

The *sacrum* and the *innominate* or nameless bones, one on either side, are firmly united to form the basin shaped cavity of the *pelvis* which contains and protects the bladder, rectum, and large vessels ; from it the lower extremities or limbs are suspended.

Bones of the upper limb.

16. The upper limb is divided into the shoulder, the arm, the fore-arm, and the hand.

The shoulder.

The *shoulder* connects the arm to the trunk, and includes two bones, the *clavicle* or collar-bone and the *scapula* or shoulder-blade. The former is a long curved bone in front connecting the scapula to the breast-bone, the latter a large, flat, triangular bone lying upon the ribs behind.

The arm.

The bone of the arm is called the *humerus*, it is a long bone, having at its upper end a rounded head which articulates with the scapula, and at its lower end a grooved surface, which, with the bones of the fore-arm, forms the elbow joint.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

The fore-arm.

The bones of the fore-arm are the *radius* and the *ulna*. The radius extends from the outer side of the elbow to the thumb side of the wrist. The ulna extends from the inner side of the elbow to the little finger side of the wrist. At its upper end is a projection, the *olecranon*, which forms the point of the elbow. The space between the radius and ulna is called the *interosseous space*.

The hand and wrist.

The bones of the hand are arranged in three series; firstly, in the wrist are a number of small bones called the *carpus*; secondly, a row of long bones called the *metacarpus*, forming the palm; and lastly, fourteen bones called *phalanges*, forming the skeleton of the fingers and thumb, these being disposed two to the thumb and three to each of the fingers.

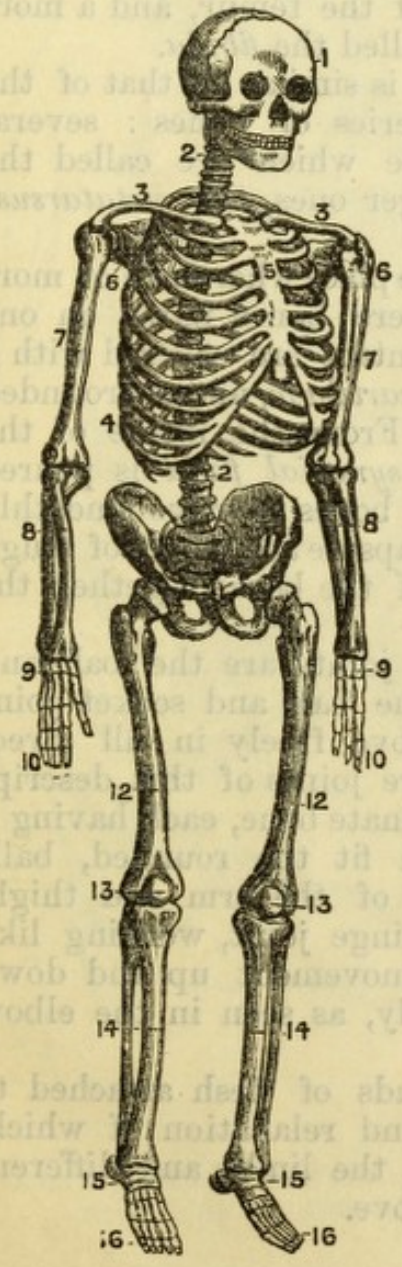


FIG. 1.

SKELETON OF HUMAN BODY.

1. Cranium, or skull.
2. Spine formed of vertebræ.
3. Clavicle, or collar-bone.
4. Costæ, or ribs.
5. Sternum, or breast-bone.
6. Scapula, or shoulder-blade.
7. Humerus, or arm-bone.
8. Radius and ulna.
9. Carpal and metacarpal bones.
10. Phalanges, or finger-bones.
11. Innominate or nameless bones.
12. Femur, or thigh-bone.
13. Patella, or knee-cap.
14. Tibia and fibula.
15. Tarsal bones.
16. Metatarsal bones and phalanges.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

Bones of the lower limb.

17. The lower limb is divided into the thigh, the leg, and the foot.

The thigh.

The *thigh* is that portion which extends from the hip above to the knee below; its one bone is named the *femur* or thigh bone, and is the largest and strongest in the body. At its upper end there is a rounded head, which fits into a deep cup-shaped depression in the nameless bone forming the hip joint; below, the expanded end of the bone enters into the formation of the knee joint. Protecting the knee joint in front there is a small bone called the *patella* or knee-cap.

The leg.

The *leg*, extending from the knee to the ankle, has two bones, a larger one lying on the inner or great toe side, called the *tibia* or shin bone, upon the flat expanded head of which rests the lower end of the femur, and a more slender one on the outer side, called the *fibula*.

The foot and ankle.

The construction of the foot is similar to that of the hand, and like it has three series of bones: several short strong ones in the ankle which are called the *tarsus*; secondly, a row of longer ones, the *metatarsus*; and lastly, fourteen *phalanges*.

Joints or articulations.

18. A joint or *articulation* is the place where two or more bones are joined together. Where bones move on one another, the ends coming in contact are covered with a soft bluish-white material called *cartilage*, and surrounded by a sort of bag, the *capsule*. From the inside of the capsule an oily material called *synovial fluid* is poured out, which causes the ends of the bones to move smoothly over one another. Outside the capsule are bands of tough material connecting the ends of the bones together, the

Ligaments.

ligaments.

Varieties of joints.

The two principal varieties of joints are the ball and socket and the hinge joint. The ball and socket joint allows one of the bones to move freely in all directions. The shoulder and hip are joints of this description; the scapula and the innominate bone, each having a cup-like depression, into which fit the rounded, ball-shaped ends of the long bones of the arm and thigh. The second kind of joint, the hinge joint, working like the hinge of a door, allows of movement up and down or backwards and forwards only, as seen in the elbow and knee.

Muscles.

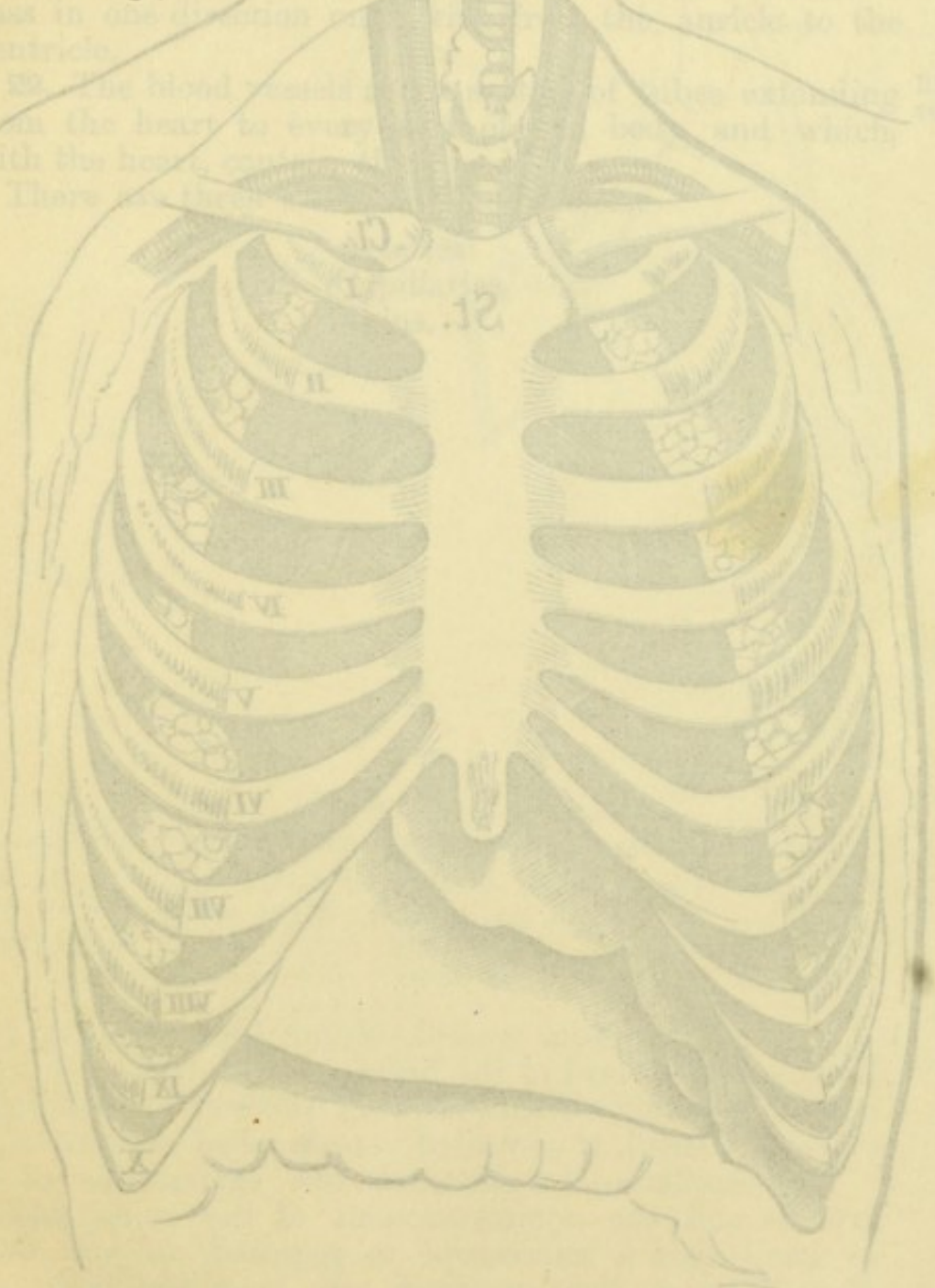
19. The muscles are red bands of flesh attached to the bones, by the contraction and relaxation of which, under the influence of the will, the limbs and different parts of the body are made to move.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

20. The organs of the circulation consist of :— Organs of circulation.

1. The heart.
2. The blood vessels.
3. The blood.

21. The heart is a hollow muscle about the size of the closed fist, lying in the cavity of the chest between the two lungs, and a little to the left of the middle line. Heart.



ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

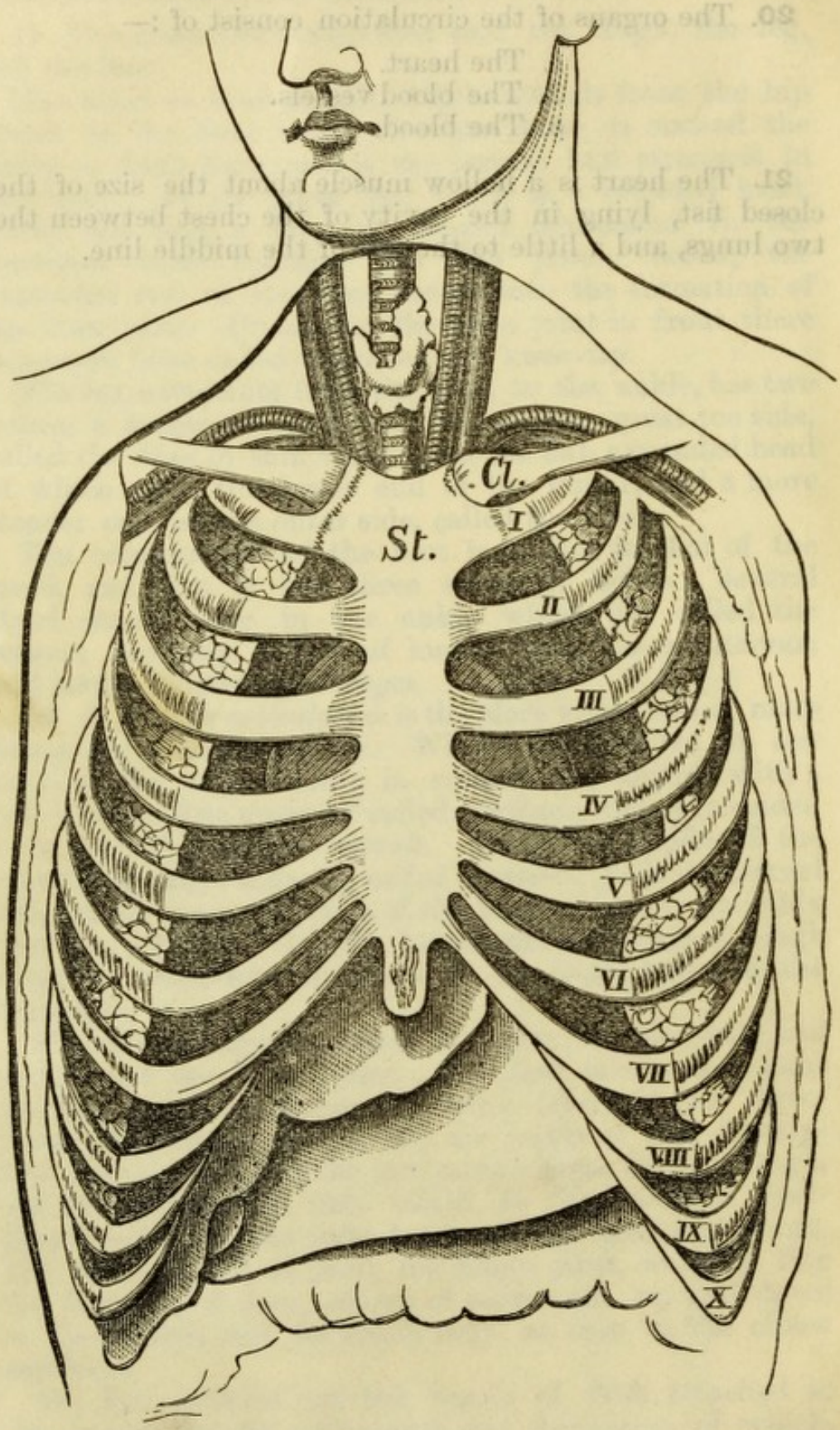


FIG. 2.—CAVITY OF CHEST EXPOSED, SHOWING LUNGS, HEART, TRACHEA AND LARGE BLOOD VESSELS IN THE NECK.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

It is divided into a right and left half, separated by a muscular partition, so that nothing can pass directly from the right to the left side of the heart.

Auricles and ventricles.

Each half is divided by a movable partition or valve into an upper, thin-walled receiving chamber and a lower, thick-walled pumping chamber. The upper chamber is called an *auricle*, the lower a *ventricle*. The valve between each auricle and ventricle allows fluid to pass in one direction only, viz., from the auricle to the ventricle.

Blood vessels.

22. The blood vessels are a system of tubes extending from the heart to every part of the body, and which, with the heart, contain the blood.

There are three kinds of blood vessels:–

Arteries
Capillaries.
Veins.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

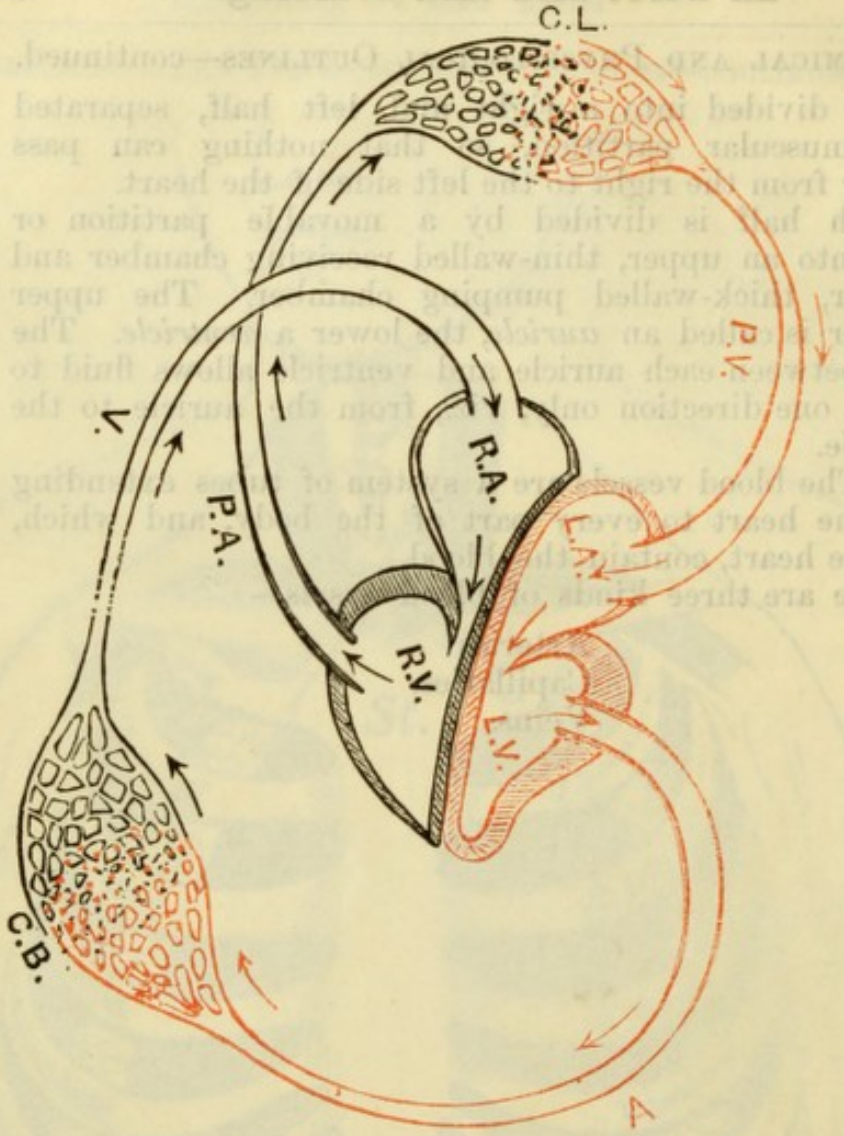


FIG. 3.
DIAGRAM OF CIRCULATION THROUGH THE BODY AND LUNGS.
L.V. Left ventricle. A. Arteries of body. C.B. Capillaries of body. V. Veins of body. R.A. Right auricle. R.V. Right ventricle. P.A. Arteries of lungs. C.L. Capillaries of lungs. P.V. Veins of lungs. L.A. Left auricle.

Arteries. Arteries are thick-walled, strong tubes, leading from the lower chambers of the heart—the ventricles—branching and getting smaller as they proceed, and ending in extremely small, thin-walled vessels called capillaries.

Capillaries. The capillaries lie between the extremities of the arteries and the commencement of the veins, and are so small that a microscope is required to see them. They form a close network all over the body, and gradually collecting together and getting larger they become veins.

Veins. The veins, thin-walled tubes, commencing thus in the capillaries, become fewer in number and larger in size as

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

they get nearer the heart, until they end in the large veins which open into its upper chambers—the auricles.

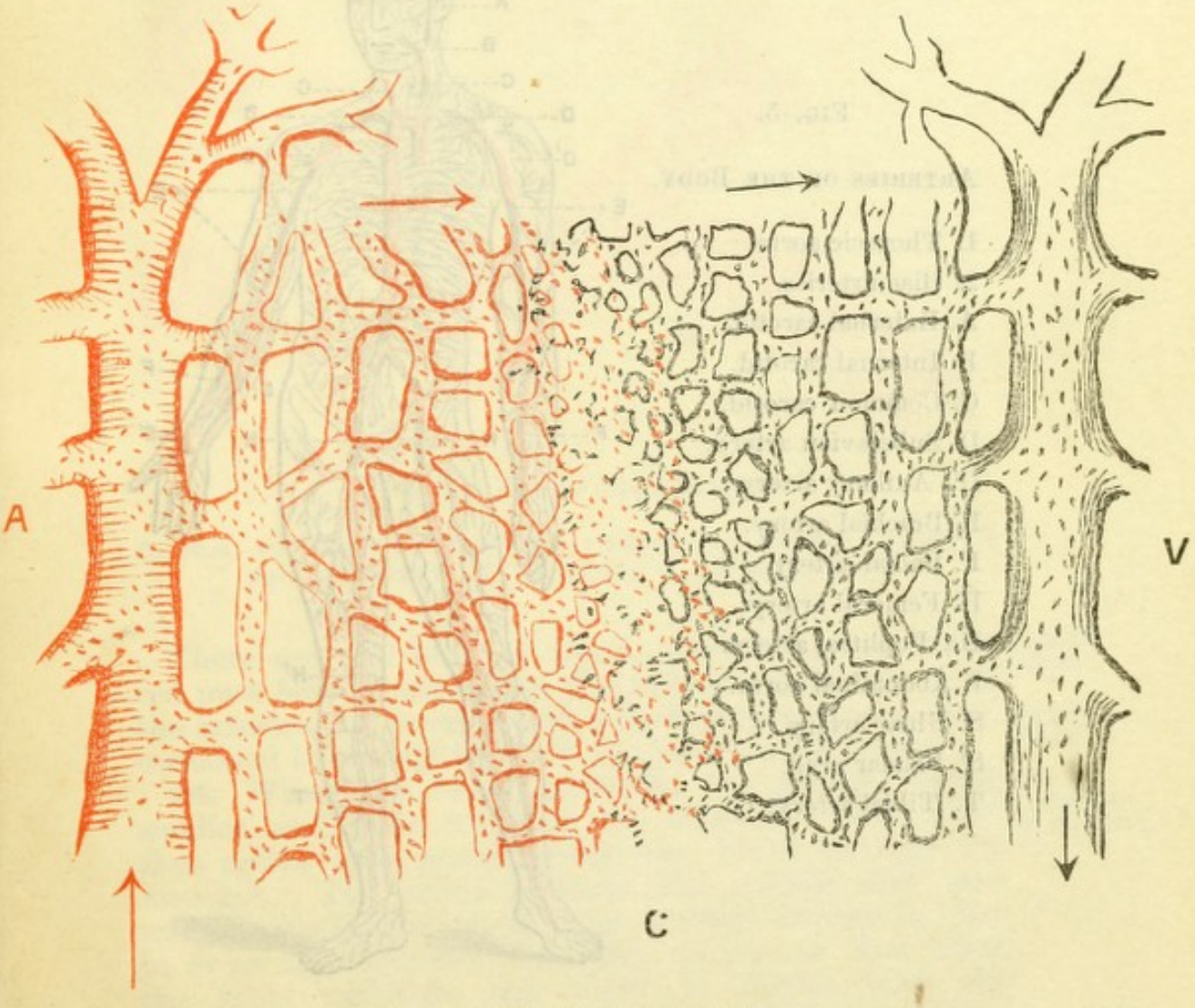
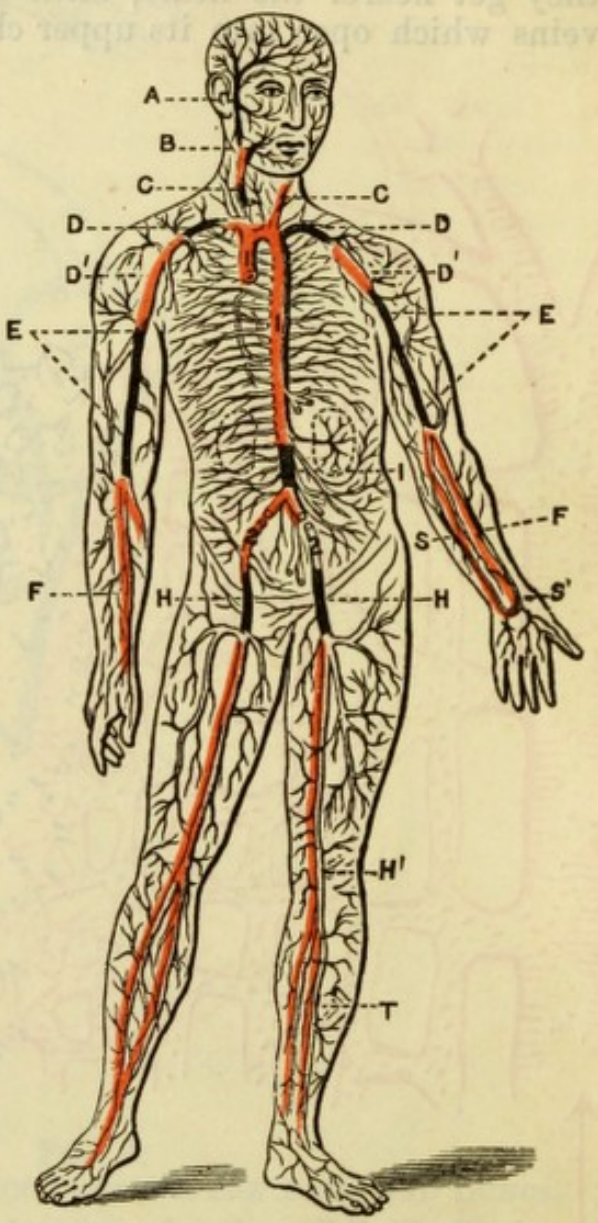


FIG. 4.—DIAGRAM SHOWING:
A. ARTERIES. C. CAPILLARIES. V. VEINS.

23. The blood is a red fluid which coagulates or changes into a jelly-like mass when it escapes from the heart or blood vessels. The blood.

Fig. 5.

Arteries of the Body.



1. Thoracic aorta.
2. Iliac arteries.
A. External carotid.
B. Internal carotid.
C. Common carotid.
D. Subclavian artery.
D¹. Axillary artery.
E. Brachial artery.
F. Radial artery.
H. Femoral artery.
H¹. Popliteal artery.
I. Abdominal aorta.
S. Ulnar artery.
S¹. Palmar arch.
T. Tibial artery.

Liquor sanguinis and blood corpuscles.

It is composed of a colourless fluid, *liquor sanguinis*, in which float a number of discs, the red blood corpuscles, and a few white round bodies, the white corpuscles.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

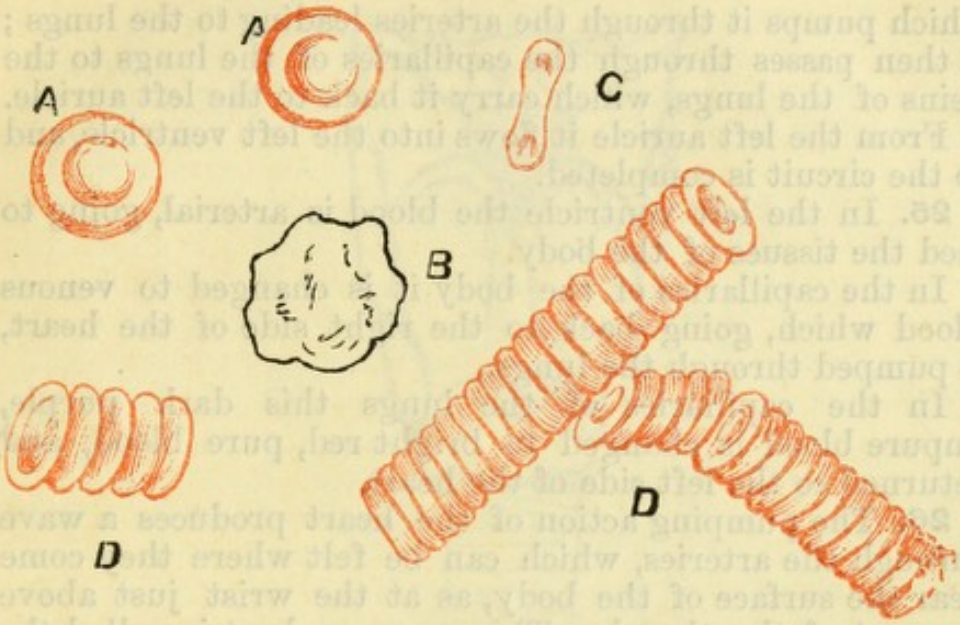


FIG. 6.—BLOOD CORPUSCLES.

A. Red corpuscles. B. White corpuscle. C. Red corpuscle seen edgeways. D. Rouleaux of red corpuscles.

Arterial blood.

Venous blood.

There are two kinds of blood, *arterial* blood, a bright red pure blood contained in the left side of the heart and the arteries, and *venous* blood, a dark purple, impure blood contained in the right side of the heart and the veins.

The circulation of the blood.

24. When the heart contracts, its cavities become smaller, and their contents are expelled. The heart thus acting as a pump drives the blood through the vessels.* The valves between the auricles and ventricles prevent the blood from flowing backwards, that is, from the ventricle into the auricle, so that when the heart contracts, the blood is driven from the ventricles through the arteries. This contraction occurs in health about 72 times a minute, the heart relaxing and its cavities enlarging to their original size after each contraction, and becoming again filled with blood.

Course of the blood.

From the left ventricle the blood is driven through the aorta and arteries, from the arteries through the capillaries to the veins, and through the veins is carried back to the right auricle.

From the right auricle it passes to the right ventricle,

* The action of the two sides of the heart may be demonstrated by two Higginson's syringes and two basins, the capillaries of the body and lungs being represented by the basins.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

which pumps it through the arteries leading to the lungs; it then passes through the capillaries of the lungs to the veins of the lungs, which carry it back to the left auricle.

From the left auricle it flows into the left ventricle, and so the circuit is completed.

Character of blood in its course.

25. In the left ventricle the blood is arterial, going to feed the tissues of the body.

In the capillaries of the body it is changed to venous blood which, going back to the right side of the heart, is pumped through the lungs.

In the capillaries of the lungs this dark purple, impure blood is changed to bright red, pure blood, and returned to the left side of the heart.

The pulse.

26. The pumping action of the heart produces a wave through the arteries, which can be felt where they come near the surface of the body, as at the wrist just above the root of the thumb. This wave or beat is called the pulse. Each beat corresponding with the contraction or beat of the heart.

In the veins there is no beat or pulse, the force of the blood current being modified as it passes through the wide network of capillaries lying between the ends of the arteries and the commencement of the veins, so that the blood flows in the latter in a steady even stream.

Organs of respiration.

27. The organs of respiration, or breathing, consist of—

The trachea or wind pipe.
The lungs.

Trachea or wind pipe, larynx, and bronchi.

The trachea or wind pipe is a stout, rigid tube through which the air passes into and out of the lungs. Its upper part, called the larynx, is the organ of voice, and opens into the back of the mouth and nose. The wind pipe can be felt in the throat under the skin where it lies immediately in front of the gullet. In the chest it divides into two tubes, the bronchi, one for each lung.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

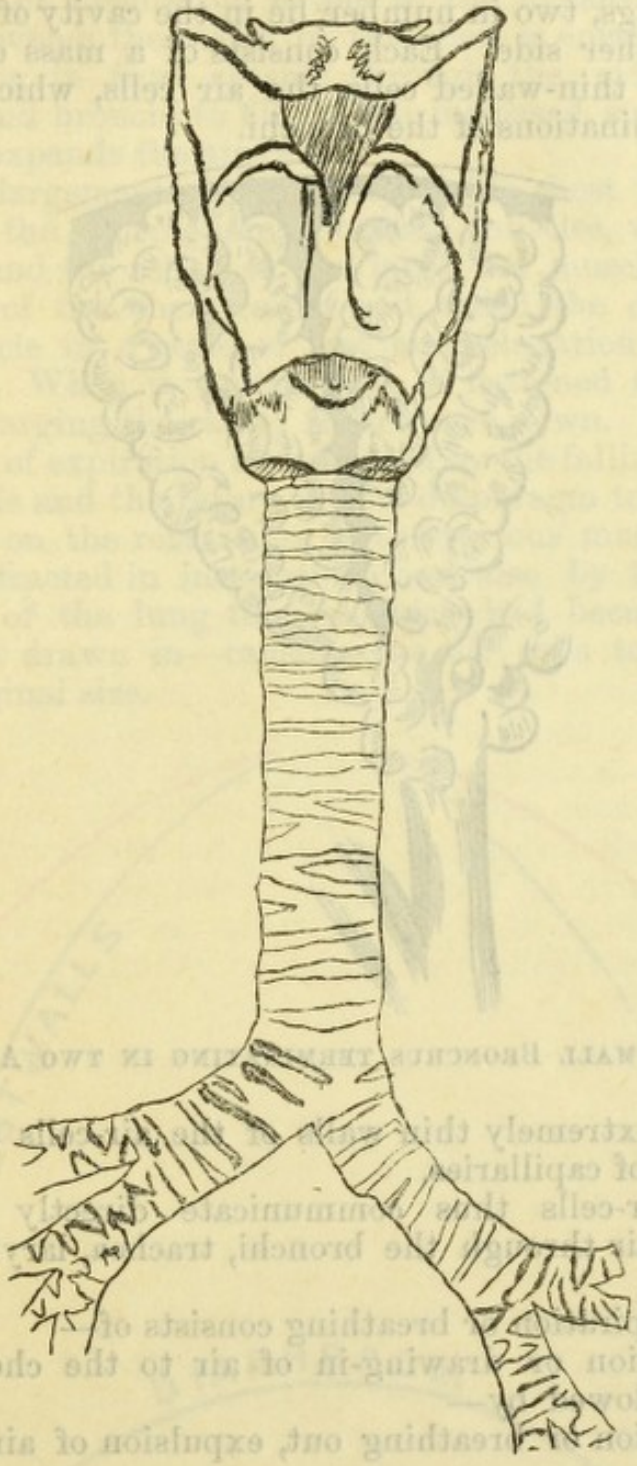


FIG. 7.—LARYNX, TRACHEA AND BRONCHI.

Bronchial tubes.

The bronchi are stout tubes leading from the trachea to the lungs. In the lungs the bronchi branch out in all directions, becoming smaller and their walls thinner as they proceed to their closed terminations, the air cells.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

Lungs.

The lungs, two in number, lie in the cavity of the chest, one on either side. Each consists of a mass of minute, extremely thin-walled cells, the air cells, which are the blind terminations of the bronchi.

Air cells.



FIG. 8.—SMALL BRONCHUS TERMINATING IN TWO AIR CELLS.

Lung capillaries.

In the extremely thin walls of the air-cells are spread networks of capillaries.

The air-cells thus communicate directly with the external air through the bronchi, trachea, larynx, mouth and nose.

Description of respiration.

28. Respiration or breathing consists of—

Inspiration or drawing-in of air to the chest, immediately followed by—

Expiration or breathing out, expulsion of air from the chest.

This is followed by a pause while one may slowly count two.

These together form a complete respiration.*

A complete respiration occurs in health eighteen times in a minute.

* The importance of impressing the relation to one another of these three phases of respiration becomes manifest when the practice of artificial respiration is being taught.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

Mechanism of inspiration.

The act of inspiration is due to the expansion of the chest, by which the cavity of the chest is enlarged. The air rushing in from outside through the mouth, nose, trachea, and bronchi to fill up the increased space, passes into and expands the air cells.

Action of the diaphragm and other muscles.

This enlargement of the cavity of the chest is brought about by the contraction of certain muscles, which raise the ribs, and the action of the large flat muscle forming the floor of the chest cavity and called the *diaphragm*. This muscle in a state of rest and relaxation is arched upwards. When it contracts it is flattened and drawn down, enlarging the cavity from above down.

Mechanism of expiration.

The act of expiration is performed by the falling-in of the chest walls and the return of the diaphragm to its arched condition on the relaxation of the various muscles which were contracted in inspiration, and also by the natural elasticity of the lung tissue—which had been expanded by the air drawn in—causing the air cells to return to their original size.

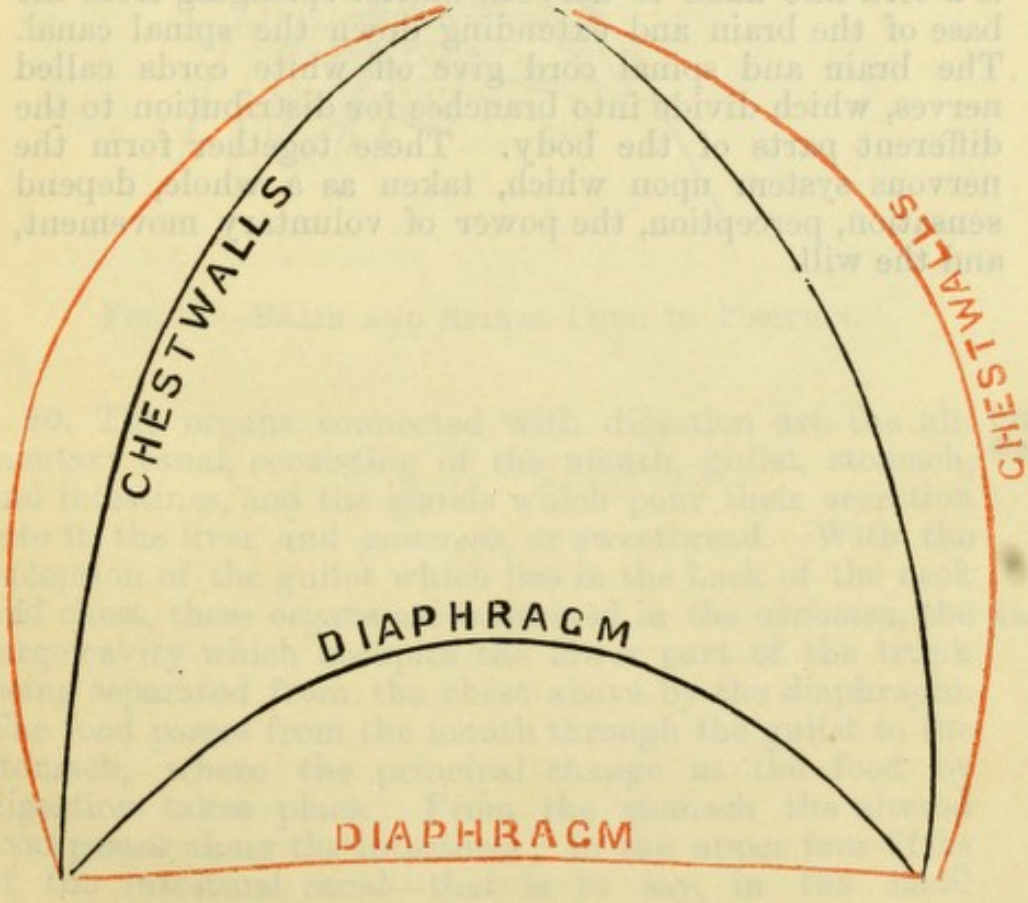


FIG. 9.—DIAGRAM OF CAVITY OF CHEST.

Position in inspiration shown in red lines, and expiration in black lines.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

The pause. The pause is a short period of rest during which the muscles recover themselves for their next contraction.

Object of respiration. The object of respiration is to purify the blood, which in passing through the capillaries of the body is rendered impure by taking up certain waste products from the tissues.

Purification of the blood. This impure blood returns to the right side of the heart and is pumped through the lungs. Passing along the network of thin-walled capillaries which are spread through the walls of the air cells, it is brought into close contact with the air in the cells. The walls of the capillaries and air cells are so thin as to allow changes to take place between the air and the blood. Thus the impurities brought from the body are given up by the blood to the air, and the blood takes up from the air a gas called oxygen, which renders it bright red in colour and pure.

Effect of oxygen.

Nervous system includes brain, spinal cord, and nerves. **29.** The brain is the largest and most important portion of the nervous system. It is an oval shaped mass of nervous substance. The spinal cord, as its name implies, is a cord-like mass of nervous matter springing from the base of the brain and extending down the spinal canal. The brain and spinal cord give off white cords called nerves, which divide into branches for distribution to the different parts of the body. These together form the nervous system upon which, taken as a whole, depend sensation, perception, the power of voluntary movement, and the will.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

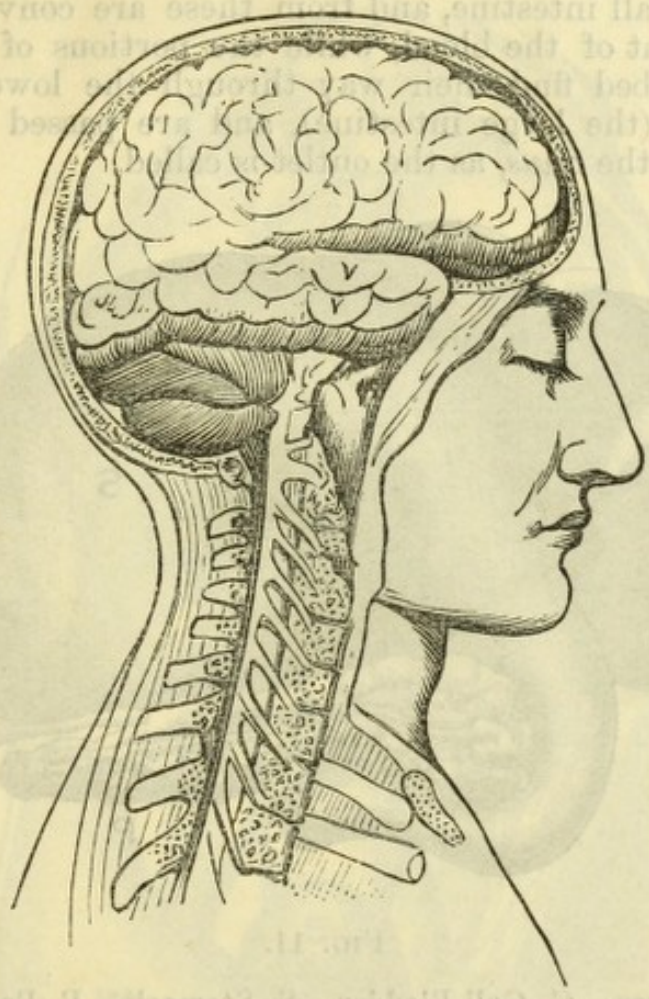


FIG. 10.—BRAIN AND SPINAL CORD IN POSITION.

Organs of digestion.

30. The organs connected with digestion are the alimentary canal, consisting of the mouth, gullet, stomach, and intestines, and the glands which pour their secretion into it, the liver and *pancreas*, or sweetbread. With the exception of the gullet which lies in the back of the neck and chest, these organs are contained in the *abdomen*, the large cavity which occupies the lower part of the trunk being separated from the chest above by the diaphragm. The food passes from the mouth through the gullet to the stomach, where the principal change in the food by digestion takes place. From the stomach the altered food passes along the intestines; in the upper four-fifths of the intestinal canal—that is to say, in the small intestine—the food is acted upon by the secretions from the liver, sweetbread, &c.; the nutritive materials thus prepared are slowly absorbed by special vessels in the walls

Abdomen.

of the small intestine, and from these are conveyed into the current of the blood, while the portions of the food not absorbed find their way through the lower fifth of the canal (the large intestine), and are passed from the bowel by the *anus*, as the outlet is called.

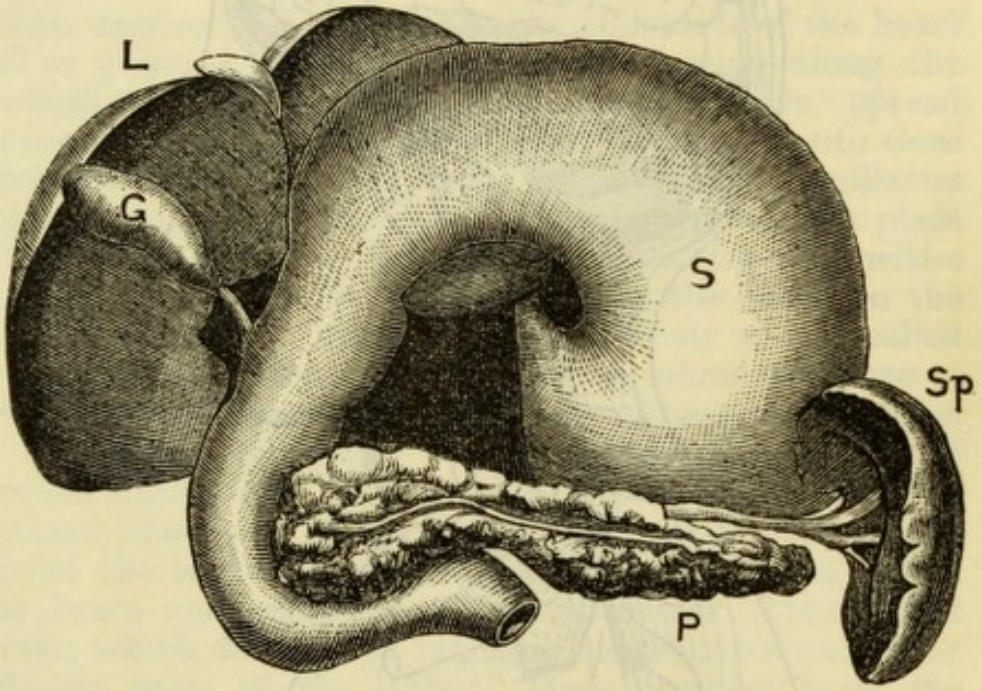


Fig. 11.

L. Liver. G. Gall Bladder. S. Stomach. P. Pancreas. Sp. Spleen.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

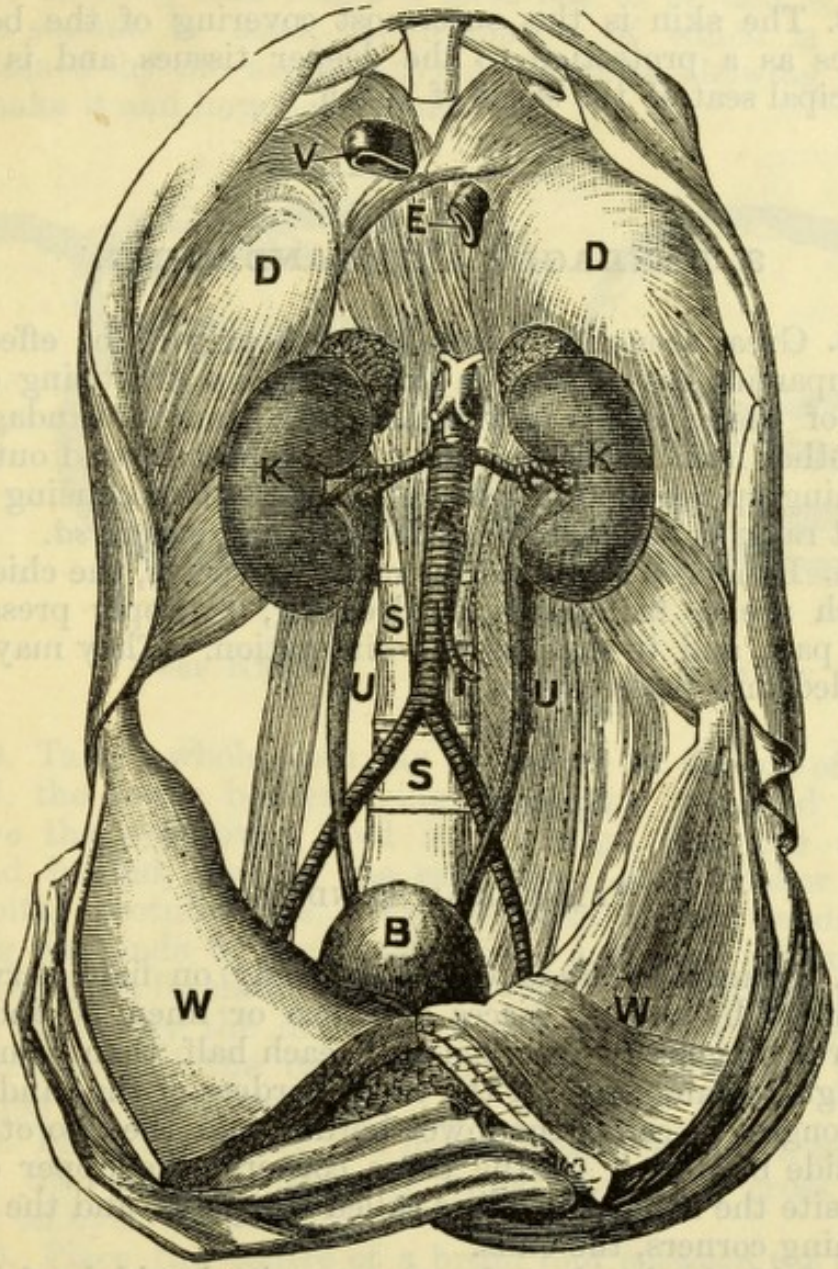


FIG. 12.

A. Aorta. B. Bladder. D. Diaphragm. E. Gullet. K. Kidney. S. Spinal Column. U. Ureter. V. Vena cava. W. Walls of Abdomen.

Other organs in the abdominal cavity.

31. On the right side of the abdomen, just underneath the ribs, is the liver, and across in front of the spinal column, the pancreas. In addition to the organs connected with digestion, the abdomen contains, on the left side, the spleen. Behind and on either side of the spinal column in the loins are the kidneys. The urine formed in the kidneys is conveyed by tubes called ureters to the bladder whence it is voided by the urethra.

ANATOMICAL AND PHYSIOLOGICAL OUTLINES—continued.

Skin.

32. The skin is the outermost covering of the body, serves as a protection to the deeper tissues, and is the principal seat of the sense of touch.

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3. BANDAGES AND BANDAGING.

Method of instruction.

33. Great economy of time and labour will be effected in imparting instruction in bandaging by practising one-half of the members of the class at a time in bandaging the other half. This can probably be best carried out by forming up the men in two ranks, and then causing the front rank to bandage the rear rank, and *vice versâ*.

Various kinds of bandages.

34. Bandages are used for many purposes, the chief of which are to fix splints or dressing, to apply pressure to a part, and to support the circulation. They may be divided into three classes :—

Triangular.
Roller.
Special.

TRIANGULAR BANDAGES.

Description of triangular bandage.

35. Triangular bandages, used chiefly on field service, are made by cutting pieces of calico or linen, 36 inches square, diagonally into halves ; each half then forms a triangular bandage. Of the three borders of the bandage, the longest is called the lower border, and the two others the side borders. Of the three corners, the upper one, opposite the lower border, is called the point, and the remaining corners, the ends.

Stowage.

To fold the bandage for stowage, it should be folded perpendicularly down the centre, placing the two ends together, the right end on the left ; then the ends and the point should be brought to the centre of the lower border, thus forming a square ; fold in half from right to left, and in half again from above downwards twice, and pin off.

Three modes of application.

36. The bandage is applied as : (*a*) a whole cloth ; (*b*) broad fold ; or (*c*) narrow fold. The whole cloth is the bandage spread out to its full extent. The broad fold is made from the whole cloth by carrying the point to the centre of the lower border, and then folding the bandage again in the same direction. The narrow fold is made by folding the broad fold once lengthwise.

BANDAGES AND BANDAGING—continued.

37. In every case where a knot has to be tied, a reef knot should be used, the formation of which is best explained by the accompanying diagrams showing how to make it and how not to make it. Reef knot.

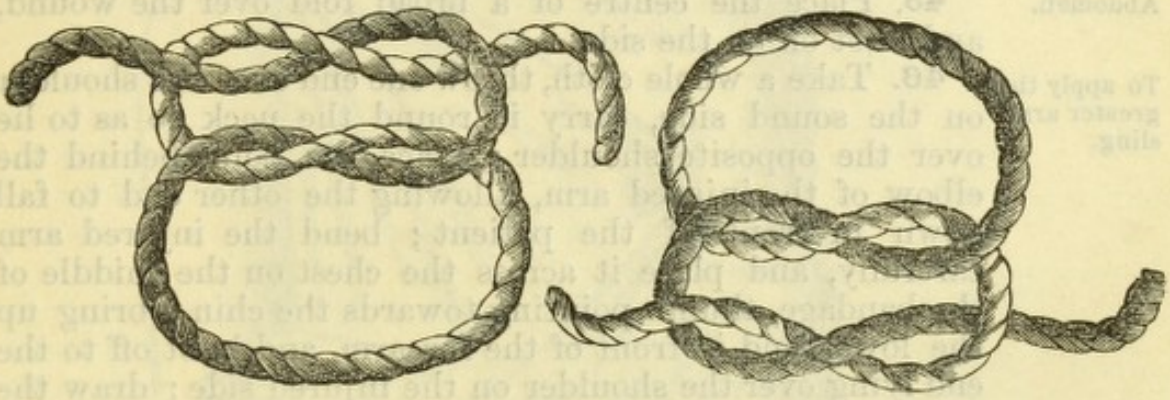


FIG. 13.

REEF KNOT. GRANNY KNOT.

38. Take a whole cloth, lay the centre on the top of the head, the lower border lying along the forehead just above the eyebrows; fold in the edge, pass the ends round behind, leaving the ears free; cross below the occipital protuberance over the point of the bandage; bring the ends to the front again, and knot off on the centre of the forehead. Place the hand on the top of the head to steady the dressing, draw the point down to tighten and fit the bandage to the head, then turn it up and pin off on the top. To bandage top of head.

39. Place the centre of a narrow fold over the dressing, pass the ends horizontally round the head, cross and knot off over the dressing. Side of head.

40. Place the centre of a broad fold between the eyes, carry the ends backwards, cross and knot off in front. Both eyes.

41. Place the centre of a narrow fold over the injured eye, pass one end obliquely upwards over the forehead, the other downwards across the ear; cross below the occipital protuberance, and knot off above the eyebrow on the injured side. One eye.

42. Place the centre of a narrow fold under the chin, pass the ends upwards, and knot off over the vertex, tucking in the ends. Chin and side of face.

43. Place the centre of a narrow fold over the dressing, cross the ends, bring back and knot off over the wound. Neck.

BANDAGES AND BANDAGING—continued.

Chest. **44.** Apply the centre of a broad fold over the dressing, pass the ends round, and knot off on the other side, leaving a long end ; take a narrow fold, tie to long end, bring it over the shoulder, and pin off to broad fold over the dressing.

Abdomen. **45.** Place the centre of a broad fold over the wound, and knot off on the side.

To apply the greater arm sling. **46.** Take a whole cloth, throw one end over the shoulder on the sound side, carry it round the neck so as to lie over the opposite shoulder ; place the point behind the elbow of the injured arm, allowing the other end to fall down in front of the patient ; bend the injured arm carefully, and place it across the chest on the middle of the bandage, thumb pointing towards the chin ; bring up the lower end in front of the forearm, and knot off to the end lying over the shoulder on the injured side ; draw the point forward round the elbow and pin off.

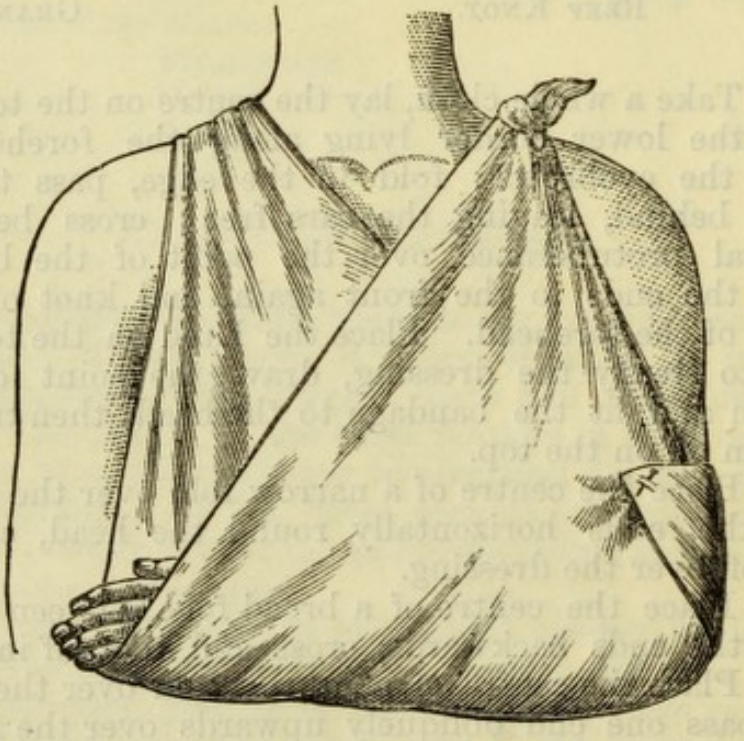


FIG. 14.—GREATER ARM SLING.

In broken collar bone. There is one exception to this method of applying the greater arm sling, viz., in fracture of the clavicle, where it is not advisable to allow anything to press on the injured bone. To avoid this, the lower end which is brought up in front of the forearm, should be passed between the arm and the side of the injured shoulder, and knotted off to the upper end behind the neck.

BANDAGES AND BANDAGING—continued.

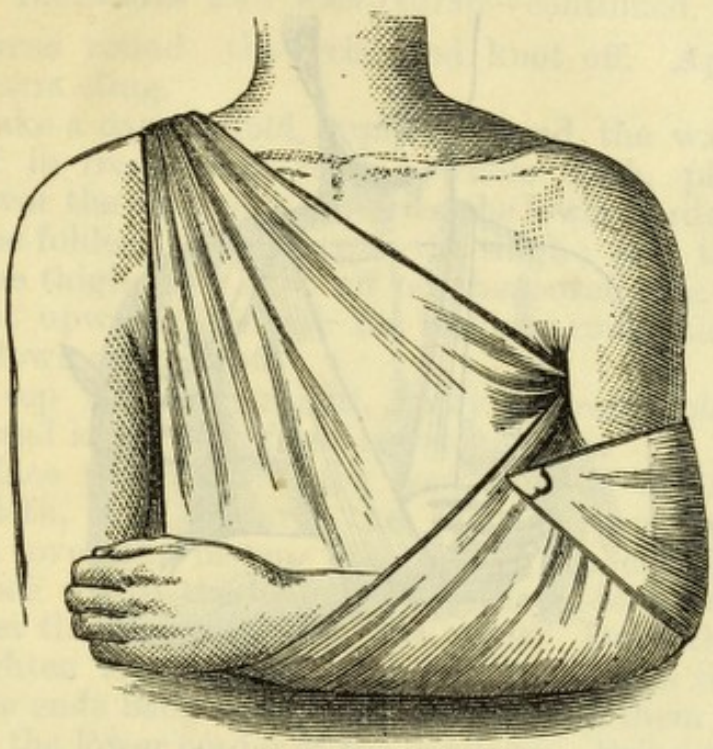


FIG. 15.

ARM SLING FOR FRACTURED COLLAR BONE (CLAVICLE).

To apply the lesser arm sling.

47. Take a broad fold, place one end over the shoulder on the sound side, carry it round the back of the neck so as to lie over the opposite shoulder, allowing the other end to fall down, bend the arm carefully and place the wrist across the middle of the bandage with the hand a little higher than the elbow, bring up the lower end, and knot off to the upper end over the shoulder on the injured side.

BANDAGES AND BANDAGING—continued.



FIG. 16.

SHOULDER BANDAGE AND LESSER ARM SLING.

To bandage the shoulder.

48. Lay the centre of a whole cloth on the top of the shoulder, point upwards, the lower border lying across the middle of the arm. Fold in the lower border, carry the ends round the arm, cross them, and knot off on the outer side. Apply the lesser arm sling, draw the point of the first bandage under the arm sling, fold it back on itself, and pin off over the shoulder.

Elbow.

49. Place the centre of a whole cloth over the back of the bent elbow, point upwards, turn in the lower border, pass the ends round the forearm, cross them in front, pass up round the arm, cross behind, and knot off in front. Tighten the bandage by drawing on the point which is then brought down and pinned off. Apply greater arm sling.

Hand.

50. Take a whole cloth, place the hand palm downward on the centre of the bandage, fingers towards the point, bring the point over the back of the hand to the wrist, pass the ends round the wrist, crossing them over the point, which is then folded towards the fingers, and covered by another turn of the bandage round the wrist. Knot off the ends in front of the wrist.

Or a figure of eight bandage, narrow fold, may be used. Place centre of bandage over dressing, bring ends round to opposite side of hand, cross and take two or

BANDAGES AND BANDAGING—continued.

three turns round the wrist and knot off. Apply the greater arm sling.

Hip. **51.** Take a narrow fold, apply it round the waist, and knot off in front, then take a whole cloth, place the centre over the hip, point upwards, the lower border which should be folded in lying across the thigh; pass the ends round the thigh, and knot off on the outer side. Draw the point upwards beneath the bandage round the waist, turn it down and pin off.

Knee. **52.** Keep the leg straight, apply a broad fold, cross behind, and knot off in front below kneecap.

Foot. **53.** Place the sole of the foot on the centre of a whole cloth, toes towards the point; turn the point upwards over the instep, take one of the ends in each hand close up to the foot; bring them forward, cross them over the instep covering the point. Draw the point up to tighten the bandage, and fold it towards the toes. Carry the ends back round the ankle, cross them behind, catching the lower border of the bandage. Bring the ends forward, cross them again over the instep, covering the point, carry them beneath the foot, and knot off on the inner side.

Other parts of limbs. **54.** When applied to any other part of the limbs, a broad fold is used, the centre of the bandage being placed over the dressing, the ends passed round the limb, and knotted off over the wounds.

Perinæum. **55.** Take a whole cloth, lower border uppermost, pass the ends round the waist immediately above the hips, and knot off behind, leaving one long end; pass the point between the legs, draw it upwards, and knot off to the long end behind.

To fix splints. **56.** Take a narrow-fold bandage, double it upon itself, and place the loop thus formed upon the splint on the outer side of the limb; pass the free ends round the limb from without inwards, and one of them through the loop; tighten the bandage by steadily drawing on the two ends, and then knot them in the usual way.

ROLLER BANDAGES.

Varieties of roller bandages. **57.** Roller bandages are made of calico, linen, flannel, some loose-woven material, gauze impregnated with some antiseptic, or elastic webbing. The rollers ordinarily in use for bandaging the head or limbs are made of calico and linen. Flannel bandages are used for special purposes, for warmth, or after inunctions. Loose wove

BANDAGES AND BANDAGING—continued.

bandages are used with plaster of Paris. Gauze bandages are used in antiseptic dressings. Elastic web bandages are used to support the circulation or exercise pressure on a limb.

Sizes of roller bandages.

58. Roller bandages consist of long strips, varying in length and width according to the part to which they are to be applied, thus :—

For the head and upper limbs, $2\frac{1}{2}$ inches wide, and from 3 yards to 6 yards long.

For the fingers, $\frac{3}{4}$ inch wide, and 1 yard long.

For the trunk and lower limbs, 3 or more inches wide, and 6 to 8 or more yards long.

They are tightly rolled on themselves in a compact form ready for use.

Practical instruction in rolling bandages.

59. The class will first be instructed in the proper methods of rolling a bandage, single-headed, and double-headed, and, at the conclusion of exercises given in accordance with paragraphs 60 to 66, the bandages will invariably be inspected, to see that each man hands his in properly rolled.

Application of a roller bandage.

60. To apply the bandage the operator stands opposite the patient. The limb is placed in the position it is to occupy when bandaged, and care must be taken that the bandage is not put on so tightly as to cause discomfort or swelling of the limb below. The roller is taken in the right hand when bandaging the left limbs and in the left hand when bandaging the right. The outer surface of the bandage is applied to the inner side of the wrist or ankle, and two turns taken straight round the limb from its inner to its outer side by the front.

Simple spirals.

From this point the bandage may be taken up the limb in *simple spirals*, that is, evenly put on turns of the bandage, each overlapping for one-third the width of the bandage, from below up, taking care to have the lower edges of the turns of bandage parallel with each other.

Reverse spirals.

When the swell of the limb is reached, the edges can no longer be maintained parallel, the bandage will not lie evenly, and gaps occur between the turns if the simple

BANDAGES AND BANDAGING—continued.

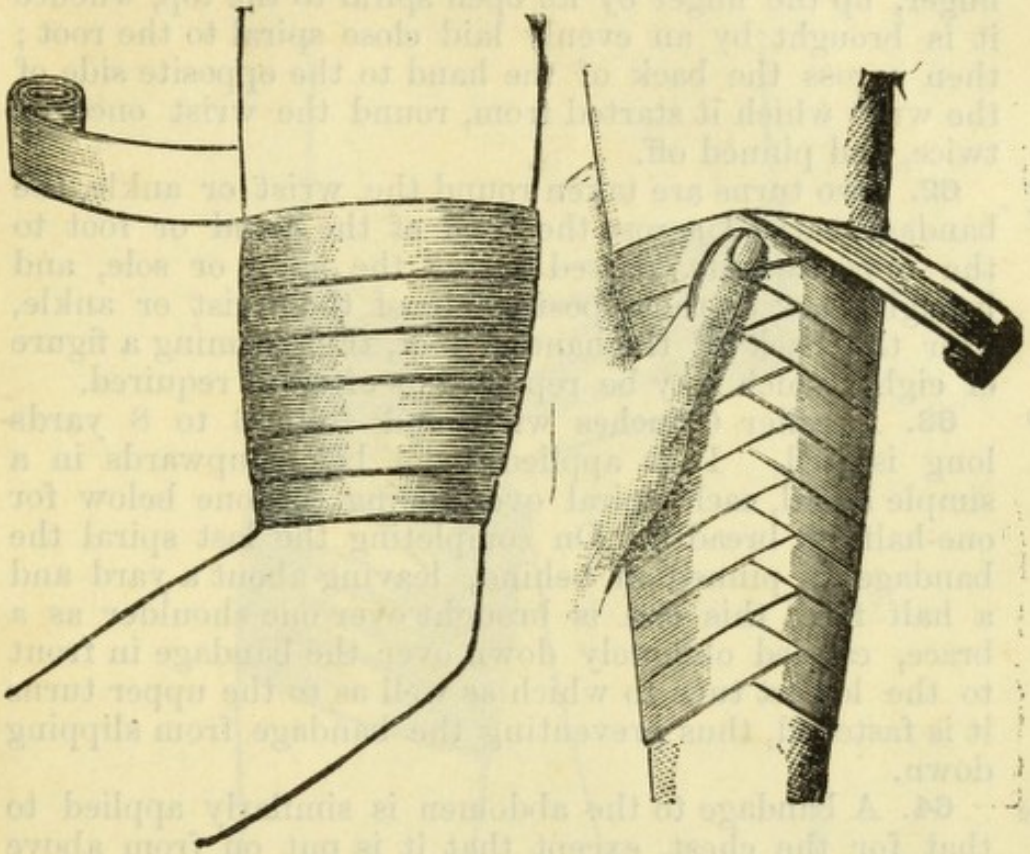


FIG. 17.—SIMPLE SPIRAL. FIG. 18.—REVERSE SPIRAL.

spiral is used. It therefore becomes necessary to use the *reverse*. To make the reverse, the thumb of the disengaged hand is placed on the lower border of the bandage on the outer side of the limb, the bandage is slackened and turned over, reversed, downwards, and passed round the limb to the opposite side, its lower edge parallel with that of the turn below. On reaching the outer side the reverse is again made, and so on up to the joint.

Figure of eight.

On reaching the joint, neither the spiral nor reverse will lie evenly, so that the *figure of eight* has to be resorted to. This, as its name implies, is applied by passing the roller obliquely round alternately upwards and downwards, thus making a figure of 8, each figure overlapping the one below by one-third the width of the bandage. The crossings of the figures should be kept in the same line as the reverses below.

Removal of a bandage.

To remove a bandage it should be unrolled from the top and the slack gathered into a ball and passed from hand to hand round the limb.

To bandage a finger.

61. Take two turns round the wrist, carry the bandage across the back of the hand to the root of the injured

BANDAGES AND BANDAGING—continued.

finger, up the finger by an open spiral to the top, whence it is brought by an evenly laid close spiral to the root; then across the back of the hand to the opposite side of the wrist which it started from, round the wrist once or twice, and pinned off.

To bandage the hand or foot.

62. Two turns are taken round the wrist or ankle, the bandage carried across the back of the hand or foot to the opposite side, passed across the palm or sole, and brought back to the opposite side of the wrist or ankle, over the back of the hand or foot, thus forming a figure of eight, which may be repeated as often as required.

To bandage the chest.

63. A roller 6 inches wide and from 6 to 8 yards long is used. It is applied from below upwards in a simple spiral, each spiral overlapping the one below for one-half its breadth. On completing the last spiral the bandage is pinned off behind, leaving about a yard and a half free, this end is brought over one shoulder as a brace, carried obliquely down over the bandage in front to the lowest turn to which as well as to the upper turns it is fastened, thus preventing the bandage from slipping down.

To bandage the abdomen.

64. A bandage to the abdomen is similarly applied to that for the chest, except that it is put on from above downwards, and that it is kept in position by the free end being carried from behind forward between the thighs and fastened in front.

To bandage the head.

65. To keep a dressing on an ordinary wound of the head a few circular turns of a bandage are sufficient. To exert pressure on a graduated compress applied over a bleeding wound (*see* para. 157) the *knotted bandage* is used. This is made with a single-headed bandage. The bandage should be unrolled for about a foot, and the end held in the left hand which is kept close to the temple; the roller is then carried round the forehead and occiput, so that it comes back to the unrolled end at the wound. At this point the roller is twisted round sharply and then carried down below the chin and round over the vertex. On coming to the temple again the same twist is made, and the roller is once more passed round horizontally; where sufficient pressure is obtained the bandage is fixed by knotting the two ends together.

The knotted bandage.

To bandage the groin, shoulder, or thumb.

66. A roller bandage may be applied to the groin, shoulder, or thumb in the following manner, which is known as the spica bandage.

The spica bandage.

It is made by applying the bandage in a series of figure of eight turns, overlapping from below up. Take two

BANDAGES AND BANDAGING—continued.

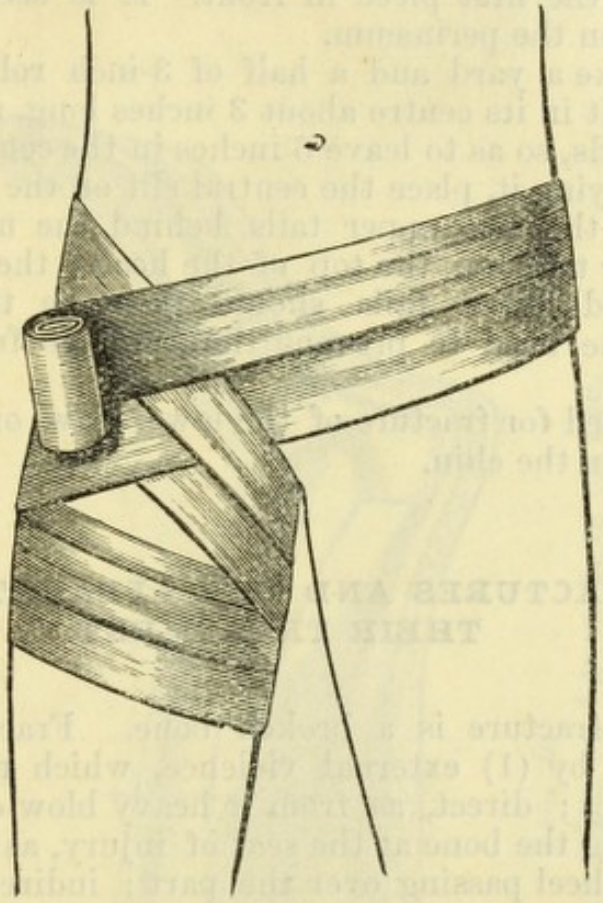


FIG. 19.—SPICA BANDAGE.

turns of a single-headed roller round the thigh, as a point of attachment, from within outwards, carry the bandage upwards over the groin above the hip, and round the back to the opposite hip, then across in front of the abdomen, passing round the outer side of the thigh and upwards between the thighs to complete the figure of eight. The turns are to be repeated as often as necessary.

SPECIAL BANDAGES.

67. This is specially prepared by taking a piece of bandage 3 inches wide and 1½ yards long and sewing to it another similar strip 1 yard long, so as to form a T. It is applied by passing the long strip round the hips so that the attached piece is at the sacrum, pin off in front. Bring up the short piece between the thighs and The T bandage.

fasten to the first piece in front. It is used to keep a dressing on the perinæum.

The four-tailed bandage

68. Take a yard and a half of 3-inch roller bandage, make a slit in its centre about 3 inches long, and then slit up the ends, so as to leave 6 inches in the centre.

In applying it, place the central slit on the point of the chin, tie the two upper tails behind the neck, and the two lower tails on the top of the head; the ends of the upper and lower tails should then be tied together behind the head to prevent the bandage from slipping forward.

It is used for fracture of the lower jaw or to retain a dressing on the chin.

4. FRACTURES AND THE APPARATUS FOR THEIR TREATMENT.

Definition and causes of fracture.

69. A fracture is a broken bone. Fracture may be produced by (1) external violence, which may be direct or indirect; direct, as from a heavy blow crushing and splintering the bone at the seat of injury, as by a bullet, or by a wheel passing over the part; indirect, when the bone is broken or snapped by the weight of the body falling on the limb, as when a man, falling on his shoulder, breaks his collar bone. (2) Muscular action. A bone may be broken by the sudden violent contraction of a muscle, as seen in fracture of the knee-cap in jumping.

Simple fracture.

70. Fractures may be simple or compound. In simple fracture the bone is broken without any serious injury to surrounding parts.

Compound fracture.

In compound fracture the soft parts are torn through, so that the fracture communicates by a wound with the open air.

Comminuted fracture.

When the bone is broken into several pieces the fracture is said to be comminuted.

FRACTURES AND TREATMENT—continued.

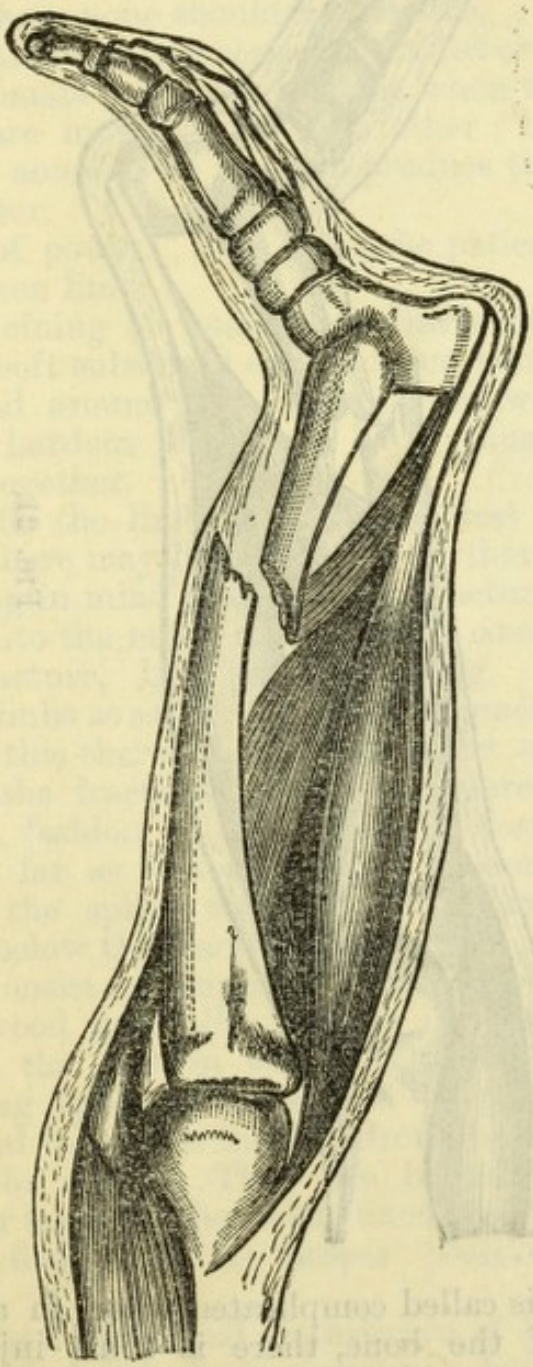


FIG. 50.
SIMPLE FRACTURE OF TIBIA OR LARGE BONE OF LEG.

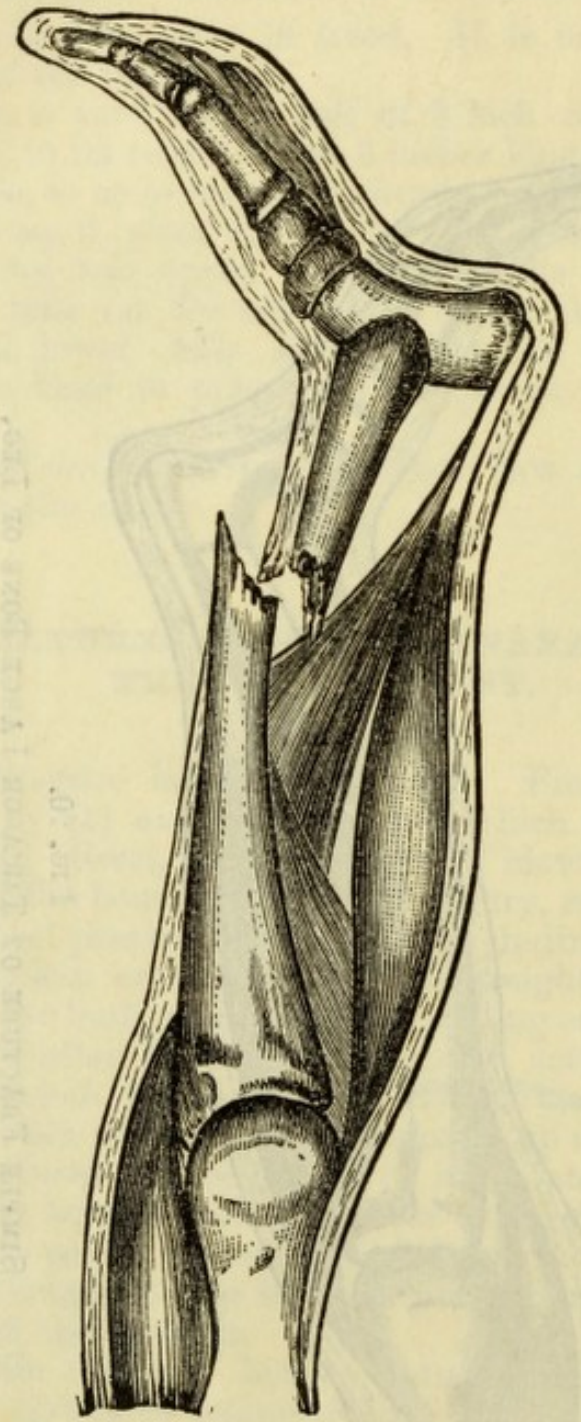


Fig. 21.
Compound Fracture of Tibia or Large Bone of Leg

Complicated fracture.

The fracture is called complicated when, in addition to the breaking of the bone, there is some injury to an important organ, or blood vessel, or when the fracture extends into a joint.

Signs of fracture.

71. The signs of fracture are :—

(1) Change in the shape of the limb as compared with the sound limb, the result of the altered position of the broken ends of the bone. This altered position of the fragments is caused either by the force of the blow, as in

FRACTURES AND TREATMENT—continued.

depressed fractures of the skull, or by muscular action, as shown in fig. 21.

(2) Unnatural mobility, that is, motion similar to that of a joint where none should be possible.

(3) A peculiar grating sensation, called *crepitus*, which is felt by the hands grasping the bone when the ends of the fragments are moved upon each other; but no attempt will, on any account, be made to produce this except by a medical officer.

(4) Loss of power. As a rule, the patient is unable to use the broken limb.

Mode of repair.

72. The joining or *union* of a fractured bone is produced by a soft substance called callus being thrown out between and around the broken ends, which substance eventually hardens into new bone, thus soldering the fragments together.

Immediate measures to prevent further injury.

73. Handle the limb with the greatest gentleness, in order that there may be no risk of further injury to the part, bearing in mind that a simple fracture may easily be converted into the much more serious compound, or complicated fracture, by rough handling. Apply splints round the limbs so as to render the fragments immovable.

In doing this there need be no effort made accurately to replace the fractured parts, but merely in a general and gentle fashion to reduce the deformity and give support, as far as this may easily be done. To do this effectually the splint should extend beyond the joints above and below the fracture.

Splints.

Splints consist of supports made of some unyielding material, wood generally, varying in length, width and shape with the part to which they are to be applied. Before being applied they should be padded with some soft material to protect the limb from the hard surface and edges of the splint. They are bound to the limb by bandages or tapes, so that when fixed the limb is protected and held firmly in its proper position. (Refer to para. 87.)

Moving a patient suffering from fracture.

In moving a patient all disturbance of the limb should be prevented as much as possible. In the upper extremity the arm may be supported in a sling and tied to the side. In the lower extremity the limbs may be tied together at the knees and ankles.

Subsequent treatment.

74. The subsequent treatment of fractures, that is, the setting of the bones and final application of the splints is carried out by the officers; but it is necessary that the men should be familiar with the apparatus in

general use in military hospitals, in order that they may render intelligent assistance.

Apparatus required for various fractures.

75. The apparatus contained in the boxes described in paras. 152 and 153 will be shown and explained by the Instructor. The following eleven paragraphs describe the apparatus required for the treatment of various fractures.

Fracture of lower jaw.

76. The apparatus required for making a gutta-percha splint, viz.: A sheet of gutta-percha, lint, a knife, cold water, boiling water in a wide basin, and a four-tailed bandage.

Fracture of ribs.

77. Adhesive plaster, scissors, a can of hot water, and a roller bandage (8 yards × 6 inches).

Fracture of collar bone.

78. An axillary wedge-shaped pad (6×4×2 inches) with two tapes attached (2 feet long), and two 8-yard bandages.

Fracture of arm.

79. Either four wire splints, four of Duncan's ratan cane splints, or the jointed elbow-splint, together with suitable pads, roller bandages for fingers, fore-arm, and arm, and an arm-sling.

Fracture of fore-arm.

80. A pair of fore-arm splints (wire), or a pair of cane splints, with suitable pads, roller bandage, and arm-sling.

Fracture of radius.

81. A radius or pistol splint (wire) and pad, roller bandage, and arm-sling.

Fracture of thigh.

82. The jointed wooden thigh splint, and pad. Three short cane, or wire splints and straps; cotton wool; a perineal bandage (made by folding a triangular bandage narrow, padding it along the centre with cotton wool, and covering it with oil silk), roller bandages, and a wire cradle.

Fracture of leg.

83. Either McIntyre's double-inclined plane (fig. 22), with pads, straps, roller bandages and cradle, or a pair of japanned leg or wire leg splints, with suitable pads, straps, roller bandages, and Salter's sling and cradle.

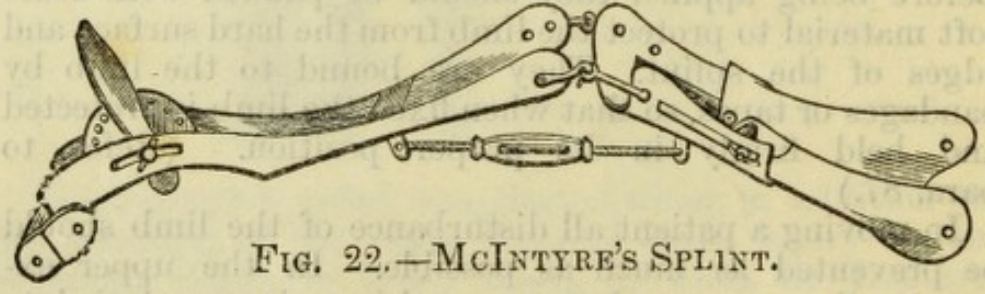


Fig. 22.—McIntyre's Splint.

Fracture of fibula.

84. Either Dupuytren's splint and wedge-shaped pad (2 inches at thick end), or Pott's wood or wire splint and pad, and a roller bandage 4 yards × 2 inches.

Plaster of Paris splint.

85. A supply of plaster of Paris. Loose woven bandages, or flannel sufficient to envelop the limb loosely twice over. Large pins (3″ long), cold water, basin, spoon, scissors, needle, thread, and gypsum bandage

instruments. Plaster of Paris should be used fresh, as if kept for some time it will not set, though this may generally be remedied by heating the plaster on a shovel over the fire for a few minutes, so as to dry it thoroughly without burning it. The plaster should be mixed with sufficient cold water to bring it to the consistence of a thick cream, free from lumps or grittiness.

Starch bandage splint.

86. A supply of starch, or dextrine, roller bandages, cotton-wool, pasteboard in sheets, boiling water, Seutin's scissors, and a wooden splint.

Improvised splints.

87. On the battlefield, or in cases of emergency specially made splints may not be at hand, and it therefore becomes necessary to contrive an apparatus which shall take their place. Such splints are called improvised splints.

How made.

They may be made of any firm unyielding substance which may be at hand, such as sticks, telegraph wire, bark of trees, stiff paper folded, bundles of twigs, rushes, or straw, portions of a soldier's equipment such as rifles, bayonets, swords, lances, &c.

How applied.

They may be padded with grass, straw, heather, leaves, or articles of clothing, and the straps of the soldier's equipment may be utilised as bandages or slings. The triangular bandage is used to secure improvised splints, in the manner described in paragraph 56.

To use a rifle splint for a fractured thigh.

88. The following are the rules for the application of a rifle splint (Fig. 23). See that the rifle is not loaded. Place it on the side of the injured limb, butt in the arm pit trigger guard to the front. Place a pad in the arm pit. Take a narrow fold bandage, place its centre over the ankle of the injured limb, pass the ends behind, enclosing muzzle of rifle, cross behind. With the outer end take a turn round the muzzle in front of the sight or D for sling, bring both ends up, cross over instep and tie off on the inside of the foot. Take a narrow fold, place its centre on the perinæum, bring one end out behind the other in front of the limb, cross the ends through the trigger guard, take a turn round the small of the butt just above the trigger guard and tie off. Take two long splints, place one on the top and the other along the inner side of the thigh and fix at each end by a narrow fold bandage tied off over the rifle. Take a broad fold bandage, place the centre over the butt of the rifle, pass the ends round the body, and tie off on the opposite side. Tie the patient's legs together by placing the centre of a broad fold over both ankles, pass the ends behind, cross, bring up and tie off on top between the legs.

FRACTURES AND TREATMENT—continued.



Fig. 23.—RIFLE SPLINT.

5. DISLOCATIONS.

89. A dislocation is the displacement of the end of a bone at a joint. It is often spoken of as "putting a bone out of joint." The signs of dislocation are :—(1) alteration in the shape of the joint, (2) the end of the displaced bone can be felt through the skin, (3) alteration in the length of the limb, (4) inability to move the joint. Definition and signs of a dislocation.

90. The only treatment that is to be undertaken before the arrival of the officer is to support the limb in the position easiest to the patient. Immediate treatment.

6. SPRAINS.

91. The straining or tearing of the ligaments, from the sudden twisting or wrenching of a joint, is called a sprain. The signs of a sprain are pain, heat, and swelling in the joint immediately following the injury. Definition and signs of a sprain.

92. The treatment consists in keeping the part at rest ; if the upper limb, by supporting it in a sling, if the lower, by putting the patient to bed. Cold evaporating lotions should be applied to the part, or, if these cannot be borne, hot fomentations. Immediate treatment

7. WOUNDS.

93. A wound, which may either be simple or poisoned, is an injury of the body in which there is division of the skin, and is characterised by bleeding and pain. Wounds may be classed as follows :— Definition of wound.

Incised, produced by a sharp cutting instrument as a razor or sword, and characterised by its gaping, clean cut edges. Incised wounds.

Lacerated, as might be produced by the claws of a cat or sharp nail, characterised by its ragged torn edges. Lacerated wounds.

Contused, produced by a heavy blunt instrument as a hammer or stick, or a blow of the fist, characterised by its bruised edges. The wound produced by a bullet is generally classed as a contused wound. Contused wounds.

Punctured, produced by a narrow, sharp pointed instrument such as a bayonet or prong of a pitchfork, characterised by its greater depth as compared with its outer opening. Punctured wounds.

WOUNDS—continued.

Immediate treatment.

94. The treatment of a simple wound consists in arresting the hæmorrhage, cleansing the part and applying a dressing.

Poisoned wounds.

95. A poisoned wound is one into which some poison has been introduced. It may be of any of the above varieties and is treated constitutionally as well as locally.

Local treatment.

96. Firstly, to prevent the poison spreading beyond the wound, by tying a string tightly round the part, if possible, immediately above the wound, between the wound and the heart; secondly, to remove the poison from the part by suction, or by burning or cutting out the flesh immediately around the wound. In less severe cases, as the stings of small insects, the treatment is to allay irritation by applying aromatic spirits of ammonia.

Constitutional treatment.

97. In cases of snake bite it is often necessary that stimulants, such as brandy, ether, or aromatic spirits of ammonia, should be administered freely at once, or artificial respiration resorted to (*see* paragraph 168). For other cases of poisoned wounds, such as post mortem wounds, and bites from rabid animals, special constitutional treatment is undertaken by the officer.

8. DRESSINGS AND THEIR APPLICATION.

Materials used.

98. Dressings are local applications used in the treatment of wounds and sores.

The following are the materials usually required for dressings:—lint; adhesive and soap plaster; hot water can; oiled silk; gutta-percha tissue; cotton wool (simple and medicated); tow; bandages; dressing case; dressing trays, basin, irrigator and waterproof sheet.

The Instructor should show and thoroughly familiarise the class with the appearance and use of these materials.

Rules to be followed in applying dressings.

99. When about to apply dressings, the following rules will be observed:—

(1) The dresser will be careful that his hands and nails are perfectly clean.

(2) Never begin to change a dressing until everything that is likely to be required for the new dressing is ready close at hand.

DRESSINGS AND THEIR APPLICATION—continued.

(3) Never attempt to remove by force a dressing which has become adherent, this must first be loosened by bathing with tepid water.

(4) Never employ a sponge for washing a wound or sore, but use fresh clean pieces of cotton wool or lint, and subsequently destroy them.

(5) The dresser will avoid touching his eyes, nose, or any sore with his hands or anything which has been contaminated by contact with the discharge.

Mode of changing a dressing.

100. The different parts of the old dressing will, one by one, be very gently and carefully removed, those that are adherent being first softened and loosened by the aid of tepid water. If a roller bandage has been used, it will be unpinned and wound off the limb, the slack being gathered up and passed from one hand to the other. After the dressings have been removed, the parts will be washed with a gentle stream of tepid water. When removing strips of plaster immediately overlying the wound, one end should first be raised as far as the wound, and then the other, so as to avoid tearing it open. If so directed olive oil may be used to remove the marks of old plaster. If the patient be confined to bed, measures will first be taken to protect the bed-clothes from damp by covering them over with a waterproof sheet, and by arranging an empty vessel under the wound or ulcer so as to catch the waste water. A vessel containing tepid water—a basin or irrigator, as the case may be—is next held on a higher level than the patient, and the parts bathed with a piece of fresh cotton wool, or flushed by a stream from the irrigator to the requisite extent. This having been accomplished, the surrounding parts will be thoroughly dried with a piece of cotton wool, the new dressing applied, and the old dressings burned. (*See* para. 192.)

Dry dressing.

101. Dry dressing is generally used as the first application to incised wounds. It consists of adhesive plaster and dry lint, or absorbent or medicated cotton wool, and is thus applied:—narrow strips of plaster are cut in the length of the web and warmed by holding the non-adhesive side against a hot water can, and with these the edges of the wound are brought together; over these is then placed a pad of antiseptic cotton wool, kept in position by a few turns of bandage or else a couple of folds of dry lint, retained by strips of plaster. Dry dressing is generally allowed to remain on for two or three days before it is removed.

DRESSINGS AND THEIR APPLICATION—continued.

Wet dressing.

102. Wet dressing is used for the purpose of keeping warmth and moisture continuously applied to a part. It consists of a double fold of lint saturated with pure water, medicated lotion, or antiseptic solution, with the excess of fluid squeezed out. This is applied to the part and covered with waterproof material, such as oiled silk or gutta-percha tissue, to prevent evaporation. The lint should be cut according to the size of the wound or ulcer, and the waterproof material so as to be a little larger in every direction than the lint, as, if the lint project beyond the edge of the waterproof covering, the moisture will escape and the lint become dry and adherent. Wet dressing should usually be renewed at least twice in the twenty-four hours, or oftener if there be much discharge.

Evaporating dressing.

103. As evaporation causes reduction of temperature, this form of dressing is used to keep cold continuously applied to a part. It consists of a single layer of lint, saturated with water, or evaporating lotion, placed over the part, which should be freely exposed to the atmosphere to favour evaporation.

The lint should be kept constantly wet. This may be effected either by re-dipping the lint in the water or lotion from time to time as it begins to dry, or, as must be done where the wound is extensive or inflamed, by keeping it moistened by irrigation, that is, by conducting a trickling stream over it. The simplest plan of irrigation is by placing a basin or bottle containing water near, but on a higher level than the patient's bed ; from this a skein of worsted, one end in the water and the other laid on the piece of wet lint covering the part to be irrigated, conducts the water to it in a trickling stream, and in this manner keeps it constantly wet. A waterproof sheet must be spread over the bed-clothes to protect them from damp, and so arranged that the excess of water may be conducted along a channel into an empty vessel placed by the side of the bed to receive it.

Irrigation of a wound.

Ointment dressing.

104. Ointment dressing consists of lint upon the dressed side of which a thin layer of ointment has been spread by means of a spatula ; the edges of the lint having been trimmed to the required shape, it is applied to the part, maintained in position by cross strips of adhesive plaster, and, if necessary, by a few turns of a bandage. As a rule it is not renewed oftener than once a day.

Antiseptic dressing.

105. The main cause of the irritation of wounds is generally believed to be due to the presence of exceedingly minute living bodies or germs, which, floating in the

DRESSINGS AND THEIR APPLICATION—continued.

air, readily find their way into wounds. The object of the antiseptic treatment is to destroy these bodies, or prevent their entrance into a wound, and its success depends upon the completeness with which not only those inhabiting the air in the vicinity of the patient, but also those which have deposited themselves on the dresser's hands, the dressings, and in point of fact everything which may be brought in contact with the wound, and which may give rise to the infection of the wound, are destroyed. This it is endeavoured to accomplish by the use of chemical substances called antiseptics, the chief of which are corrosive sublimate, carbolic, boracic, and salicylic acids.

Antiseptic dressings which are applied by the officer himself, require to be changed before the least trace of discharge reaches the surface. It consists of the following articles :—

Protective tissue (green oil silk).

An antiseptic gauze jacket consisting of eight folds of antiseptic gauze, having a layer of pink mackintosh between the seventh and eighth folds, glazed surface towards the seventh fold.

Antiseptic gauze bandages.

Antiseptic lotions :—

Carbolic acid, 1 in 40 and 1 in 20.

Perchloride of mercury (sal alembroth), 1 in 3,000.

Antiseptic cotton wool is frequently used in the place of the jacket and may be impregnated with boracic acid which is coloured pink, sal alembroth which is coloured blue, salicylic acid, or other antiseptic substances.

During the dressing of the case a guard, a piece of lint, soaked in the antiseptic solution, sufficiently large to overlap the injured part, is applied over the part, after the old dressing is removed, and while dressings are being prepared.

All instruments used, such as scissors, forceps, knives, &c., must be placed in carbolic solution till actually required. They must on no account be placed in perchloride of mercury solution as they will be corroded by it.

Necessity of cleanliness.

As absolute cleanliness is necessary to ensure the success of this dressing, it is imperative that ward orderlies and all persons having anything to do with the dressing of the case should wash their hands thoroughly, and render them as nearly aseptic as possible by bathing them in the solution previous to dressing the case.

DRESSINGS AND THEIR APPLICATION—continued.

Strapping.

106. Strapping is a form of dressing, simple or medicated, which is applied to a part with a view to exerting pressure on it. Strips of plaster, adhesive, soap, or medicated, are employed for strapping. They should be cut in the length of the web of plaster, to measure 1½ inches in width, and at least 6 inches longer than the circumference of the limb at the point of application. The strips should be applied from below upwards, and each strip made to overlap the one preceding it to the extent of one-third of its width. A roller bandage is then applied over all.

First field dressing.

107. In a War Office Circular of May 27, 1855, it was announced that "The Secretary of State for War has decided that a Field Dressing shall form a component part of every British soldier's kit on active service, so as to be available, at all times and in all places, as a first dressing for wounds."

When a soldier goes on active service the first field dressing is sewn into a pocket on the inside of the skirt of his jacket, and thus the quantity of material required to be carried as medical stores is greatly reduced.

In 1884 a first field dressing was introduced composed of two pads of carbolised tow, a carbolised gauze bandage, and a triangular bandage enclosed in a tinfoil wrapper and outside parchment cover.

In July, 1891, a new field dressing was introduced, and the pattern sealed and deposited in the Pattern Room of the Army Clothing Department.

It is an adaptation of that used in the French service and consists of:—

Outer cover (sewn cloth).

Two safety pins.

Inside cover (thin waterproof, cemented, air tight).

Thin waterproof (mackintosh) folded over dressings (size 12 inches by 6 inches, to be torn in half if required).

Gauze bandage 4¼ yards long, folded flat into 2½ inches by 4 inches.

Piece of gauze, 17 inches by 13 inches, weight not less than 3 pennyweights, folded to suit the size of the package.

Compress of compressed charpie to be of flax between layers of gauze (like Gamgee's dressing), capable of being teased out into a thick pad.

Minimum weight of charpie, 155 grains; maximum weight, 165 grains. The antiseptic agent used is corrosive sublimate, 1 in 1,000.

DRESSINGS AND THEIR APPLICATION—continued.

Directions for use are printed upon both the outside and inside cover.

When the first field dressing was originally introduced it was considered an article of equipment. (See List of Changes in War Matériel, 4584, December 1, 1884.) From April 1st, 1889, it ceased to be an Ordnance supply and became an article of clothing. (*See* Army Orders 214 and 219 of 1889.)

Field dressing an article of soldiers' clothing.

9. MEDICINES AND EXTERNAL REMEDIES.

108. Medicines, dispensed at the surgery, are labelled with :—

Administration of medicines.

The name of the patient for whose use the medicine is intended.

The directions for use, and the date of prescription.

Poisons and medicines intended for external use have special labels (see Standing Orders 28–29).

Those entrusted with the administration of a medicine should bear in mind that it is criminal to give a dose to a patient without first carefully reading the label. If this be not done an overdose may be given, or poisonous drugs intended for external use may be given internally, often leading to the death of the patient, and the consequent punishment of the attendant.

As a general rule, a bottle of medicine should be shaken before pouring out its contents. The label side should be uppermost when a dose is being poured out, in order that the label may not be soiled or destroyed. The bottle should not be left uncorked longer than is absolutely necessary, as if the active principle be volatile it is thus lost; for the same reason the dose should be swallowed as soon as possible after it is poured out.

Patients should not be roused from sleep for the purpose of taking medicine, except when the officer has expressly so ordered.

No small display of tact on the part of the attendant will sometimes be necessary in order to induce refractory patients to consent to swallow their medicine; on these occasions the attendant will not fail to remember that gentleness as well as firmness are required of him, and on no account must he treat the patient roughly.

109. The following are the usual forms in which medicines are prescribed :—

Various forms of medicines.

110. Medicine in liquid form, administered internally by the mouth, made up in several doses, varying

Mixture.

MEDICINES, &c.—continued.

from drops to wine-glassfuls. The exact dose should be measured in a graduated glass measure, and only when the use of such a glass is not available should medicine be measured in a spoon or wine-glass. The subjoined table will assist in the use of these measures :—

Fluid measures.

1 drop	.... = 1 minim	.... =	♏j
60 minims	.... = 1 drachm	.... =	ℨj
8 drachms	.... = 1 fluid ounce	=	ℨj
20 fluid ounces	.... = 1 pint	.... =	Oj

A tea spoon is calculated to hold about 1 drachm, a dessert spoon about 2 drachms, a table spoon 4 drachms, and a wine glass 2 ounces.

Draught. 111. Medicine in liquid form, made up as a single dose—that is, the whole to be taken at once. Draughts vary in quantity from one to two or more ounces. Draughts of castor oil are usually administered floating on peppermint water or warm milk.

Pill. 112. Medicine in solid form, made up in a small round mass, and intended to be swallowed whole. Pills are best administered by placing them, one at a time, on the patient's tongue and then giving him a mouthful of water to swallow, which generally carries the pill down along with it ; when any further difficulty arises the pill may be enclosed in a crumb of bread, and then washed down with a mouthful of water. Care should be taken that the lids of pill boxes do not get transferred from one box to another.

Powder. 113. Medicine in solid form, made up loosely, in a paper packet. When small, the contents of the paper are to be placed on the back of the tongue and washed down with water ; when larger, the powder should be mixed with water in a mug or tumbler, stirred up with a spoon, and given without delay to the patient to drink.

Seidlitz powder. A Seidlitz powder consists of two parts, a large and a small powder ; the contents of the larger package are to be placed in a large tumbler with 6 ounces of water and stirred ; the contents of the smaller, dissolved in 4 ounces of water in another tumbler, are then to be added, and the whole again stirred and drunk off while effervescing.

Bolus. 114. Medicine in solid form, made up as a soft mass, and generally dispensed on paper. It should be scraped off the paper, placed on the patient's tongue, and washed down with a mouthful of some fluid.

Electuary. 115. A medicine in semi-solid form, made up with molasses or honey, and dispensed in a mug or pot.

MEDICINES, &c.—continued.

116. A medicine in liquid form, given by the mouth, followed by the administration of large draughts of tepid water. Its object is to produce vomiting. A tablespoonful of mustard or salt mixed with warm water is a safe and easily-obtained emetic. **Emetic.**

117. A medicine in fluid form used as a wash for the mouth and throat. A tablespoonful is to be taken into the mouth, the head then thrown slightly back, and the fluid set in motion by breathing through it, at the same time taking care not to swallow any; this is to be repeated at least twice on each occasion. **Gargle.**

118. A medicine in the form of vapour which is drawn in with the breath—inhaled. The medicine to be inhaled is put into a vessel called an inhaler, which is then filled up with one part of cold water and two parts of boiling water. The patient inhales the vapour arising from the vessel through the tube placed at the top. **Inhalation.**

119. Medicine or nourishment in fluid state, which is thrown up into the rectum or lower bowel, through the anus, by means of a syringe. Enemata vary in quantity from one to twenty, or more ounces, according to the purpose for which the enema is intended; nourishing enemata (beef tea, brandy, &c.) and those prescribed to allay pain, are usually small in amount, while on the other hand those intended to clear out the contents of the bowel are large. The syringe will invariably be tested before it is used to see that it is in working order, and the enema heated to a temperature of 98° Fahr. **Enema or injection for bowels.**

To give an enema :—The foot of the bed on which the patient lies should be raised about 18 inches and the patient placed on his left side, his hips brought to the edge of the bed, and a waterproof sheet placed beneath him. The pipe of the apparatus, having been well oiled, will be carefully passed up the anus for a distance of two inches, and the fluid injected slowly into the bowel. The patient must be directed to resist the inclination to strain which follows, and he may be aided by keeping a folded towel pressed against the anus. The patient should not be uncovered more than is absolutely necessary, and, if available, a screen should be put round the bed. When an aperient enema is given a night-stool should be placed conveniently in readiness. **Administration of an enema.**

120. Medicine mixed up with lard and wax, of a conical form, which is introduced into the lower bowel by the anus. The patient should be in the position already described for the introduction of an enema, except that the foot of the bed need not be raised. **Suppository.**

MEDICINES, &c.—continued.

Lotion. **121.** Medicine in fluid state, used as an external application. Except in the case of evaporating lotion the quantity required for immediate use should be poured into a gallipot, and the lint required for the dressing saturated in it.

Injection. **122.** A medicine in fluid form used for washing out the urethra, the ear, or any other cavity, by means of a syringe.

Urethral injection. A patient will be instructed to use an injection for the urethra as follows: Having placed a chamber utensil on a chair in front of him, or, if in bed, between his thighs, he will first make water, so as to clear away all discharge from the urethra, then fill a syringe with the injection; place the forefinger of the right hand in the ring on the head of the piston, and hold the barrel firmly with the thumb and remaining fingers. Then holding the penis with the fingers and thumb of the left hand, he will insert the pipe of the syringe into the urethra, where it is held by the fingers of the left hand, and slowly press down the piston. When the injection has passed into the urethra the syringe will be withdrawn, and the injection, after having been retained for a few seconds by keeping up pressure with the fingers and thumb on the urethra, allowed to escape into the chamber utensil.

Collyrium or eye wash. **123.** Medicine in fluid form used as a wash for the eyes. It is applied either by means of a vessel called the eye bath, or an apparatus, the eye douche.

Every patient using an eye lotion must have his own appliances, and retain them exclusively for his own use.

Eye drops **124.** Medicine in fluid form dropped into the eye. It is applied by means of a quill cut the shape of a penholder, and a small hole made at the upper part of the barrel. To charge the quill: the quill is introduced into the bottle of eye-drops, and the fore-finger placed over the small hole; it is then withdrawn, and a portion of fluid with it. To introduce the drops into the patient's eye: throw the patient's head slightly back, draw the lower lid downwards with the fingers of the left hand; now holding the end of the charged quill over the outer side of the eye, the attendant will allow air to enter the barrel by the small hole until the required number of drops have fallen into the eye.

Liniment. **125.** Medicine in fluid state applied to a part by rubbing. To apply a liniment: Pour out a small quantity in the palm of the hand, and rub it over the part affected until the liniment is absorbed. This will be repeated for

MEDICINES, &c.—continued.

the required length of time. As many liniments contain irritating substances, care should be taken that they are not brought in contact with the eyes or any tender surface.

Liniments which are not rubbed in.

Some liniments, as for example iodine, instead of being rubbed in, are painted on the part with a camel-hair brush, or with a small piece of cotton wool twisted on the end of a small stick.

Inunction.

126. Medicine in the form of an ointment rubbed into the skin. A piece of ointment the size of a bean is to be rubbed into the skin, as ordered, with the palm of the hand, gentle and steady friction being continued until the ointment is exhausted; a few turns of a flannel bandage may then be passed round the part so as to protect the bed-linen and favour absorption.

Caustic.

127. Medicine applied externally with a view of destroying unhealthy tissues. The caustics most commonly in use are nitrate of silver (lunar caustic), nitric acid, potassa fusa, and sulphate of copper (blue stone).

Lunar caustic.

Sticks of nitrate of silver are kept for use in quills, or caustic-holders. This caustic should be cleaned with a damp rag, and dried with a piece of lint or paper after being used, and should not be placed in contact with any metal, as such decomposes it, nor should it be allowed to touch linen, or the hands, as it produces a dark stain. It is occasionally necessary to point a piece of caustic. To effect this, it should be rubbed on wet lint until it is pointed, but it should not be cut or scraped.

Nitric acid.

Nitric acid is generally applied by means of a glass brush or a piece of wood, one end of which is pared off thin and flat.

Blue stone.

Sulphate of copper (or blue stone) is used in crystals. The crystal should be ground on a fine stone to a chisel point, and tied in a cleft cut in the end of a piece of wood. It should be wiped clean after use.

Poultices.

128. Poultices are made of various materials, and the following is the mode of preparation of those most commonly used :—

Linseed poultice.

129. Mix 4 ounces of linseed meal gradually with half a pint of boiling water, or proportionate quantities according to the size of poultice required, by stirring in a previously warmed basin. Some tow, neatly teased out, of the required size, is placed on a table, the poultice is turned out upon this and spread out with a spatula in a layer half an inch thick, leaving a margin of tow uncovered about an inch in width.

MEDICINES, &c.—continued.

Care should be taken not to apply it too hot to a tender surface. Unless otherwise ordered this poultice should be renewed every two hours.

Bread poultice.

130. Pour boiling water on bread crumb; let the vessel stand by the fireside for five minutes, then strain off the water and beat the whole up, and treat in the same manner as linseed meal poultice just described.

Mustard poultice.

131. Mix 2½ ounces of linseed meal gradually with half a pint of boiling water; then add 2½ ounces of mustard, constantly stirring; then spread on tow in the same manner as a linseed meal poultice. A mustard poultice should be kept on until the skin is thoroughly reddened, but not long enough to produce a blister.

Charcoal poultice.

132. Take half an ounce of charcoal, two ounces of bread-crumb, and an ounce and a half of linseed meal, and half a pint of boiling water. Soak the bread in the boiling water by letting it stand for ten minutes near the fire. Add the linseed meal gradually. Mix this with half the charcoal, spread on tow, and sprinkle remainder of charcoal on the surface of the poultice.

Mustard plaster.

133. To make a mustard plaster, mix some fresh mustard powder into a paste with cold water, and spread the paste in an even layer on stiff brown paper of the required size. This is then to be applied to the part, smoothed over, and pressed to the skin with the hand. It is allowed to remain on for a quarter of an hour, and, if the mustard is good, a burning sensation is produced, and the skin is reddened. After the plaster is removed, any mustard adhering to the skin must be washed off; this inconvenience may be obviated by laying a piece of thin tissue paper, or of fine muslin over the mustard plaster when prepared, so as to intervene between the mustard and the skin.

Mustard leaf.

134. A mustard leaf is frequently used in place of a mustard plaster. Before application it must be moistened with cold water.

Blister.

135. A blister is made by spreading blistering plaster to the size ordered, upon stiff brown paper, or adhesive plaster, leaving a margin of at least half an inch. It is applied to the part in order to produce vesication or watery blebs, and so to act as a counter-irritant. To apply it, the plaster is held for a moment before the fire, if in cold weather, then laid on the skin, and a few strips of adhesive plaster

laid over it to retain it in position and prevent it slipping. A bandage may be loosely applied over the whole for greater security, but should not be so tight as to prevent the plaster being raised by the accumulation of fluid in the blebs underneath it.

Dressing a blistered surface.

Unless directions be given to the contrary, the blister should be removed and the part dressed after a lapse of twelve hours. The bandage and strips of plaster being loosened, the blister is gently raised from one side and removed. Several openings are then made in the blebs with a pair of scissors, a vessel having been placed in a position to receive the fluid which escapes. This done, a dressing of simple ointment (paragraph 104) is applied, and renewed twice or three times daily until the surface is healed.

To keep a blister open.

If orders are given not to allow the blistered surface to heal up at once—in other words, to keep it open—the old skin should be completely removed, and such other ointment dressing as may be ordered will be substituted for simple ointment dressing. This will be continued until orders are given to allow the sore to heal, when simple ointment is to be applied as first described.

Blistering fluid.

136. Blistering fluid is painted on the part with a camel hair brush, and the blister made is subsequently treated as above.

Leeches.

137. Leeches are employed to draw blood locally. Some little skill is necessary in their application, otherwise they will not bite. The part to which they are to be applied should first be washed thoroughly clean with warm water and soap, then with clean cold water, and lastly well dried. The leeches before being applied should be well cleaned and dried between the folds of a soft cloth ; and when they are to be applied to the mouth, or where the temperature is high, it is recommended to put them into tepid water for a few minutes. To apply them, the box containing them may be inverted over the part, and the leeches, thus confined, readily bite if the part has been properly prepared.

Another very ready method of applying them is first to place the number intended to be used in a hollow in a towel folded like a napkin, then to turn the towel, with the leeches in the hollow, upon the part prepared for their reception, and thus with the towel over them confine them with the hand until they bite, when the towel may be removed. Each leech may also be taken in the fingers and its head directed towards the spot where it is wished to bite,

and in this way it will often take hold when all other methods have failed.

If either of these methods cannot be pursued, as when it is necessary to apply them in the mouth or other cavity, or to confine them to a very small space, a glass tube, into which each leech is put separately with its head towards the small end, should be brought into contact with the part, and there retained until the leech bites.

Leeches, when full, drop off spontaneously. If it is necessary to remove them before they are full they should be sprinkled with salt, but they should never be pulled off, as their teeth are apt to be left in the wound and cause inflammation.

It is undesirable to use the same leeches more than once.

Treatment after leeches are removed.

The part should now be well bathed with warm water containing some antiseptic, to favour the bleeding from the bites. It occasionally happens that leech bites bleed profusely and exhaust the patient, consequently it should be seen that all bleeding has ceased before leaving the patient for the night. Should bleeding continue longer than is desirable, a small compress tied firmly over the bites will usually arrest it. If these means fail, the officer should be at once informed of the circumstance.

Application of ice.

138. When ice is to be applied, it should be broken into small pieces by means of a straight packing needle, or similar instrument, thrust into the ice by a few taps with a mallet or small hammer. The pieces are then put into a bag of indiarubber, or other waterproof material, and laid over the part ; the bag should not be more than half filled, should be carefully tied, and, as soon as the ice is all melted, be removed and refilled.

Application of heat.

139. Bottles or special metal or earthenware vessels containing hot water are frequently applied to the feet, legs, and other parts of the body to restore the temperature. They should be carefully corked, wrapped in a roll of flannel or fold of a blanket, and then applied ; great care is necessary lest the heat be too great and the parts be burnt, especially if there is any want of feeling in the part, or insensibility of the patient. Hot bricks are occasionally used for the same purpose.

Fomentations or stupes.

140. Fomentations or stupes are applications of hot water to a part. To apply a fomentation : two pieces of flannel, each a couple of yards in length, or two pieces of spongiopiline, are immersed in a bucket of hot water placed by the side of the patient's bed ; one piece is taken out, and, by means of a wringer or towel, wrung out nearly dry,

and placed as quickly as possible on the part to be fomented, and covered by a piece of waterproof sheeting; the second piece is to replace the first as soon as the first begins to cool. The process will be continued for the space of at least 20 minutes, unless otherwise ordered.

Turpentine stupe.

Oil of turpentine is sometimes directed to be sprinkled over the flannel or spongio-piline each time after being wrung out, and the application is then called a turpentine fomentation or stupe.

Sponging the surface of the body.

141. Sponging may be employed in fevers to reduce the temperature of the body by means of evaporation. Either cold or tepid water is used.

A waterproof sheet is placed over the bed, the patient undressed and laid upon it; a large wet sponge is then rapidly passed over the different parts of the body, until the temperature is sufficiently lowered by the evaporation, when the patient is put to bed and covered up. This treatment is invariably carried out in the presence and under the direction of an officer.

Classification of baths.

142. Baths may be classified as water baths, vapour baths, and hot air baths; each of these again may be divided into (*a*) simple, and (*b*) medicated, when some drug is added. Water baths, as well as being simple or medicated, may be local or general, according as a part or the whole of the body is immersed. The temperature of the different kinds of baths, and the time that patients should be allowed to remain in them, are shown by the accompanying table :—

		Description.	Temperature.	Time allowed for remaining in.
			degrees.	minutes.
Water	simple (water alone)	Hot	98–105	10
		Warm	92–98	20
		Tepid	85–92	20
		Cold	temp. of the air	a few minutes
	medicated (water with mustard, acids, alkalis, iodine, or sulphur)	Warm	92–98	20
Vapour	simple (steam alone)	...	...	15–30
	medicated (steam first, then either calomel, iodine, or sulphur).	...	...	
Hot air	simple (hot air alone)	...	...	15–30
	medicated (hot air first, then chlorine)	...	...	

MEDICINES, &c.—continued.

Water baths.

143. The temperature of a water bath should always be determined by the bath thermometer, the use of which will be carefully explained by the Instructor.

It may be regarded as an invariable rule that the original temperature of a bath is to be maintained the whole time the patient remains in it, if necessary by additions of hot water, care being taken in so doing not to scald the patient.

In preparing a hot, warm, or tepid bath, cold water should be poured into the vessel first, and hot water then gradually added and mixed until the proper temperature is reached, as shown by the thermometer. The patient is then placed in the bath, which to avoid spilling should not be more than two-thirds full, the whole body with the exception of the head and face, or a part of the body, as ordered, being immersed.

At the end of the appointed time, when taken out of the bath, the patient should at once be rubbed dry with a towel, avoiding exposure to draughts.

Tendency to faint in a hot bath.

Exhaustion and faintness are sometimes produced by a hot bath ; weakly patients must be carefully watched, and removed immediately they appear faint.

Cold baths.

The temperature of a cold bath will vary with the temperature of the air. The body and the head should be immediately submerged on entering the bath, and as much movement as possible maintained while the patient remains in it.

Different forms of baths.

The baths used in military hospitals are the long bath —either fixed in a bath room, or movable so that it can be wheeled to the bedside—the hip, the slipper, the foot, and the arm bath ; these latter are used when certain parts only of the body require bathing ; the hip bath, for example, when it is intended to influence the organs in, or the parts about, the pelvis. In preparing a hip bath, the vessel must not be more than one-third full, otherwise when the patient sits down in it the water will overflow. The foot bath is one in which only the feet and legs are immersed ; it can be given at a temperature up to 115°. The vessel should be so full as to permit the water to reach nearly as high as the knees.

A blanket should be wrapped round the patient as he sits with his feet and legs in the bath.

Medicated baths.

Medicated baths, as a rule, should be given in wooden vessels. For the immersion of the whole body 30 gallons of water are required, in which the ingredients for the medicated bath will be dissolved.

Vapour and hot air baths.

144. Vapour and hot air baths may be given by means

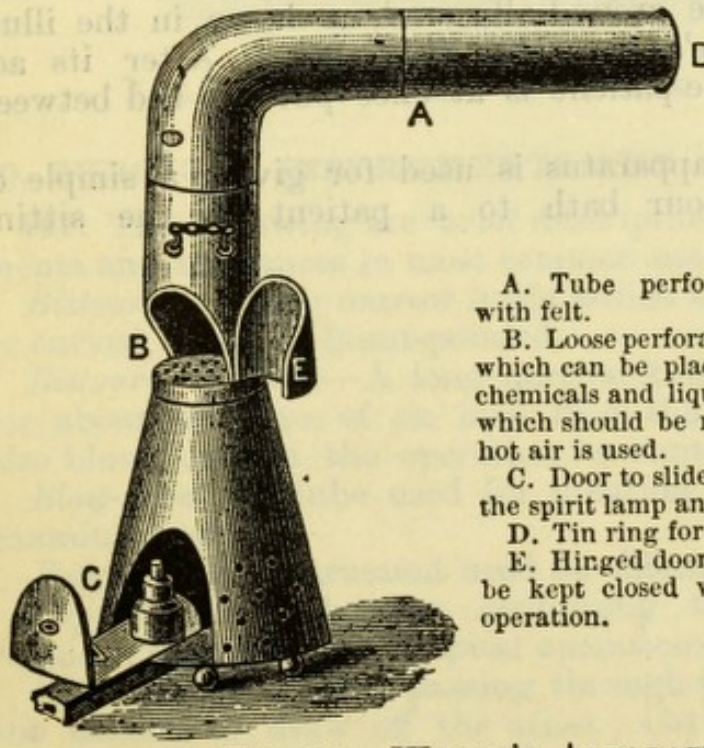
MEDICINES, &c.—continued.

of the portable vapour and hot air bath invented by the late Surgeon-Major John Wyatt, C.B., of the Coldstream Guards. The apparatus is contained in a small tin case, and consists of the following parts : a lamp, a bent tube enlarged at its base to take the lamp, vessels of different kinds (a tin basin for water, an enamelled dish for chemicals, a stone generator for chlorine), a diaphragm, and a portable cradle. By means of this apparatus a vapour or hot air bath may be given either in the recumbent or sitting posture.

Use of Wyatt's portable bath.

145. The following are the directions for using Wyatt's bath when the patient is in bed :—Remove the clothes from the bed, leaving a blanket only to lie upon. Put the cradle together on the bed, cover it with one or two sheets of paper, previously to placing the remainder of the clothes upon it ; this will be found as efficient as a water-proof covering, and quite free from any unpleasant smell.

Trim the lamp with methylated spirit ; the wick should be well spread out, so as to give a good-sized flame ; when lighted, place the end of the tube beneath the cradle,



A. Tube perforated, and covered with felt.
B. Loose perforated diaphragm, upon which can be placed vessels to contain chemicals and liquids for evaporation, which should be removed when simple hot air is used.
C. Door to slide, to which is attached the spirit lamp and extinguisher.
D. Tin ring for chlorine generator.
E. Hinged door, which should always be kept closed while the bath is in operation.

FIG. 24.—WYATT'S APPARATUS.

at about its transverse centre, tucking the bed-clothes well down, so as to entirely exclude cold air.

As a simple vapour bath.

For a simple vapour bath, place the tin basin three parts full of warm water over the lamp. When free perspiration has been induced all over the body, and the skin

subsequently become tolerably cool, the body should be rapidly rubbed over with a coarse towel, and the patient carefully enveloped in blankets.

As a medicated vapour bath.

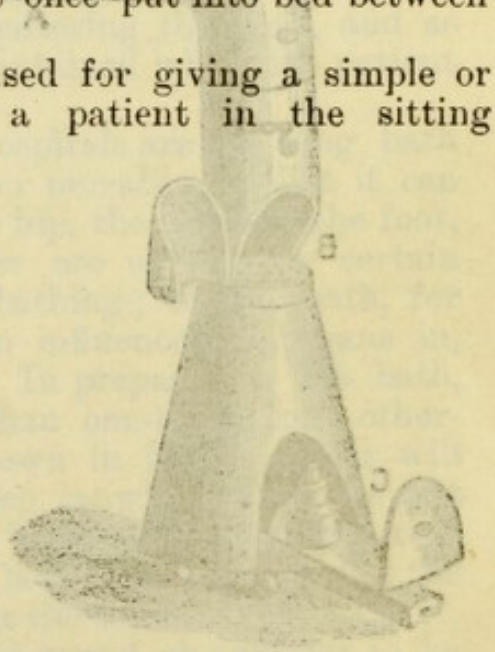
If iodine, sulphur, or mercurial vapours are required, the ingredients are to be placed in the enamelled dish upon the diaphragm and volatilized, after perspiration has been produced. After a medicated vapour bath the patient's body should not be wiped.

As a hot air bath.

When hot air only is required, remove the perforated diaphragm. If chlorine gas is required, withdraw the apparatus after a free perspiration has been produced by the hot air. Mix the ingredients (15 grains of oxide of manganese, and a teaspoonful of hydrochloric acid) in the stone generator, gently shake it, and place it in the tin ring just within the extremity of the projecting arm, care being taken to keep the thumb over the orifice of the generator until the apparatus has been replaced under the cradle. When the bath is administered to a patient in the sitting position the base of the apparatus is placed under a cane-bottomed chair, and the patient, seated on this, is enveloped in a mackintosh cloak, tied at the neck and reaching to the ground all round, as shown in the illustration of Lee's apparatus (Fig. 25). After its administration the patient is at once put into bed between the blankets.

Use of Lee's apparatus.

146. Lee's apparatus is used for giving a simple or medicated vapour bath to a patient in the sitting position.



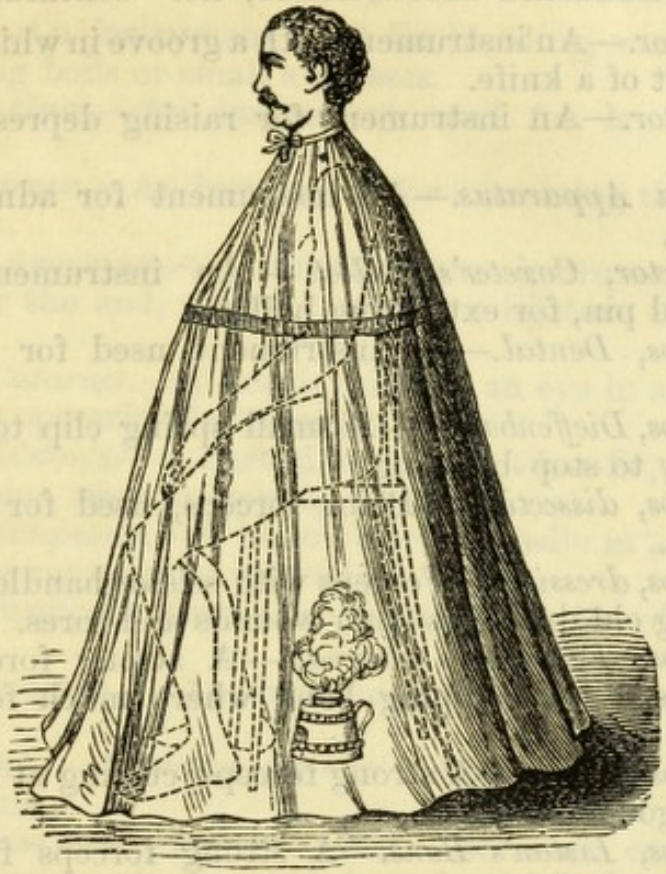


Fig. 25.—Lee's Lamp and Cloak in Use.

10. SURGICAL INSTRUMENTS AND APPLIANCES.

Description of instruments.

147. The following are brief descriptions of the instruments and appliances in most common use :—

Bistoury.—A long narrow knife, which is either straight or curved, sharp or blunt-pointed.

Bistoury, Hernia.—A long narrow knife, blunt except for about the space of an inch from the point, which is also blunt, used in the operation for rupture.

Blow-pipe.—A tube used for inflation in post-mortem examinations.

Bougie.—An instrument used for dilating strictures.

Capital Case.—A case containing the instruments required for performing capital operations.

Catheter.—A tube for passing through the urethra into the bladder to draw off the urine. Catheters are made of silver or gum-elastic, of various sizes, numbered from 1 to 12, and each contains a wire called a *stylet.*

Caustic-Holder.—A little case for holding caustic, usually made of gutta-percha or silver.

Cupping Case.—A case containing the apparatus required for performing the operation of cupping.

SURGICAL INSTRUMENTS, &c.—continued.

Director.—An instrument with a groove in which to guide the point of a knife.

Elevator.—An instrument for raising depressed pieces of bone.

Enema Apparatus.—An instrument for administering enemata.

Extractor, Coxeter's Bullet.—An instrument, with a scoop and pin, for extracting bullets.

Forceps, Dental.—An instrument used for extracting teeth.

Forceps, Dieffenbach's.—A small spring clip to fasten on an artery to stop bleeding.

Forceps, dissecting.—Plain forceps, used for dissecting purposes.

Forceps, dressing.—Forceps with scissor handles, used for removing old dressings from wounds and sores.

Forceps, Ferguson's clawed.—A strong forceps, with claws, used for gripping bone where much force is required.

Forceps, Gouge.—A strong forceps, cutting at the points, so as to gouge bone.

Forceps, Liston's Bone.—A strong forceps for cutting bone in operations.

Forceps, Spring Artery.—Forceps, fixed by a spring catch, for taking up arteries.

Forceps, Necrosis.—A strong forceps for pulling away dead bone.

Forceps, Savigny's Bullet.—An instrument with separate blades, used for extracting bullets.

Forceps, Spencer Wells'.—Forceps for the compression of bleeding vessels during operations.

Forceps, Torsion.—Forceps used for twisting arteries.

Gouge.—A grooved chisel for gouging bone.

Hare-lip Pins.—Long steel pins for bringing the edges of wounds together.

Hernia Director.—A steel instrument, with a groove, used in the operation for rupture.

Knife, Amputating.—Used for amputating a limb; a large one is used for amputation of the thigh, medium for the leg, small for the arm.

Knife, Tenotomy.—A small narrow knife for cutting tendons under the skin.

Lachrymal Probes.—Small silver probes for introducing into the tube or duct leading from the eye to the nose.

Lachrymal Styles.—A button-headed silver instrument for passing into the duct leading from the eye to the nose.

SURGICAL INSTRUMENTS, &c.—continued.

Lancet.—An instrument used for bleeding, vaccinating, and opening boils or small abscesses.

Lancet, Gum.—An instrument used for lancing the gums.

Laryngoscope.—An instrument for examining the throat and larynx.

Needle, Aneurysm.—A curved blunt instrument, with an eye near the end, used for passing a ligature under an artery.

Needle, Cataract.—A needle without an eye in a handle, used in the operation for cataract.

Needle, Liston's.—A curved needle in a handle, the eye near the point, used for sewing wounds.

Needle, Simpson's.—A hollow curved needle in a handle, used for sewing wounds with silver wire.

Needle, Surgical.—Curved and straight needles of various sizes.

Ophthalmoscope. — An instrument for examining the eyes.

Pliers, wire.—A sharp strong instrument for cutting wire and pins.

Pocket Case.—A case in which the more commonly required instruments are carried, and which fits into an officer's uniform pouch.

Post-mortem Case.—A case containing the instruments used in the examination of bodies after death.

Probang.—A flexible instrument for passing down the gullet.

Probe.—A silver wire instrument for probing wounds.

Saw, Amputating.—A saw used for sawing the bone in amputations of a limb.

Saw, Butcher's.—A framed saw, the invention of Mr. Butcher, used for the same purposes as the amputating saw, but more especially for excision of joints.

Saw, Hey's.—A small saw for cutting a piece out of a bone, used in operations on the skull.

Scalpel.—A short knife with a curved edge, made in different sizes and used for cutting and dissecting.

Scarificator.—An instrument with a number of lances, used for scarifying the skin in the operation of cupping.

Scissors, Bowel.—A pair of scissors, with a hook, used for slitting up the intestines in *post-mortem* examinations.

Spatula.—A blunt knife for spreading ointments ; also an instrument in the pocket case, used for depressing the tongue when an examination is being made of the throat.

SURGICAL INSTRUMENTS, &c.—continued.

Stethoscope.—An instrument with which to listen to the sounds in the chest.

Stomach Pump.—An apparatus used for pumping into and out of the stomach.

Syringe.—An instrument made of glass or pewter, used for injecting fluids.

Syringe, Hydrocele.—A glass syringe with a metal nozzle made to fit into the *canula* of a *trocar*, with which to inject the sac of a hydrocele when it has been tapped.

Syringe, Hypodermic.—A graduated glass syringe fitted with a hollow needle, employed in the injection of morphia and other medicines beneath the skin.

Tenaculum.—A sharp hook for taking up arteries or anything which may require hooking up during an operation.

Tourniquet.—An instrument for making pressure on an artery to stop the flow of blood through it. (*See* para. 159.)

Tracheotomy Tubes.—Two curved silver tubes, one fitting inside the other, used for putting into the windpipe when it has been opened by an operation called tracheotomy.

Trephine.—A circular saw, used in operations on the skull.

Trocar and Canula.—A sharp-pointed instrument and sheath for tapping collections of fluid. Large for tapping the belly or chest, small for tapping hydrocele.

Trocar and Canula, exploring.—A very fine instrument for searching for fluid.

Truss.—An appliance used in the treatment of rupture.

Surgical haversack.

148. The following are the contents of a SURGICAL HAVERSACK, which is a waterproof canvas bag, weighing, with contents, about 5 lbs. :—

Morphia injection, in stoppered bottle and boxwood case	½ oz.
Sal-volatile, in stoppered bottle and boxwood case	2 oz.
Cup, graduated horn	1
Lint, antiseptic	4 oz.
Bandages, loose-wove, antiseptic	4
„ triangular	6
Boric wool	2 oz.
Plaster, adhesive, 6 yards, 1-inch tape	2 tins.
„ transparent, isinglass, 12 yards, 1-inch tape....	1 tin.
Bearer's dressing-case (para. 149)	1

SURGICAL INSTRUMENTS, &c.—continued.

Specification, tallies (Army Book 166)	1 book and pencil.
Sponges, in waterproof bag	2
Tourniquets, field	2
„ screw, small	1
„ Esmarch's web	2
Wax candle and matches	1 tin box.
Wire arm splints, with tapes and buckles	2 pairs

149. The following are the contents of the BEARER'S DRESSING CASE, which is a leather case carried in the foregoing :— Bearer's dressing case.

Clasp knife, long-bladed	1
Scissors, strong	1
Forceps, dressing	1
Spatula, platinum-plated	1
Probe and director, combined, platinum-plated	1
Needles, common	6
„ surgeon's, plated, in sizes	6
„ worsted	2
Pins, large	12
„ hare-lip	6
„ safety	6
Sulphuro-chromic gut (skein of)	1
Thread (skein of)	1
Worsted (skein of)	1

150. The following are the contents of a FIELD MEDICAL COMPANION (weight about 11 lbs.) :— Field medical companion.

Medicines—

Chloroform	2 oz.
Iodoform	1 „
Mixture for diarrhœa	1½ „
Spirit, ammoniæ aromat.	1½ „
Tinct. opii	1½ „
Vaseline antiseptic	1 box.

Powders—

No. 1. Emetic { Antim. tart., gr. i. / Acacia pulv., gr. iij. } in each powder	1½ doz.
„ 2. { Hydrarg. subchlor., gr. ij. / Pulv. Jacobi, gr. iij. / Pulv. ipecac. co., gr. x. } in each compressed	2 „
„ 3. Ipecac. pulv., gr. xx., compressed	1 „
„ 4. Pulv. cretæ arom. c. opio 20 grains in each, compressed	2 „
„ 5. Pulv. jalapæ comp., 20 grains in each, compressed	2 „

SURGICAL INSTRUMENTS, &c.—continued.

Pills—

No. 6. { Acid. gallic., gr. iijss. .... / Morph. mur., gr. $\frac{1}{8}$ .... / Ext. gentian., gr. i. .... } in each pill.... 4 doz.

„ 7. { Hydrarg. subchlor., gr. i. / Pulv. opii., gr. i. .... } in each pill.... 5 „

„ 8. { Plumbi. acet., gr. iij. .... / Pulv. opii., gr. i. .... / „ calumbæ, gr. i. .... } in each pill.... 4 „

„ 9. { Hydrarg. subchlor. .... / Pil. rhei co. .... / „ coloc. co. aa, gr. ij. } in each pill.... 4 „

„ 10. Quiniæ sulphatis, gr. ij., in each pill .... 8 „

„ 11. { Camphor, gr. iij. .... / Pulv. opii., gr. ij. .... / „ capsici, gr. $\frac{1}{2}$ .... } in each pill.... 3 „

„ 12. Opii. pulv., gr. i., in each pill .... 12 „

„ 13. { Pulv. aloes barb, gr. iss. / „ jalapæ, gr. ij. .... / „ colocynth, gr. i. .... / „ cambogiæ, gr. $\frac{1}{4}$ .... / Saponis dur., gr. $\frac{1}{2}$ .... / Ol. carui, m. $\frac{1}{4}$, ft. pil. ij. } 2 pills for dose .... 4 „

Tablets—

No. 14. Aromatic confection, ʒ ss. each. No. 16.

„ 15. Opiate confection, ℈ i. each. No. 24.

Surgical Appliances (Antiseptic), &c.—

Bandages, open woven, No. 3.

„ suspensory, No. 2.

First field dressing, No. 2 (see para. 107).

Calico, thin, 1 yard.

Boric wool, 2 oz.

Candle and wax matches, in tin case.

Horn cup, graduated.

Lint, $\frac{1}{4}$ lb.

Measure, minim, in case.

Plaster, adhesive, 6 yards, 1 inch tape, 2 tins.

„ isinglass, 12 yards, 1 inch tape, 1 tin.

Gutta-percha tissue, $\frac{1}{4}$ yard.

Catheters, elastic gum, No. 3.

Sponges, surgeon's, No. 3 / Zinc basin, small } in waterproof bag.

Improved ratan splints, with pad cases, 1 pair.

Tourniquet, field, No. 1.

„ Esmarch's web, No. 2.

„ tape, No. 6.

SURGICAL INSTRUMENTS, &c.—continued.

Leather case, containing—
- Ligature thread.
- „ silk.
- Surgeon's needles.
- Sewing needles.
- Hare lip or acupressure pins.
- Safety pins.
- Sulphuro-chromic catgut ligatures.
- White wax.
- Scissors.
- Tape.
- Pins.

Hypodermic syringe, in case, with bottle of morphia injection and tube of morphia discs.

With each Field Companion is issued a WATER-BOTTLE, with drinking cup and strap.

Field medical panniers.

151. The following are some of the principal contents of the FIELD MEDICAL PANNIERS, the complete details of which are given in the Regulations for Army Medical Services.

Contents of No. 1 (*weight about* 90 *lbs.*), *The Medicine Pannier.*

Chloroform, Morphia inject.; Iodoform. Diarrhœa Mixt., Quinine; Purgatives, Lamels, and Discs; Brandy, &c.

A case of surgeon's instruments, writing materials, hypodermic syringe, clinical thermometer, candles, &c.

Contents of No. 2 (*weight about* 80 *lbs.*), *The Material Pannier.*

Lint, Plaster, Splints, Bandages, Tourniquets, &c. Extract of Meat, Etna and Spirit.

The weight is equalised for side loads by strapping the Field Companion on to No. 2 Pannier.

Field fracture box.

152. The following are the contents of the FIELD FRACTURE BOX. (Weight about 52 lbs.)
- 2 jointed thigh splints, wood.
- 1 set leg splints, right and left, wire.
- 1 „ „ „ „ wood.
- ½ set Pott's splints, wood.
- 1 „ „ wire.
- 6 pasteboard splints.
- 1 radius splint, wire.
- 1 counter extension apparatus.
- 1 double inclined plane, wire.

SURGICAL INSTRUMENTS, &c.—continued.

1 set gypsum bandage instruments in case.
1 lb. plaster of Paris, in ½-lb. tins.
½ lb. cotton wool, antiseptic.
½ lb. tow, carbolised.
2 yards flannel serge of open texture, antiseptic.
2 yards gutta-percha tissue.
12 loose-wove bandages.
12 Esmarch's bandages, printed.
12 straps with buckles.
1 old linen sheet

Box of apparatus for fractures and dislocations.

153. The following are the contents of the BOX OF APPARATUS FOR FRACTURES AND DISLOCATIONS. (Weight about 94 lbs.)

Double incline plane, McIntyre's.
2 jointed thigh splints, wood.
Jointed elbow „ wire.
Radius „ „
1 pair fore-arm „ „
1 pair upper-arm „ „
2 pair thigh „ „
Set of Duncan's ratan-cane splints.
„ japanned leg splints.
6 pasteboards for „
1 lb. gutta-percha for „
Salter's leg sling.
Set of dislocation apparatus.
Set gypsum bandage instruments, in case.
4 yards gutta-percha tissue.
1 lb. dextrine.
2 lbs. plaster of Paris.
12 loose-wove bandages.
2 lbs. tow, carbolised.
1 lb. cotton wool, antiseptic.
2 yards flannel serge, open texture, antiseptic
2 arm slings, 1 leather, 1 wire.
12 Esmarch's bandages, printed.
24 straps with buckles.
1 old linen sheet.
2 broad flannel bandages, 7 by 6.
1 counter extension apparatus.

11. CASES OF EMERGENCY AND THEIR IMMEDIATE TREATMENT.

154. In all cases of emergency the officer should be sent for at once, and until his arrival the instructions given below will as far as possible be carried out (see Standing Orders, paragraph 5.) Reference to Standing Orders.

Bleeding or Hæmorrhage.

155. Bleeding may take place when any portion of the system of blood-vessels gives way or is opened into. It is either arterial, venous, or capillary. Varieties of bleeding.

In bleeding from an artery, or arterial hæmorrhage as it is called, the blood that escapes is of a bright red colour, and spouts out forcibly in quick jerking jets, coming from the side of the wound nearest the heart, and in large or small quantity, according to the size of the vessel injured; in the case of a large artery, such as the femoral or carotid, life is destroyed in a few minutes if the bleeding be not arrested. Arterial bleeding.

In bleeding from a vein, or venous bleeding as it is called, the escaping blood is of a dark colour, and flows in a slow steady stream from the side of the opening farthest from the heart. Venous bleeding.

In capillary bleeding, the blood oozes from the entire surface, and not from any one point as when an artery or vein is injured. Capillary bleeding.

Arterial hæmorrhage is more dangerous than venous, and more difficult to stop by reason of the greater force of the current; capillary bleeding is less dangerous than either. Relative danger.

156. The means for temporarily arresting arterial bleeding until more permanent means can be resorted to by the officer, are :— Measures for temporary arrest of bleeding from an artery.

Direct compression of the bleeding point;

Compression of the artery between the wound and the heart;

Forcible flexion of a limb upon itself.

157. No time should be lost in making firm pressure with the fingers on the bleeding point. This pressure should be maintained until some of the more permanent means can be employed, or medical assistance procured. Direct compression by the fingers.

Direct compression may also be made by a graduated compress in the following manner :—Fold a piece of lint so Or by a graduated compress.

as to form a small hard pad about the size of the point of the finger; slip this under the finger at the bleeding point and press it there until another piece, a little larger, is placed on the top of it, and so on until the pile thus formed rises above the surface or edges of the wound, forming a cone with its apex on the wounded vessel and its base rising above the surface; over this a bandage is firmly applied. (Refer to para. 65.)

Compression between the wound and the heart.

158. Compression of the artery between the wound and the heart may be effected by the fingers (digital compression) or by the application of a tourniquet; but these methods can only be successfully carried out where the artery lies over a bone.

Digital compression of carotid artery.

Digital Compression of the following arteries is carried out as follows :—

The common carotid lying in the side of the neck may be compressed against the vertebræ by pressing with the thumb backwards and inwards in the hollow of the neck, formed between the windpipe and the ridge of muscle running from the ear to the centre of the breast-bone.

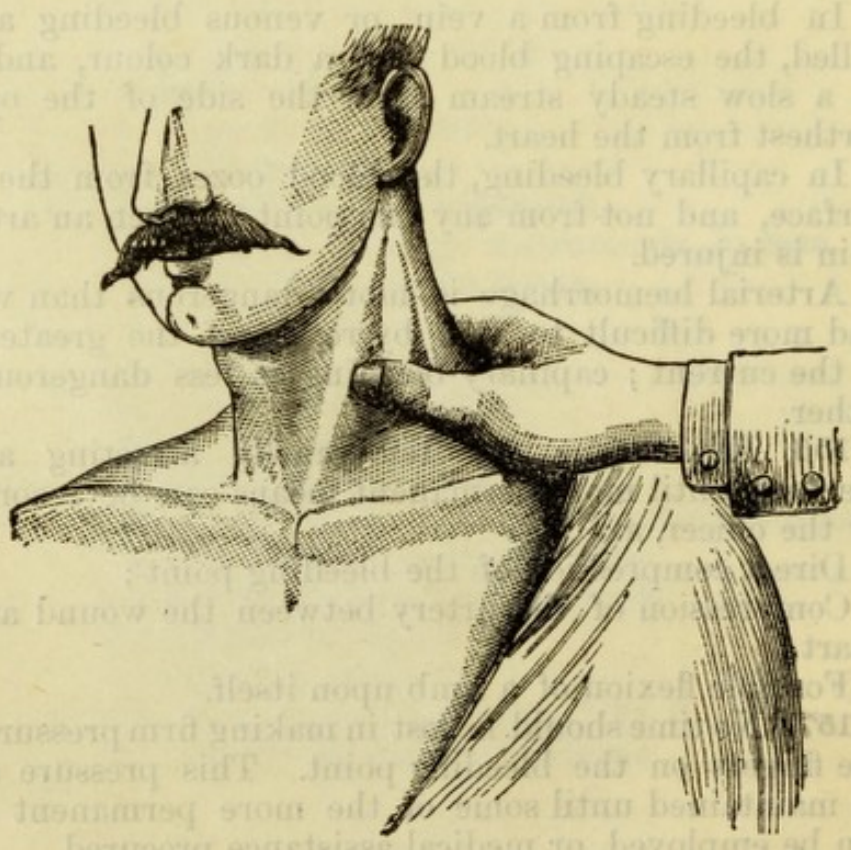


Fig. 26.—Digital Compression of the Carotid Artery.

CASES OF EMERGENCY—continued.

Of subclavian artery.

The subclavian artery may be compressed at the centre of the collar bone by drawing forward the shoulder, thus the artery will be more easily reached by the thumb pressing downwards against the first rib behind the clavicle.

Of axillary artery.

To compress the axillary artery raise the arm, place the thumb in the armpit and press upwards against the head of the humerus.

Of brachial artery.

The brachial artery may be compressed against the inner side of the middle of the humerus.

The inner seam of the coat sleeve may be taken as a rough guide to the course of the artery.

Of abdominal aorta.

The abdominal aorta may be compressed by flexing the thighs on the abdomen, and pressing backwards against the vertebræ at the level of the navel, but slightly to its left.

Of femoral artery.

The femoral artery may be compressed against the upper part of the femur by pressing backwards with the thumb placed across the line of the artery, four fingers' breadth, below a point midway between the symphisis pubis and the spine of the ilium.

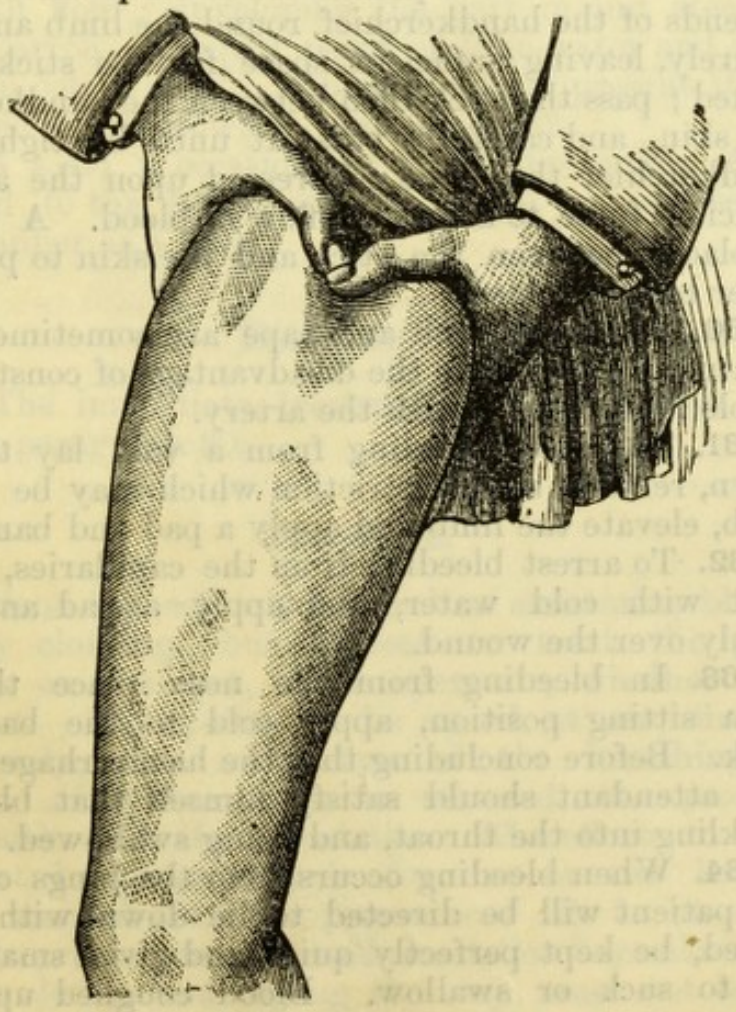


FIG. 27.—DIGITAL COMPRESSION OF FEMORAL ARTERY.

CASES OF EMERGENCY—continued.

Other arteries of the extremities.

Bleeding from any other artery of the upper or lower extremity, should be controlled by applying pressure on the brachial or femoral artery as above discribed.

Compression by tourniquet.

159. Compression by means of a tourniquet is only applicable in the case of the brachial or femoral artery, where the pad takes the place of the thumb as described in digital compression.

Kinds of tourniquets.

There are three kinds of tourniquets used in the military service :—the field, the screw, and improvised.

Field and screw tourniquet.

The essential parts of the field and screw tourniquet are a pad, strap, and buckle. The pad is placed on the main artery, the strap tightly encircles the limb, and is buckled off. The screw tourniquet differs from the field by having a screw by which the strap can be further tightened after buckling off.

Improvised tourniquet.

An improvised tourniquet is an apparatus made upon the spur of the moment to represent a tourniquet, as follows :—take a handkerchief, a smooth stone, and a stick, wrap up the stone in the centre of the handkerchief, tie a knot over it and place the stone over the artery, pass the ends of the handkerchief round the limb and tie them securely, leaving sufficient space for the stick to be admitted ; pass the stick then between the handkerchief and the skin, and carefully twist it until by tightening the handkerchief the stone is pressed upon the artery with sufficient force to arrest the flow of blood. A pad should be placed between the stick and the skin to prevent the latter being bruised.

Esmarch's web.

160. Esmarch's web and tape are sometimes used as tourniquets, but have the disadvantage of constricting the whole limb equally with the artery.

Arrest of venous bleeding.

161. To arrest bleeding from a vein lay the patient down, remove any constriction which may be round the limb, elevate the limb and apply a pad and bandage.

Arrest of capillary bleeding.

162. To arrest bleeding from the capillaries, bathe the part with cold water, and apply a pad and bandage firmly over the wound.

Bleeding from the nose.

163. In bleeding from the nose place the patient in a sitting position, apply cold to the back of the neck. Before concluding that the hæmorrhage has ceased the attendant should satisfy himself that blood is not trickling into the throat, and being swallowed.

Bleeding from the lungs or stomach.

164. When bleeding occurs from the lungs or stomach the patient will be directed to lie down with his head raised, be kept perfectly quiet, and given small pieces of ice to suck or swallow. Blood coughed up from the

lungs is of a bright red colour, while that brought up from the stomach is usually of a dark colour like coffee grounds.

Burns.

Immediate treatment of burns.

165. The damage to the body occasioned by burns varies with the degree of heat applied to the part burnt, the more intense the degree of heat, the more severe the burn. As regards immediate treatment, it should be remembered that severe burns, more particularly those situated on the head, neck, and trunk, and those which occupy a great extent of surface, are likely to be attended from the outset by serious constitutional disturbances, described under the head of "shock," and from which alone the patient may sink unless properly supported. The points to be aimed at in all cases are protection of the injured surfaces from the air, and relief of pain. This will be best accomplished by removing burnt clothing (cutting the clothes, not pulling them off), and then covering the surface with flour; enveloping the part in lint steeped in oil, or Carron oil (equal parts of lime-water and linseed oil), or in cotton wool. Where shock is present it must be treated as laid down in paragraph 182.

Scalds.

166. A scald is occasioned by the application of some hot fluid to the body, and is treated in precisely the same manner as a burn.

Dislocations.

Dislocations.

167. The immediate treatment of dislocations is laid down in paragraph 90.

Drowning.

Restoration of the apparently drowned.

168. Send immediately for medical assistance, blankets, and dry clothing, but proceed to treat the patient instantly on the spot, in the open air, whether ashore or afloat. The points to be aimed at are, first and immediately, the restoration of the breathing, and secondly, after breathing is restored, the promotion of warmth and the circulation. The efforts to restore life must be persevered in for one or two hours, or until a medical man has pronounced life to be extinct. Efforts to promote warmth and circulation beyond removing the wet clothes and drying the skin, must not be made

until the first appearance of natural breathing, for if the circulation of the blood be induced before breathing has recommenced, the restoration of life will be endangered.

Dr. Silvester's method of restoring breathing.

169. Dr. H. R. Silvester's method of restoring the breathing is as follows :—Place the patient on his back on a flat surface, inclined a little upwards from the feet ; raise and support the shoulders on a small firm cushion, or folded article of dress, placed under the shoulder-blades. Draw forward the patient's tongue and keep it projecting beyond the lips ; an elastic band over the tongue and under the chin will answer the purpose, or a piece of string or tape may be tied round them, or by raising the lower jaw the teeth may be made to retain the tongue in that position. Remove all tight clothing from about the neck and chest, especially the braces. Standing at the patient's head, grasp the arms just above the elbows, and draw the arms gently and steadily upwards above the head and keep them stretched upwards for two seconds. By this means air is drawn into the lungs (fig. 28).

Then turn down the patient's arms and press them gently and firmly for two seconds against the sides of the chest, crossing the fore-arms over the pit of the stomach. By this means air is pressed out of the lungs.

Repeat these measures alternately, deliberately, and perseveringly about fifteen times a minute until a spontaneous effort to respire is perceived, which should be aided by gently expanding and relaxing the chest as above, until the patient's breathing is thoroughly restored. Then cease to initiate the movements of breathing and proceed to induce warmth and circulation.

Dr. Marshall Hall's method of restoring breathing.

170. Another method is that of Dr. Marshall Hall. Place the patient on the ground with the face downwards, and one of the arms under the forehead, in which position all fluids will more readily escape by the mouth, and the tongue itself will fall forward, leaving the entrance into the windpipe free. Assist this operation by wiping and clearing the mouth. If satisfactory breathing commences, proceed to induce warmth and circulation. If there be no breathing, or only very slight breathing, or if the breathing fail, then raise and support the chest well on a folded coat, or other article of dress. Turn the patient very gently on one side and a little beyond, and then briskly on his face back again, repeating these measures cautiously and perseveringly about fifteen times a minute, or once every four or five seconds, occasionally varying the side (fig. 29).

Cases of Emergency—continued.

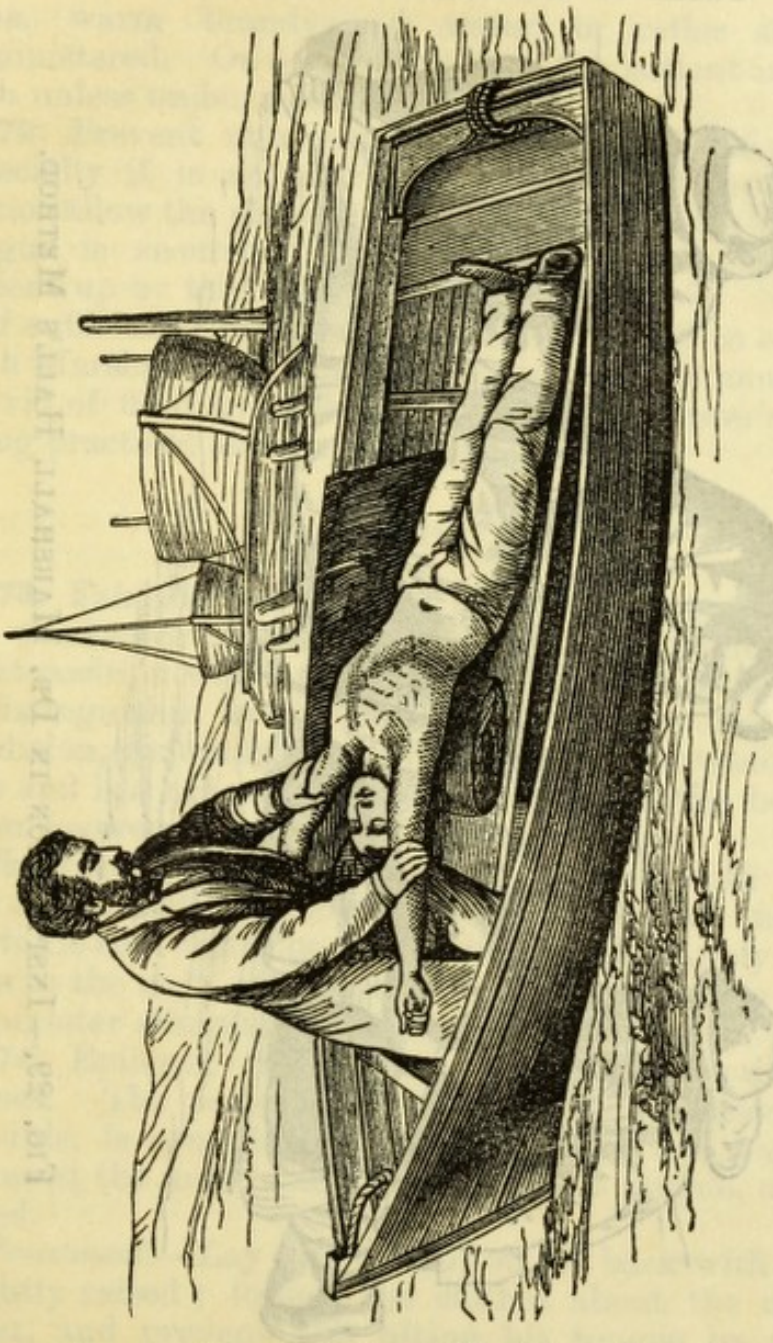


Fig. 28.—Inspiration in Dr. Silvester's Method.

On each occasion that the patient is replaced on the face, make uniform and steady pressure on the back between and below the shoulder blades, removing the pressure immediately before turning the body on the side. During the whole of the operation let one person attend solely to the movements of the head and of the arm placed under it. A second assistant should take charge of the feet so that they may be turned with the body. The result is respiration and, if not too late, life.

Whilst the above operations are being proceeded with, dry the hands and feet; and as soon as dry clothing or

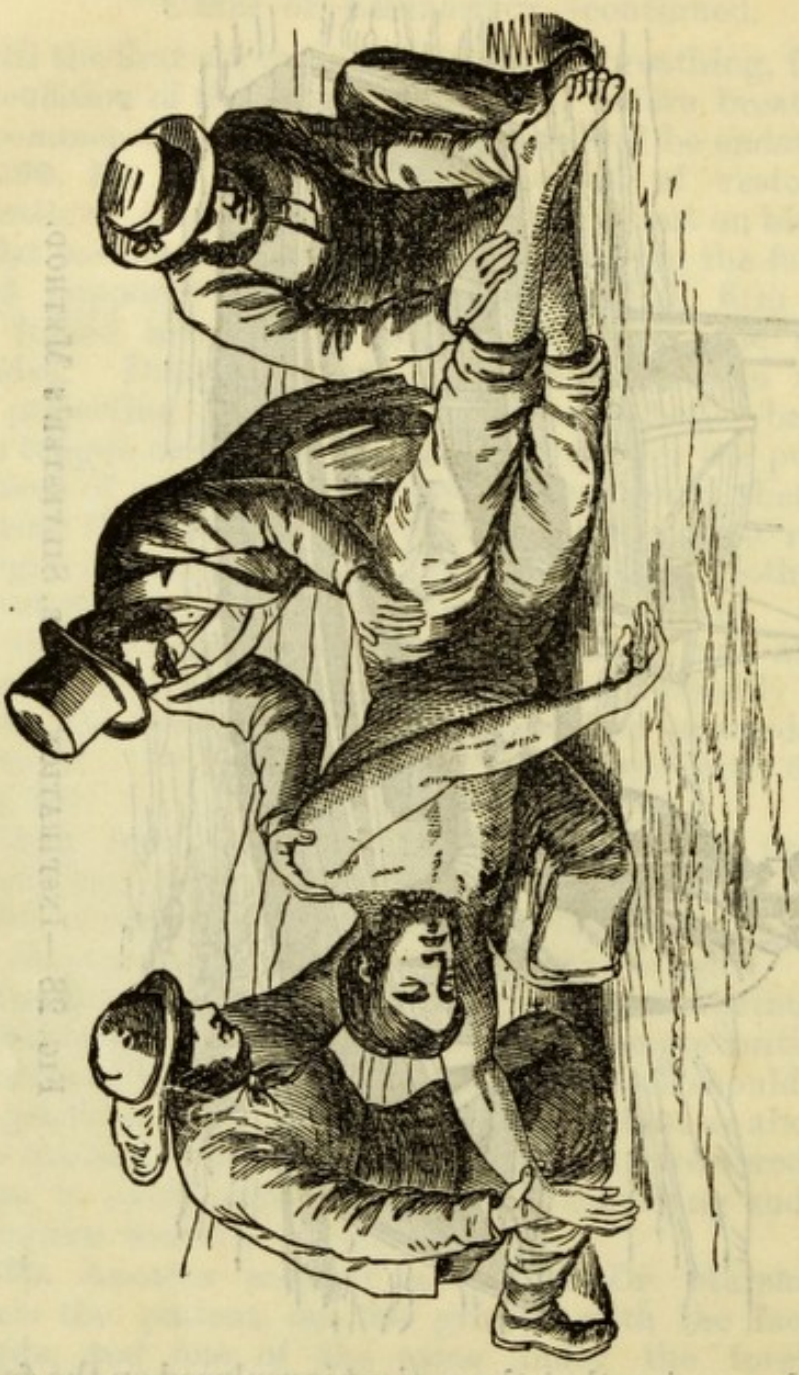


Fig. 29.—Inspiration in Dr. Marshall Hall's Method.

blankets can be procured, strip the body, and cover or gradually reclothe, but taking care not to interfere with the efforts to restore breathing.

Promotion of warmth and circulation.

171. To promote warmth and circulation rub the limbs upwards with energy, using handkerchiefs, flannels, &c. This friction must be continued under the blanket, or over the dry clothing. Promote the warmth of the body by the application of hot flannels, jars, to the pit of the stomach, arm-pits, and to the soles of the feet; if the power of swallowing has returned, small quantities of

wine, warm brandy and water, or coffee should be administered. On no account place the patient in a warm bath unless under medical orders.

172. Prevent unnecessary crowding round the patient, especially if in an apartment. Avoid rough usage, and do not allow the patient to remain on the back unless the tongue is secured. Under no circumstances hold the patient up by the feet. Further instructions

If sufficient assistance be at hand it is well to commence with Marshall Hall's method, by which it is more easy to get rid of fluid from the air passages, Silvester's method being practised as soon as these are clean.

Fits.

173. Fainting fits may be caused by over-exertion in hot weather or heated rooms, or by getting into the upright position when weak from disease. A fainting fit is distinguished by the patient falling down in a helpless condition, generally insensible, without convulsions. The face and lips are pale, and the surface of the body cold, often covered with a clammy perspiration. Fainting

Treatment.—Lay the patient on his back with his head low and loosen the clothes about the neck and chest. Sprinkle cold water on the face and neck. Apply smelling salts to the nose, and, when the patient is able to swallow, administer stimulants in very small quantities.

174. Epileptic fits are due to constitutional or local causes. The patient falls down with a scream, is insensible, is convulsed, throws his arms and legs about, foams at the mouth, and often bites his tongue, making it bleed. Epilepsy.

Treatment.—Lay the patient on his back with his head slightly raised; loosen the clothes about the neck and chest, and prevent him biting his tongue by placing a cork or piece of wood between his teeth as a gag. Employ sufficient restraint to prevent him injuring himself, but avoid pressing on the chest; the best method of holding him is for one attendant to hold the head firmly, two others to grasp the lower limbs above the knees and above the ankles, and two others to grasp the hands with the palms down, and the shoulders.

175. Apoplectic fits occur mostly in elderly and stout persons. The patient falls suddenly insensible. The face is red, the breathing loud and snorting, and the pupils frequently of unequal size. Apoplexy.

CASES OF EMERGENCY—continued.

Treatment.—Raise and support the head and upper part of the chest. Loosen clothes about the neck. Apply cold water to the head. Do not give stimulants.

Sunstroke.

176. Sunstroke, or heatstroke, which is the result of excessive heat, occurs in hot climates or summer weather. The patient falls suddenly, generally insensible, sometimes in convulsions, the skin feeling burning hot to the hand.

Treatment.—Carry the patient at once into the shade, and if in a room into the open air. Raise the head and remove the clothes from the neck and upper part of the body. Douche the head, neck, chest, and spine with cold water. Avoid crowding round the patient. Do not give stimulants.

Alcoholic poisoning.

177. Drunken fits are caused by the drinking of a large quantity of spirits at one time. They occur suddenly, but may not come on for some time after the spirits have been taken. The patient falls into a deep stupor, there is a ghastly vacant expression of the countenance, which is sometimes red and bloated. The lips are livid, the pupils dilated and fixed, and the breath smells strongly of liquor.

Treatment.—Place the patient on his side with head slightly raised, and do not allow him to lie on his back, or on his face. Remove all constrictions from the neck and chest. Induce vomiting by tickling the throat with a feather. Have the stomach pump ready in case the officer, on his arrival, should decide on using it.

FRACTURES.

178. The immediate treatment of fractures is laid down in paragraph 73.

POISONING.

General symptoms of poisoning.

179. A case of poisoning is recognised by (1) the sudden appearance of the symptoms in a person otherwise healthy, by (2) the symptoms coming on soon after food or drink has been taken, and, if after a meal of which many have eaten, the symptoms will then be complained of by several, or all who have partaken of it. The symptoms vary in character, and the treatment will depend on the poison taken.

Use of emetics and stomach pump.

180. In the table given in the next paragraph, emetics are recommended in some cases, and these should be ad-

ministered in accordance with the instructions contained in paragraph 116. Emetics should not be given in poisoning by mineral acids, caustic alkalis, oxalic acid, or other corrosives. The stomach pump may be required in arsenic, opium, strychnia, or alcoholic poisoning, and will be in readiness for use by the officer.

CASES OF EMERGENCY—continued.

Symptoms of and antidotes for particular poisons.

181. TABLE OF POISONS.

Poison.	Symptoms.	Emetics, &c.	Antidotes, &c.
1. Strong mineral acids 2. Caustic alkalis 3. Oxalic acid ... 4. Corrosive sublimate 5. Chloride of zinc 6. Chloride of antimony	*Immediate* burning pain in mouth, throat, and stomach, rapidly extending to abdomen. Vomiting occurs early, followed by purging. Speedy death from shock, exhaustion, or suffocation.	Emetics not to be given, nor stomach pump used.	1. Magnesia (calc. or carb.), 2 to 4 oz. to a pint of water, and 2 oz. for a dose at a time; or soap and water, or chalk, whiting, or wall plaster in water. 2. Lemon juice and vinegar. 3. Chalk and water; magnesia or whiting in water. 4. Raw eggs abundantly; flour made into a paste; milk. 5. Solutn of soda bi-carb., immediately followed by raw eggs. 6. Tannic acid in any form; tea, nutgalls, bark, or other astringent solutions or tinctures.
7. Arsenic ... 8. Tin ... 9. Lead ... 10. Copper... 11. Phosphorus ... 12. Iodine ... 13. Cantharides ...	Here the symptoms vary considerably; usually there is *considerable delay* in their appearance. After a time pain and great dryness of the throat, great thirst, nausea and vomiting; hiccup, loss of voice, cold sweats. Death will occur from shock or exhaustion.	Stomach pump may be required, and emetics to induce vomiting	7. Recently prepared iron peroxide, formed by precipitating tinct. ferri. perchl. by caustic ammonia ½ oz. of the precip. for a dose; raw eggs and milk; oil and lime-water. 8. Carb. ammonium in solution, or white of egg. 9. Magnesia or soda sulphate. 10. Raw eggs and milk. 11. Magnesia or chalk mixed in gruel. 12. Starchy fluids, gruel, &c. 13. Thick warm liquids, linseed tea, &c.
14. Irritant gases... ...	Headache and drowsiness	None required	14. Cold affusion; artificial respiration; fresh air.
15. Opium (morphia) ...	Giddiness, headache, dim sight, contraction of pupils, drowsiness passing into insensibility.	Stomach pump may be required.	15. Keep the patient roused, walking him about in the open air quickly; strong coffee; tannic acid; cold affusion to head and chest.
16. Belladonna ... 17. Hyoscyamus ...	Delirium, illusion of the senses, thirst; dilated pupils.	Sulphate of zinc.	16. Animal charcoal. Tannic acid. Strong coffee. 17. Do. Do. Do.

CASES OF EMERGENCY—continued.

TABLE OF POISONS—*continued.*

Poison.	Symptoms.	Emetics, &c.	Antidotes, &c.
18. Strychnia	Violent paroxysms of rigid convulsions, with great suffering; lockjaw. Mind not much affected.	Stomach pump usually required.	18. One or two tablespoonfuls of powdered animal charcoal in water; keep all quiet round the patient; support strength with beef tea and brandy.
19. Prussic acid	Death by shock, and the action so rapid as not to allow of any special symptoms.	Stomach pump or sulphate of zinc if the clenched jaws can be separated.	19. Restore animation by repeated cold affusions over head and neck; smelling salts to nostrils; brandy. Give magnesia, or soda bi-carb.
20. Carbolic acid... ...	Breath smells strongly of the acid; intense burning pain from mouth to stomach. Immediate giddiness.	Mustard or sulphate of zinc.	20. A mixture of olive and castor oils, with magnesia in suspension; raw eggs beaten up with sugar, *ad lib.*
21. Aconite	Numbness and tingling; feeling of constriction, and burning in the throat.	Sulphate of zinc.	21. Friction to limbs and spine with hot towels; stimulants.
22. Lunar caustic ...	Immediate vomiting usually	Should not be given.	22. Solution of common salt, or sal-ammoniac, or sea water.

Symptoms of and antidotes for particul poisons.

CASES OF EMERGENCY—continued.

SHOCK.

Symptoms of shock.

182. Shock is the constitutional disturbance, caused by severe injuries such as extensive burns or severe crushing of limbs. The symptoms are as follows:—The patient becomes cold and is pale, almost voiceless and pulseless, is seized with fits of shivering, which may continue for a considerable time, and he may break out into a cold perspiration.

Treatment.

Treatment.—Reaction must be promptly brought about by placing the patient in bed, restoring the warmth to the body by warm blankets, hot water jars to the feet, and by administering hot drinks with small quantities of stimulants.

SPRAINS.

183. The immediate treatment of sprains is laid down in paragraph 92.

12. MANAGEMENT OF WARDS.

Arrangement of furniture, utensils, &c.

184. Every attendant in charge of a ward is responsible for its proper management. The furniture should be neatly and systematically arranged, and the utensils and other articles kept each in its appointed place. The head of the bedstead should be 6 inches from the wall, the towel spread out on it to dry, and the chamber utensil and boots arranged as shown on Fig. 30. The bed-head board will be suspended on the wall over the head of the bed. On the top of the bedside table, which should be 6 inches from the wall, will be arranged the mug, bowl, plate, butter-pot, knife, fork, and spoon; on the centre shelf the comb and brush, and books; and on the lower shelf articles of clothing, neatly folded. Should the bedside table be provided with only one shelf, then all these articles must be arranged to the best advantage on it. The cap will be placed on the bracket.

Cleaning floors.

185. Every morning the floor of a ward will be swept and then well dry-rubbed and afterwards again swept. Much depends upon the manner in which this is done. If a floor be well dry-rubbed every day, it will smooth and polish the surface of the boards and prevent the dust

from adhering to them, thus obviating the necessity of washing them so often as would otherwise be the case, which in itself is a matter of great importance to the welfare of the sick.

Using the long scrubber.

In using the long scrubber the following are the main points to be attended to,—that the scrubber be forced firmly and evenly along the floor in the direction of the grain of the wood; that the stroke be not too long, and that each successive stroke of the scrubber partly covers the previous one. After the floor has been thoroughly rubbed over it will require to be swept clean, and in doing this there are a few points to be attended to, viz., that the brush is not jerked but pushed smoothly so as to raise the dust as little as possible, and, instead of sweeping the dust over the floor from the one end of the ward to the other, it should be collected in small heaps, each being put into the dust-pan, until the whole of the floor is swept, when it can be put into the dust-box for removal from the ward.

Washing floors.

The floor of a ward will never be washed without the permission of the officer. (*See* Standing Order 94.) A dry day should be chosen for the purpose, and the washing ought to be done as early as possible in the day. Before commencing, the floor should be swept clean, and the attendant should have a hand scrubber, some soft soap, two pieces of old blanket or flannel (one to put the clean water on the floor and the other to mop up the dirty), two buckets of hot water, in one of which some soda is placed, and the other kept to wring the flannel in after it has mopped up the dirty water. Leaving dirty water marks on the floor should be avoided, and the whole should be wiped as dry as possible. When anything is spilt upon the floor it should at once be carefully wiped up and the surface cleaned with a little hot water and soda, and dried and brushed.

Polishing floors.

Where the floors are polished they require to be first swept and then polished with beeswax and a long scrubber. To apply the beeswax it should be lightly rubbed on the scrubber or on a piece of flannel bound over the scrubber, and thus applied to the floor.

Cleaning windows.

186. The woodwork of windows should be cleaned by washing it with warm water and soap. The glass itself is cleaned by smearing over it a mixture of whitening and water, about the consistence of cream, allowing it to dry, and then polishing it with a clean thoroughly dry duster. This mode of cleaning is not always necessary, for if the glass be wiped over daily

with a duster it will generally suffice to keep it in good order. The cloths used should be free from nap or fluff.

Cleaning walls.

187. The walls of wards should be frequently dusted, and cobwebs removed with a duster tied over the top of a long hair-broom. Cement walls, in addition to dusting, require to be occasionally washed with hot water and carefully dried.

Cleaning stoves.

188. In cleaning a stove care is required that other things are not dirtied. A good plan to prevent this is to hold a thin strip of wood with one hand against the surrounding wall, while the brush is used with the other. The blacklead should be made into a thin paste and applied with the small round brush over every part that is to be blacked. When the blacklead is dry on the stove, the polishing brush is to be used briskly until every part of the iron-work shines. The ends of the fire-irons are cleaned in the same way as the stove, the bright parts rubbed with bath brick and a piece of leather or coarse cloth.

The best time for cleaning a fire-place is before the fire has been lighted, but as this can seldom be done, it should be cleaned immediately afterwards before it gets hot.

Cleaning paint work.

189. The paint-work of a ward will require to be occasionally scrubbed with hot water and soap. Soda should not be used, as it soon destroys the paint.

Cleaning furniture and utensils.

190. Tables and forms should be scrubbed with hot water and soap. Tumblers and such articles are best washed in cold water, it gives them a better polish and does not crack them. Mugs, basins, and such like must be washed in hot water. Vessels of tin and white metal are best cleaned by washing them with hot water to remove the grease, and then polishing them with whitening. In washing knives and forks the blades only should be placed in hot water. Coal-scuttles and brasses should be polished with a paste made of finely powdered bath brick and water, and rubbed with a piece of leather or coarse cloth. When the brasses are very dirty they should be washed with hot water before being polished.

Dusting.

191. Every ward should be dusted at least once in the day. In doing this great care is necessary, for if a dry duster be flipped about, as is usually done, it merely raises the dust into the air to be again deposited in the same place or elsewhere. The duster should be slightly damp, and every article requiring to be dusted should be wiped over with it. By this means the cloth will take up the dust and not drive it from one place to another.

MANAGEMENT OF WARDS—continued.

Emptying slops.

192. Slops should not be allowed to remain in the wards. All ward slops, such as the contents of chamber pots, bed urinals, bed pans, expectoration cups, washings of sores and wounds, and water used for washing bedridden patients, should be thrown down the slop closet, where such is provided, but where this does not exist, they must be thrown down the water-closet, care being taken in doing so not to soil the seat. Slops are never to be emptied into the sink. Old dressings, such as lint, poultices, tow, plasters, &c., should on no account be thrown down the slop closet or water closet, as they will block the pipes. Such articles should be removed to the dust heap to be burnt. (Refer to Standing Order 94.) The utensils from which slops have been emptied must be well washed, by running water freely into them from the tap, and using disinfecting fluid when necessary. They will then be dried, and cloths used for this purpose must be carefully washed, dried in the open air, and not used for any other purpose.

Old dressings, poultices, &c., to be burned.

Warming.

193. The stoves in use in military hospitals are either set in the wall or stand in the centre of the room. The fires should be properly built up before lighting, and afterwards so replenished with fuel as at all times to be bright and cheerful, and not allowed, as is too often the case, from their having been too long neglected and then heaped up with a large quantity of coal, to become a mere spark, half smothered in cinders and coals. The temperature of the ward should be kept as near 60° F. as possible, and sudden alterations of heat and cold avoided as far as practicable.

Lighting by gas.

194. Where gas is used in wards it should not be kept higher than is necessary to give sufficient light, as the combustion of the gas renders the air impure, and the greater the quantity burned, the more impure will the air become; moreover, too bright a light is often distressing to patients.

Ventilation.

195. By ventilation is meant the changing of impure for pure air in an apartment. If the air of a ward be not constantly changing, it becomes loaded with impurities given off from the lungs, from the skin, from the excretions of the occupants, and from combustion.

Effects of bad air.

The effect of an atmosphere thus rendered impure is to favour the development of fevers, the spread of gangrene, erysipelas, and other diseases, to retard the healing of sores and wounds, and to lower generally the health of patients.

MANAGEMENT OF WARDS—continued.

Principle of ventilation.

The principle to be kept in view is, that the air within the ward shall be, as nearly as possible, as pure as that outside the building, while at the same time the temperature is maintained at the proper standard. To effect this the air of the ward must be constantly changing, fresh air entering as impure air escapes. There must therefore be both inlets and outlets. In hospitals the inlets are so arranged that the amount of air entering by them can be

Air inlets.

regulated by opening or closing them. They are so placed that the air, as it enters, is diffused generally over the apartment, and currents of air with a high degree of velocity, that is to say, draughts, are thus prevented. Sheringham's ventilators placed in the walls, and Moore's louvre ventilators in the windows, are the inlets most generally employed. Galton's stoves also have a channel communicating with the outer air, and opening into the wards, by which means air, heated in its passage, is ad-

Air outlets.

mitted into the ward. The outlets are generally placed in the ceiling, and lead into a shaft. The chimney also acts as an outlet. By means of these several openings an interchange of air is constantly carried on. The air within, as it becomes heated and impure, ascends and passes away through the outlets, while the pure air from without, being colder and consequently heavier, rushes in through the inlets to supply its place, and thus a continuous current is established. Where these means of

Opening of windows.

ventilation are insufficient, they may be supplemented by drawing the window sashes down from the top, but they should not, as a rule, be raised from the bottom.

Test of good ventilation.

If the ward is properly ventilated there should be no smell perceptible on entering it from the open air, the temperature should not exceed 60°, and there should be no draughts.

Making beds.

196. The comfort of a patient depends much upon the manner in which his bed is made. Care should therefore be taken to keep it as comfortable as possible. Before making up the bed, the whole of the bedding should be thoroughly aired, and afterwards well shaken, particular care being taken to remove all lumps and irregularities from the mattress. A bed is very apt to become hollow in the centre. This may be caused by the lacing of the sacking getting slack, which defect should be at once remedied by tightening the cord. If due to packing, the mattress should be well shaken up and turned over.

These preliminaries being attended to, the mattress is laid on the sacking, a blanket laid evenly over the mattress,

and the bolster placed on the blanket at the head of the bed. The sheet is next laid over the blanket and bolster, and neatly tucked under the latter. Both blanket and sheet being smoothed out free from folds or wrinkles, should then be tucked firmly and neatly under the edges of the mattress. This tends to keep them smooth, and prevent them getting into folds. The pillow, having first been well shaken, should be placed on the bolster. The over-sheet, the blankets, and counterpane are now spread, tucked in round the sides and the foot of the mattress, and neatly folded down at the head.

Lacing the bed sacking.

The following are the directions for lacing the bed sacking :—Pass the ends of the rope from below upwards through the two centre holes at the head end of the bed frame, equally dividing it so as to have its centre between the two centre holes. Pass an end from above downwards through each of the two centre holes of one end of the sacking, work round towards the two sides, passing the rope ends alternately through the holes in the framework and sacking, from below upwards in the former, and above downwards in the latter. Each corner eyelet in the sacking must have four strands of rope passed through it, namely, those from the last two holes of the head end and the two first of the side. This ensures the head end of the sacking being opposite the second side hole, and the other end in a corresponding position from the foot of the bed. The lacing is continued down the sides and round the corners at the foot end in a similar manner, the ends being secured in a firm hitch when the lacing is completed at the centre of the foot. The sacking and rope must be pulled perfectly taut before fastening off.

Folding up beds.

197. The bedding of patients who are able to get up will be folded up in the following manner :—the bed-clothes, pillow, and bolster having been removed from the bed, and placed on a form or chair close by, the pillow will be laid across the mattress at the foot of the the bed, and on it the bolster ; the attendant, now placing himself at the foot of the bed, will roll the mattress, pillow and bolster twice over into as compact and even a roll as possible, drawing the mattress towards him as he does so, and will then arrange it in a line with the end of the bedstead. The next step will be to fold and arrange the bed-clothes neatly on top of the roll formed by the mattress. The counterpane is first taken and spread out lengthwise across the bedstead, and with the "right" side downwards ; the side border next the foot of the bed

is then turned over upon itself to the extent of about six inches, and the fold so formed then drawn down, and laid across the centre of the roll of mattress. A blanket is next taken, doubled upon itself lengthwise, and placed on the bedstead; this the attendant now takes hold of, draws a fold of it towards him (the fold should be about 10 inches wide), and lays it on the counterpane fold, and, on top of this, then the remainder of the blanket in three other similar folds, so that four doubles of the blanket overlie each other facing him. A fold of the counterpane is next lifted up, and laid

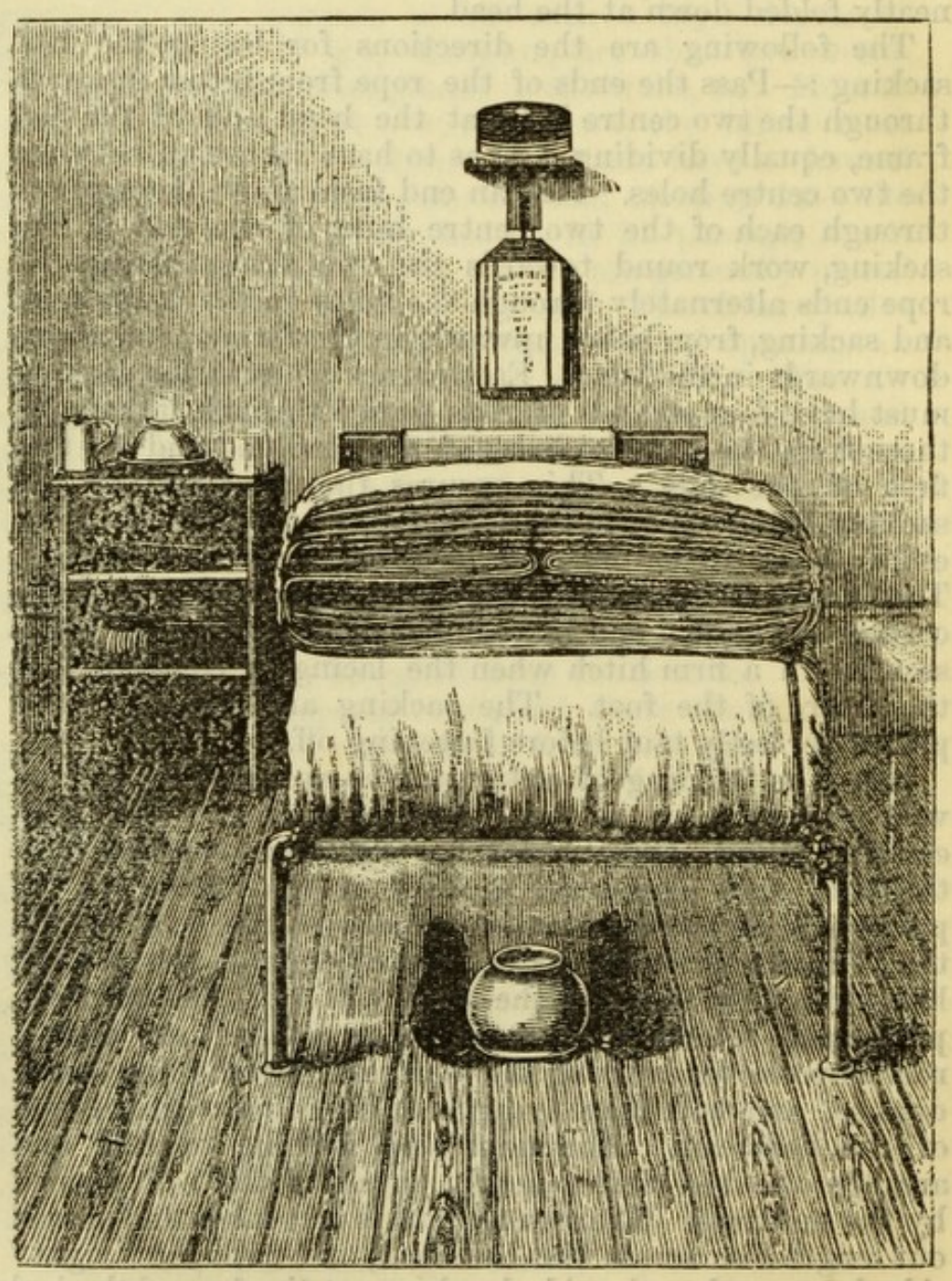


Fig. 30.—Hospital Bed and Bedside Table.

on the blanket folds. A second blanket is taken, doubled upon itself lengthwise, placed on the bedstead, and two folds lifted and laid on the counterpane fold; on this the pair of folded sheets are then laid (a sheet is folded by doubling it crosswise, then folding it again in the same direction until the width equals the width of the mattress roll, then folding it crosswise in four folds, and lastly doubling these folds over once); on top of these, two more blanket folds, and on top of the blanket folds a counterpane fold. The third blanket will then be taken, arranged in four folds—in a similar manner to the first blanket—and laid on top of all. When there are only two blankets the package of bed-clothes will be so arranged as to have the blankets in four folds with the folded sheets in the centre, separated from the blankets by a fold of counterpane on either side. The last thing to do is to bring the free ends of the counterpane up to meet each other, to draw them tightly together, and cross them, to reverse the package of bed-clothes, the face of which now should be quite square towards the man folding the bed, and arrange it neatly on the centre of the roll (fig. 30).

Preparing an air-bed.

198. An air-bed is laid on the top of the ordinary hair mattress, the smallest of the three compartments of the bed being laid towards the head of the bedstead. Each compartment of the bed being distinct and separate from the others, will require to be filled separately in the following manner:—

Insert the nozzle of the small round bellows provided for the purpose into the inlet tube, and turn the ferrule on the inlet tube to the left until it stops. This opens the inlet, and at the same time attaches the bellows. Pump in air with the bellows in the ordinary way. When sufficiently full the inlet is closed by turning the ferrule to the right until it stops. This closes the inlet and at the same time detaches the bellows. The compartments should not be filled too full, or the bed will be hard and unyielding, but should contain just sufficient air to render them soft and elastic. As air-beds usually leak, the bellows should be kept at hand and fresh air forced in occasionally to replace that lost by leakage. At least two under-blankets should be laid on to absorb perspiration, and the bed made in the usual way.

Preparing water-bed.

199. A water-bed is placed on the ordinary hair mattress, with the funnel or opening by which it is filled towards the foot of the bedstead. The foot of the bedstead should be raised four or five inches by a

couple of bricks under the two lower feet. By this the water when poured in will run towards the head of the bed. One person taking charge of the funnel, holds it firmly in an upright position. Water at a temperature of about 70° F., should now be poured in until the bed is about three-fourths full. The mouth of the inlet should now be secured, and the bed made in the ordinary manner, using, as in the case of the air-bed, at least two under-blankets to absorb perspiration.

Cold water must not be used to fill a water-bed, as it is liable to chill the patient; at the same time, the water must not be too hot, or it will injure the india-rubber material of which the bed is made. If more than three-fourths full the bed becomes hard and unyielding, and does not accommodate itself to the shape of the body.

Both on air and water-beds the sheet and blankets beneath the patient require frequent changing, as they quickly become wet from perspiration, which the water-proof material of the bed does not allow to escape.

Preparing a bed for operations.

200. In all cases of operations, and where there is a discharge of any kind from a patient, the bed should be prepared in the following manner:—A waterproof sheet should be laid across the bed where it is necessary to protect it, and over this a draw-sheet is placed. The draw-sheet is made by folding an ordinary cotton or linen sheet lengthwise to nearly the same breadth as the waterproof sheet on the top of which it is placed. One end is tucked in under the mattress, and the other rolled up on the opposite side of the bed. When the part of the draw-sheet under the patient gets soiled, it may be withdrawn a little towards one side of the bed, and thus a dry part can be constantly kept under the patient without the necessity of replacing it by a fresh sheet whenever it is soiled. In cases of amputation, where, to support the stump, pillows are used, precautions should be taken to keep them dry by covering them with waterproof material of some kind.

13. THE NURSING OF HELPLESS PATIENTS.

Causes of helplessness of patients.

201. Patients may be helpless from a variety of causes; from weakness, from paralysis, or from injury, and it is of great importance that attendants should be acquainted with the easiest, gentlest, and safest methods of lifting and laying them. When patients are weak, or have been

NURSING OF HELPLESS PATIENTS—continued.

a long time in bed, the tendency they have to faint when moved into an erect position should be borne in mind. Thus, when lifting or laying such patients, they should be kept in the horizontal position as far as possible. This is taken into consideration in the methods recommended for performing the offices for helpless patients described in paragraphs 202 to 208. Tendency to faint.

202. There are three methods of lifting and laying a helpless patient. Lifting and laying a helpless patient.

First method : An attendant takes up a position on either side of the patient, and, stooping, each passes one hand under his back, at the lower part of the shoulder-blades, locking them together, the other hands are passed under his thighs close up to the hips, locking them also. Rising together, they steadily raise the patient and carry him in the horizontal position. Where the leg is injured, both lower extremities will be supported by a third attendant.

Second method, where Captain Russell's stretcher is provided : This stretcher consists of two poles connected by strips of webbing and two cross-bars. To use it, one pole is removed, and the other, with the webbing attached to it, is laid by the side of the patient. The looped ends of the strips of webbing are passed under the patient, and the pole, which was removed, passed through the loops. The cross-bars being put into proper position, an attendant takes hold of the handles at each end, and carries the patient as if on an ordinary stretcher. When the patient has been laid down, one pole is removed, and the strips of webbing thus set free withdrawn from under him.

Third method : A patient can be lifted with great ease and comfort by four attendants, two poles six feet long, and the blanket and under sheet. One pole is placed at each side of the patient, and the sheet and blanket firmly rolled round it. The four attendants take up a position, two at each side, facing the patient. Each grasps with one hand the end of one of the poles surrounded by the sheet, and with his other hand the pole near its centre. Acting together the patient is steadily raised and carried, feet foremost, over the foot of the bed.

203. When the bed of a helpless patient is to be remade, a second bed should be prepared to take the place of the one in use, the patient being lifted from one to the other. The new bed should be placed by the side of the old one, but sufficiently distant to allow space for attendants to Remaking bed for a helpless patient.

move freely between the two. The patient may be lifted by any one of the three methods just described, and being moved feet foremost over the foot of the old bed, so as to clear it, he is carried head foremost over the foot of the new bed, and steadily lowered into his proper place.

Changing an under sheet.

204. The under sheet may be changed by either of the following methods, as directed by the officer :—

First method : Roll up lengthwise half of the dirty sheet, and push the roll as far under the side of the patient as possible. Next roll up one half of the clean sheet and spread the other half over the side of the bed from which the dirty sheet has been removed, and tucking it under the mattress, place the roll alongside the roll of the dirty sheet. This done, gently raise the patient at the opposite side and turn him over the rolls of sheets. Then take away the dirty sheet and unfold the clean one, and tuck it neatly under the mattress, when the patient may be turned into his old position.

Second method : Gently raise the patient nearly into the sitting posture, and roll the dirty sheet from the head of the bed downwards, and push the roll as close under the hips as possible. Next roll up crosswise half the clean sheet, and lay the roll by the side of the roll of the dirty sheet, and spread the other half over the pillow and that part of the bed from which the dirty sheet has been removed. Now lay the patient down, and raising the lower extremities and hips, draw away the dirty sheet, unfold the clean one, spread it out, and tuck it in under the mattress.

Changing a draw sheet.

205. A draw-sheet requires to be frequently changed, in addition to a fresh part of it being brought under the patient as often as one part becomes soiled.

To bring a fresh part under the patient, the hips of the patient should be raised by two attendants, each passing a hand and locking them under the thighs, and when thus raised the folded sheet is gently pulled, without the waterproof, towards one side.

To change the draw-sheet, both the folded sheet and the waterproof should be removed ; this may be done in the same way as the first method for changing an ordinary sheet, or the patient may be raised by two attendants as just described, and the dirty sheet removed and the clean slipped in.

Raising helpless patients in bed.

206. Weakly patients frequently require to be raised in bed. This may be done by pillows, by a bed with a head-lift, or by a head-lift, which can be slipped in under

the mattress and worked by a rack and pinion. When pillows are used they should be placed under the patient's back as well as his head, sloping up from his back gradually to where a pillow is placed for the head to rest upon. If merely piled one on top of the other under his head, and not arranged so as to support his back, the chin is pressed forward on the chest, a position which is very irksome to the patient and obstructs his breathing.

When the upper part of the body is raised by any of the methods described, there is a great tendency for the patient to slip down towards the foot of the bed. A foot-board with a pillow for the feet to rest against will prevent this, but often the patient cannot bear his feet against the board. Under such circumstances an air or water-pillow, either horse-shoe shaped or circular, with a hole in centre, may be put under the hips of the patient, and tied by two tapes to the head or sides of the bed, and thus a fixed point will be opposed to the hips slipping down.

Feeding helpless patients.

207. When it is necessary to give food, drink, or medicine to a helpless patient, the head and, if possible, the upper part of the body should be raised. For fluids, a feeding cup may be employed. Where this is not provided, a spoon, a glass, or mug may be used. When a glass or mug is used, the precaution should be taken of only half filling it, as otherwise the fluid is sure to be spilt.

The bed-pan for helpless patients.

208. The bed-pan should be used with the greatest care, and with as little disturbance as possible to the patient, who should not be exposed more than is absolutely necessary, lest he catch cold. There are two kinds in use, the circular, and the slipper. When the circular bed-pan is used, the patient must be lifted by two or three attendants by the first method described under the head of lifting a helpless patient, and the pan slipped under him. With the slipper bed-pan the patient should be raised at one side, and the thin edge shoved in under the hips. The bed-pan before being used should be warmed and sufficient carbolic or other antiseptic fluid poured in to cover the bottom of the pan. While being removed from the ward it should be covered with a cloth or duster.

Bed sores.

209. Bed-sores generally occur on those parts which are most subject to pressure, viz., the skin over the back and prominences of the hips. When using the bed-pan, washing the patient, or changing sheets, the attendant should watch carefully for any signs of approaching bed-

sores, and report to his officer. If the skin is red and tender it should be bathed with spirits of camphor, or equal parts of spirits and olive oil, or painted with a solution of gutta-percha and chloroform, and the sheet sprinkled with finely powdered starch or arrowroot. The use of a water-bed affords the best preventative against bed-sores.

14. THE OBSERVATION OF THE SICK.

Necessity for noting symptoms.

210. Symptoms are the signs of disease on which the medical officer has to depend to determine its nature, its severity and danger, the treatment, and the probability of recovery. It will thus be understood how important it is that the attendant should be able to note any change in the symptoms of a patient during the absence of the officer.

General appearance of a patient.

211. The appearance of the patient will very often show whether he has changed for the better or worse. The expression of the face may be that of pain, anxiety, or vacancy. On the other hand, it may be calm, hopeful, and intelligent. The colour may be bright red, congested and dark, or pale. The lips may be crimson, purple, or white and bloodless. The nose may look pinched. The cheeks may be sunken and the temples hollow. The eye may be glassy and staring, or dull and heavy. The patient may lie in a listless careless manner, or he may be restless and toss about; or again, he may be picking at the bed-clothes, and his movements tremulous and uncertain.

Position in which he lies.

The position in which he lies should also be noticed; whether he lies on his back or on his side, with his legs drawn up or stretched out. Patients helpless from extreme weakness have a tendency to slip down towards the foot of the bed, which should be watched for and rectified.

Intelligence.

212. The attendant should observe whether a patient shows his usual intelligence and interest in his surroundings, or whether he appears to be dull and stupid, or only rousing himself when spoken to. He may show mental

Delirium.

derangement, which is called delirium, and may be boisterous, or low and muttering: so slight that the patient can be recalled to himself and for a time speak rationally, or so severe that it will be impossible to arouse him from it. In it the patient may see objects and hear sounds which do not exist, and speak and act as if these

sights and sounds were real. It occurs more frequently during the night than in the daytime. A close watch should be kept on delirious patients, lest they should get out of bed and escape from the ward, throw themselves out of the window, or do themselves or others some bodily injury.

Manner. The manner of a patient should be observed. It may be calm and collected, excited, depressed, or in some way differing from his ordinary manner.

Temper. The temper also of a patient may vary. At one time he may be irritable, peevish, and easily annoyed, while at others he may be quiet, good-tempered, and easily pleased.

Sleep. **213.** It should be noted how long the patient sleeps; whether his sleep is disturbed, whether it is sound and calm, and accompanied or not by heavy breathing. It sometimes happens that a patient will report that he has not slept "a wink" all night, when in reality he has slept well; so that it becomes necessary not to rely too much upon the patient's statement with regard to sleep.

Pain. **214.** Pain is an accompaniment of most diseases. It varies much in its nature and modes of occurrence. It may come and go or be continuous, wander about or be fixed, or it may moderate for a time and again come on with great severity. It also varies much in degree, from mere uneasiness to agony. It may be dull, aching, smarting, burning, tingling, or throbbing. The statements of the patients have to be relied on as regards the existence of pain, but its degree may be generally judged from the expression of the countenance and the tone of the voice. The time of attack, the duration, the cessation, the degree and character of the pain should all be carefully noted.

State the skin. **215.** The condition of the skin should be watched, especially in fevers and inflammations; whether it is dry, moist, or perspiring, hot or cold, pale, red, or shrunken. The skin, from being cold, may become hot, then moist and perspiring. The time at which such changes occur should be carefully noted.

Shivering and eruptions. Associated with the condition of the skin is the occurrence of shivering, or rigor, a symptom which should never be overlooked. Any rash or eruption making its appearance on the skin should also be carefully noted.

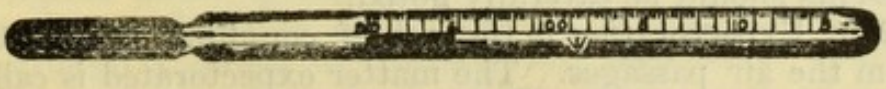


Fig. 31.—Clinical Thermometer.

OBSERVATION OF THE SICK--continued.

Use of clinical thermometer.

216. The temperature is taken by means of the clinical thermometer, which is self-registering, and so does not require to be read while in position. The index of the thermometer consists of a small piece of mercury detached from the column in the stem of the instrument which must be set before commencing to take an observation.

To set the index it must be brought down into the clear part of the stem just below the lines indicating the degrees. This is done by taking the thermometer firmly in the hand, and then by one or more rapid swings of the arm the index can be brought down.

When the index has been set, the bulb of the instrument is placed in the arm-pit, or any part where it can be completely covered by the soft parts, and after having been retained in position for five minutes, the instrument is carefully and gently removed. The top of the index, namely, the end farthest from the bulb, will denote the maximum temperature during the time the instrument has been in contact with the part.

Normal temperature.

The normal temperature, that is, the temperature of the body in health, is 98·4°.

In ascertaining the temperature, care should be taken that the clothes do not come between the bulb of the thermometer and the skin, and that no hot water bottle, poultice, or anything which might affect the temperature, is near it.

Respiration in disease.

217. The signs presented by respiration are of the highest importance. In diseased conditions it may be frequent or slow, rapid or prolonged, forcible or feeble, spasmodic, wheezing, or stertorous, and it may be difficult or laboured so that the patient cannot lie down.

Associated with disturbed respiration may be sneezing, coughing, hiccough, or a blue and congested state of the face and upper part of the body.

Cough.

218. Cough is a sign of irritation in the air-tubes, and shows that an attempt is being made to get rid of some matter interfering with respiration. It may occur occasionally, incessantly, or in paroxysms. It may be dry, that is to say, without expectoration, or moist, that is, with expectoration. It may be short and hacking, harsh, or hollow. It may occur at some particular time of the day or night, and not at other times. Whatever character it presents should be carefully noted.

Expectoration.

219. Expectoration is the act of coughing up matters from the air passages. The matter expectorated is called *sputum*. Every patient who expectorates should be pro-

OBSERVATION OF THE SICK—continued.

vided with a spitting cup, and the sputum should be kept for the medical officer's inspection. The sputum may be watery and frothy, yellow, thick, and purulent, rusty, or streaked with blood; or it may consist for the most part of blood, and then constitutes *hæmoptysis*.

Should blood be present, it should be carefully observed whether the patient coughs it up, vomits it, or brings it up from the back of the throat, the mouth, or the gums (*see* paragraph 164). While in use in the ward some disinfecting solution should be kept in the spitting cup.

Urine.

220. The quantity and character of the urine and the manner in which it is passed vary in disease. The patient may pass it more freely than usual, with or without pain, in a large or small stream, even in drops, or he may be unable to pass it at all, a condition which is called *retention of urine*.

The quantity may be increased, or diminished, or even suppressed altogether. The colour may vary from pale yellow to smoky red, and there may or may not be a deposit. If urine is kept for the officer's inspection and examination, it should be placed in a clean glass vessel, having a cover of paper, on which is written the patient's name and number and the date, and sent at once to the surgery.

State of bowels.

221. The stools should be observed as to colour, consistence, frequency, and nature, particularly as to the presence of blood or slime; and whether or not there is pain, griping, or straining in passing them. Stools retained for the inspection of an officer should not be kept in the ward.

Appetite and thirst.

222. Any variation in the appetite, whether for better or worse, and any peculiarity or fancy should be noted. Patients often take a dislike to some particular article of food, or express a wish for some other. Thirst should always be attended to, and gratified as far as possible.

15. TRAINING OF COMPOUNDERS.

Course of training and instruction.

223. Non-commissioned officers or privates who are eligible under paragraph 137 of the Standing Orders, and are desirous of qualifying as compounders will undergo a course of training and instruction under the personal superintendence of an officer, and of a duly

TRAINING OF COMPOUNDERS—continued.

qualified compounder in the surgery of a hospital for at least six months in the following subjects :—

(*a*) Latin names and words and the symbols used in prescriptions, and on the printed labels used in a dispensary.

(This will not include the translation from Latin to English of instructions as to the use and dose of medicines, which in accordance with the Regulations for Army Medical Services are invariably written in English in military hospitals.)

(*b*) The various drugs in the British Pharmacopœia ; their appearance, taste, odour, and dose.

(*c*) The officinal preparations of these drugs ; their composition and dose, and the quantities of their ingredients.

(*d*) Poisons ; their names, characters, dangerous doses, and antidotes or other remedial measures to be adopted in cases of poisoning.

(*e*) *Prescriptions.*—Reading, making up, labelling, and mode of administration of the remedies ordered.

(*f*) *Surgical instruments and other appliances.*—Their names and proper care.

(*g*) *Returns.*—The preparation of all returns, requisitions, and other documents required for the receipt, expenditure, and supply of surgical instruments, medical stores, medicines, &c.

Examination.

224. The rules regarding examination for compounders of medicines are contained in the Regulations for Army Medical Services.

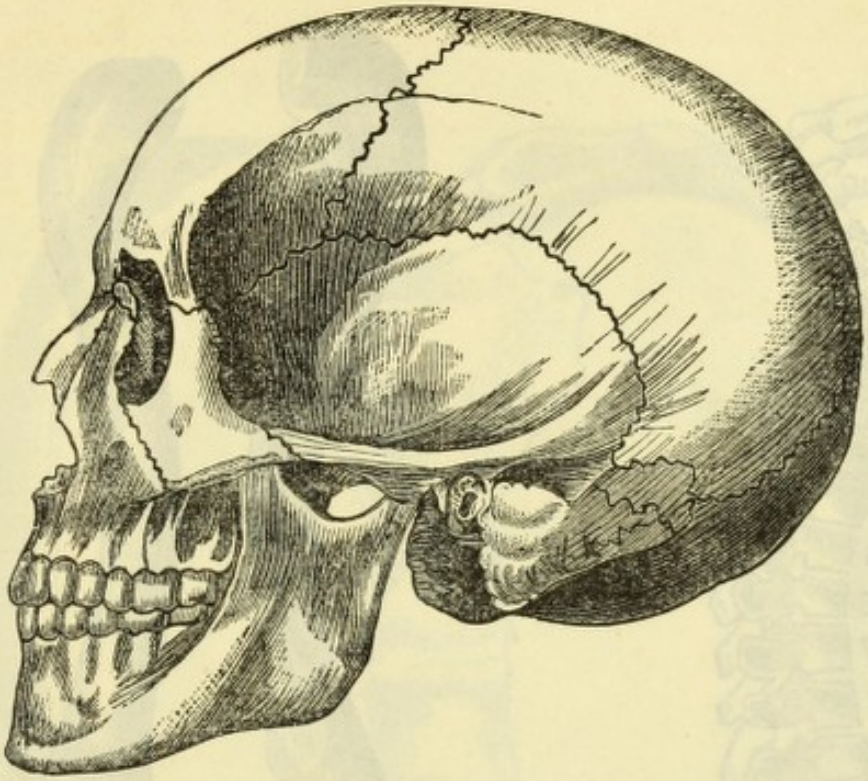


FIG. 32.—SKULL.

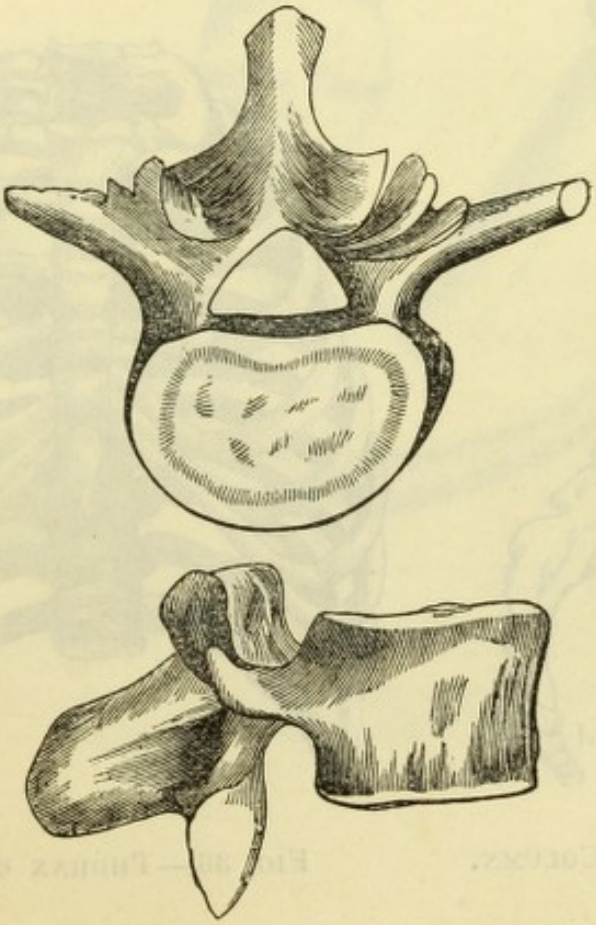


FIG. 33.—VERTEBRÆ.

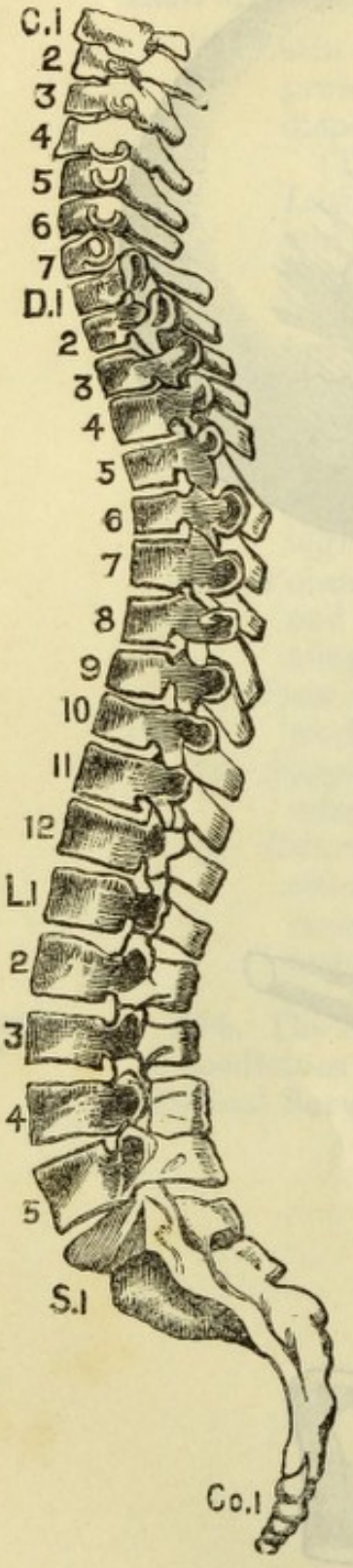


Fig. 34.—Spinal Column.



Fig. 35.—Clavicle or Collar Bone.

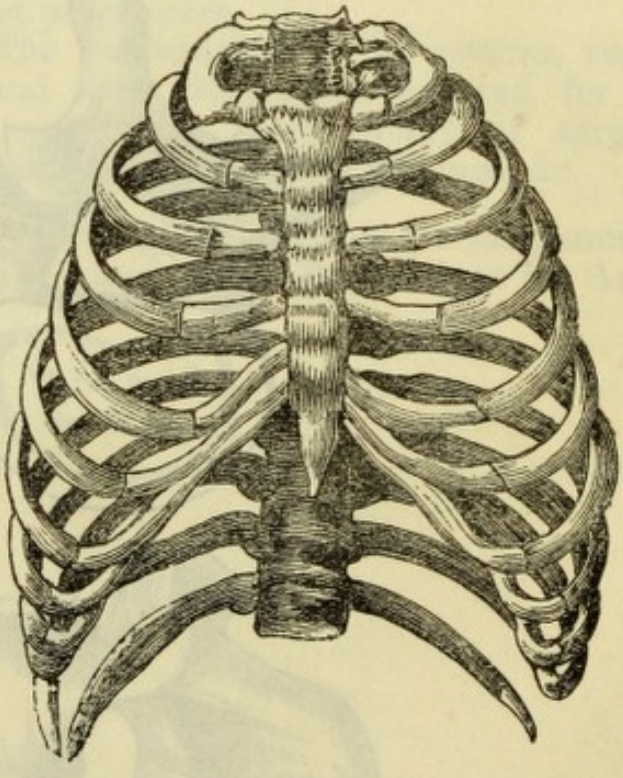


Fig. 36.—Thorax or Chest.

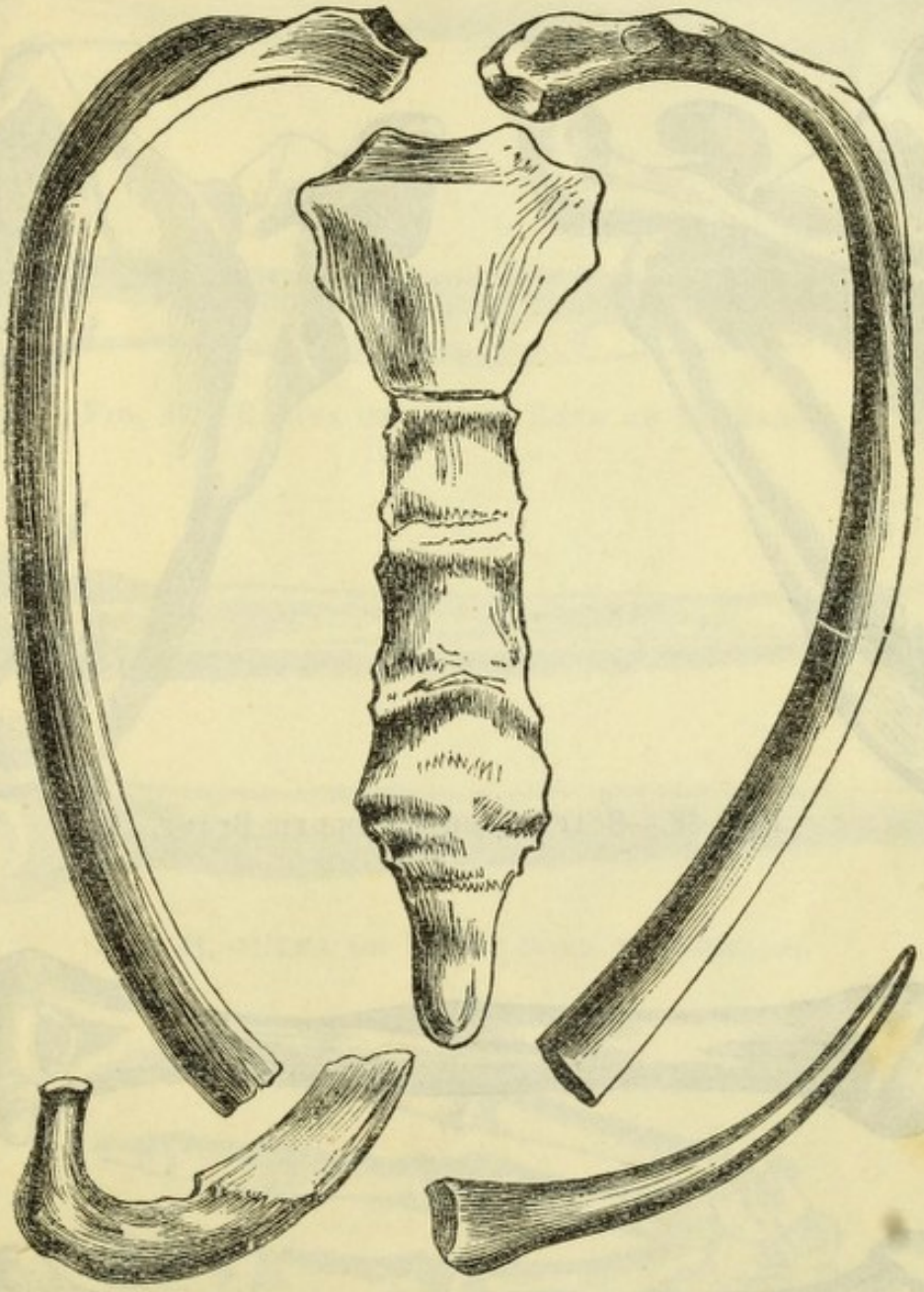


Fig. 37.—Sternum or Breast Bone, True Ribs, First Rib and Floating Rib.

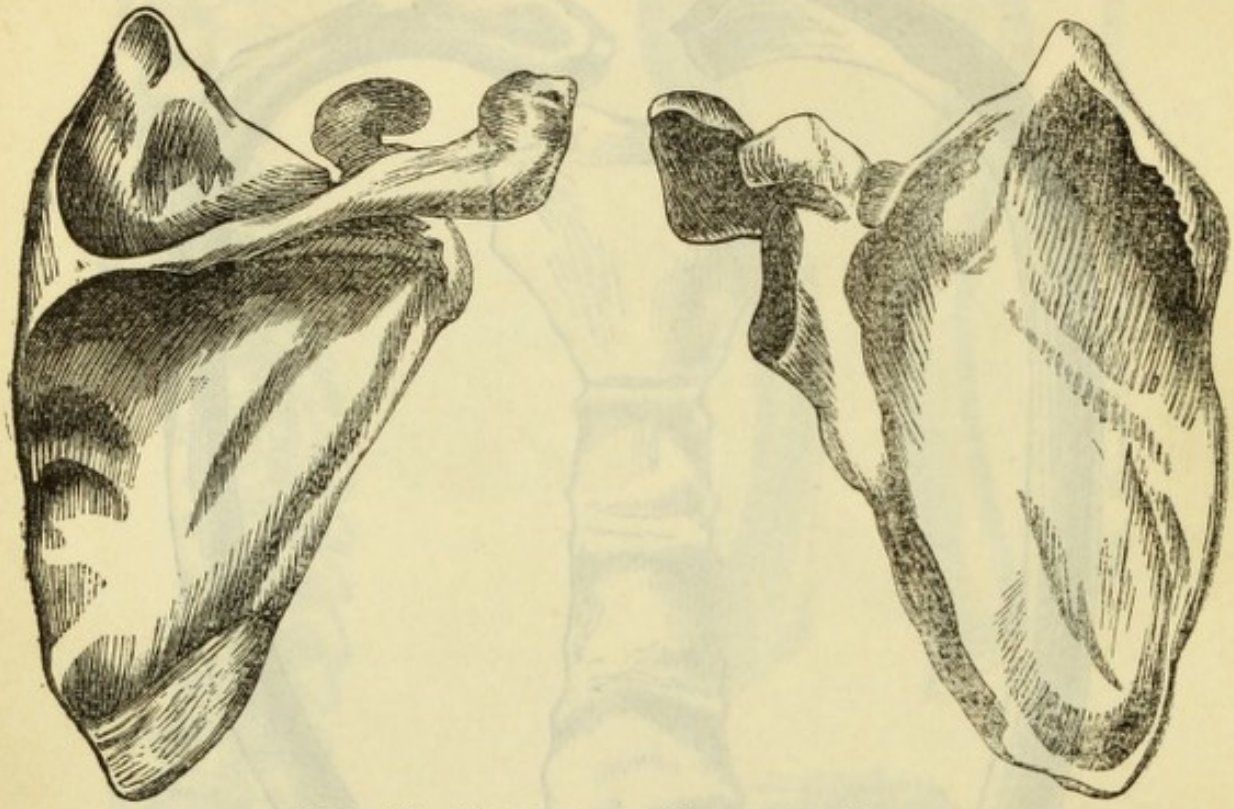


FIG. 38.—SCAPULA OR SHOULDER BLADE.

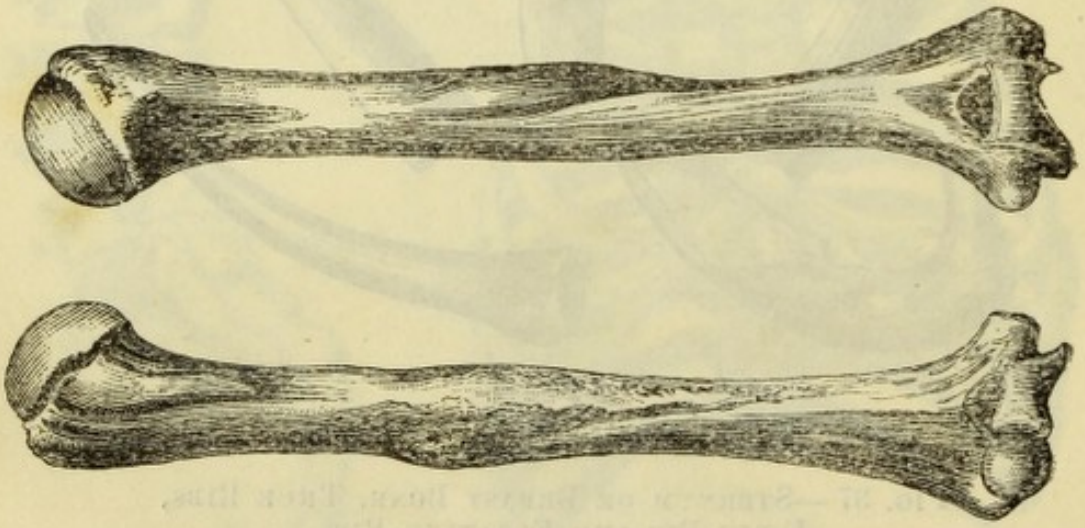


FIG. 39.—HUMERUS OR ARM BONE.

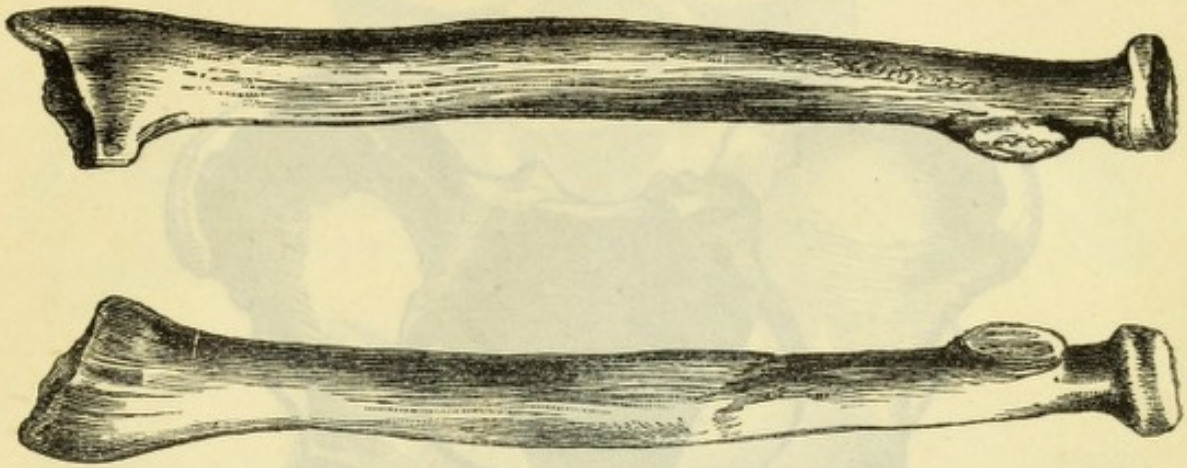


FIG. 40.—RADIUS OR OUTER BONE OF FOREARM.

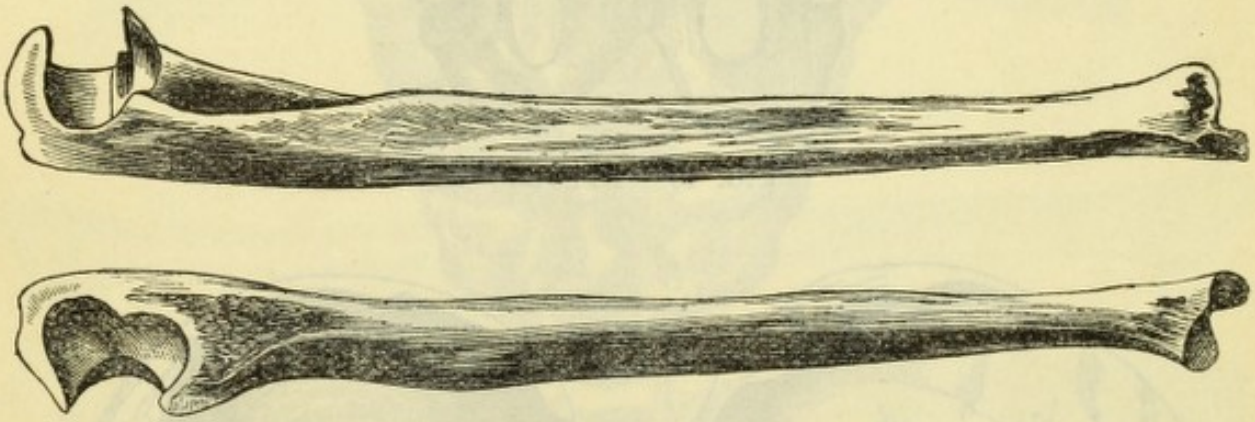


FIG. 41.—ULNA OR INNER BONE OF FOREARM.

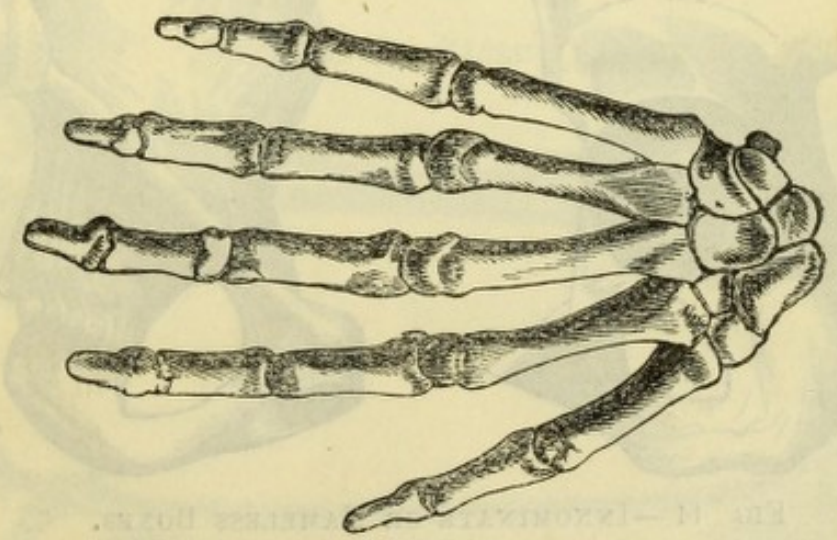


FIG. 42.—CARPUS, METACARPUS AND PHALANGES BONES OF WRIST, HAND, AND FINGERS.

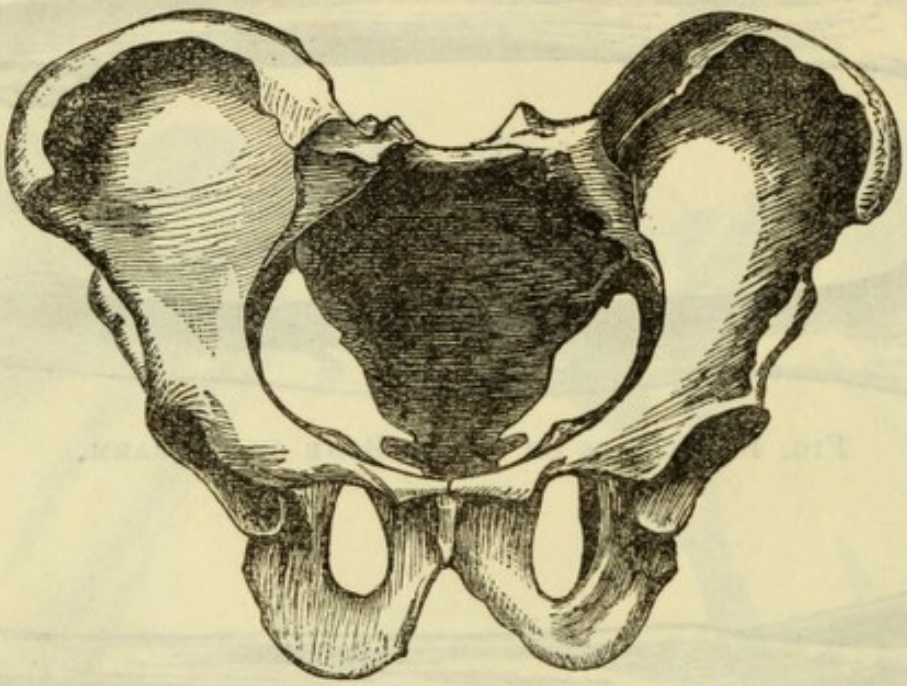


FIG. 43.—PELVIS.

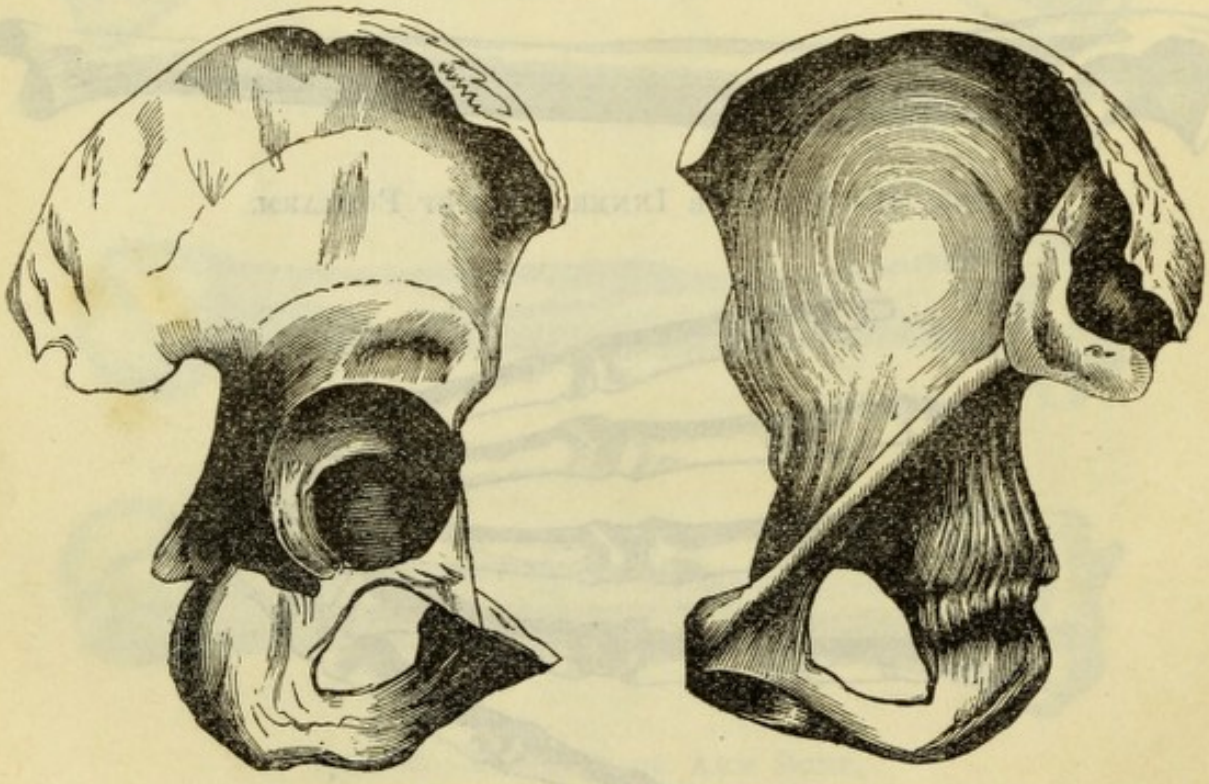


FIG 44.—INNOMINATE OR NAMELESS BONES.

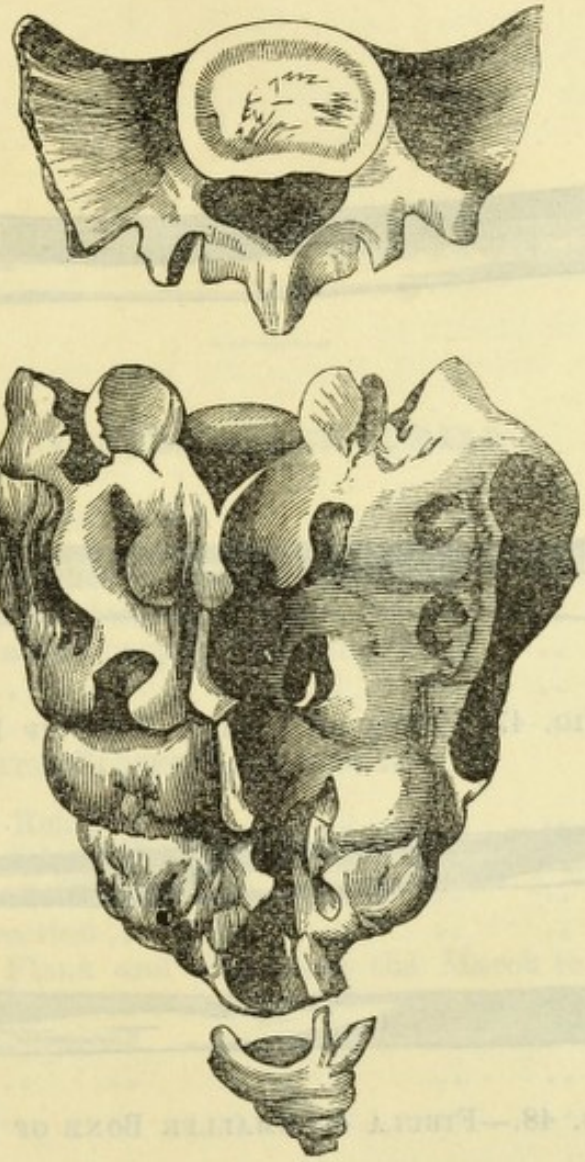


Fig. 45.—Sacrum.

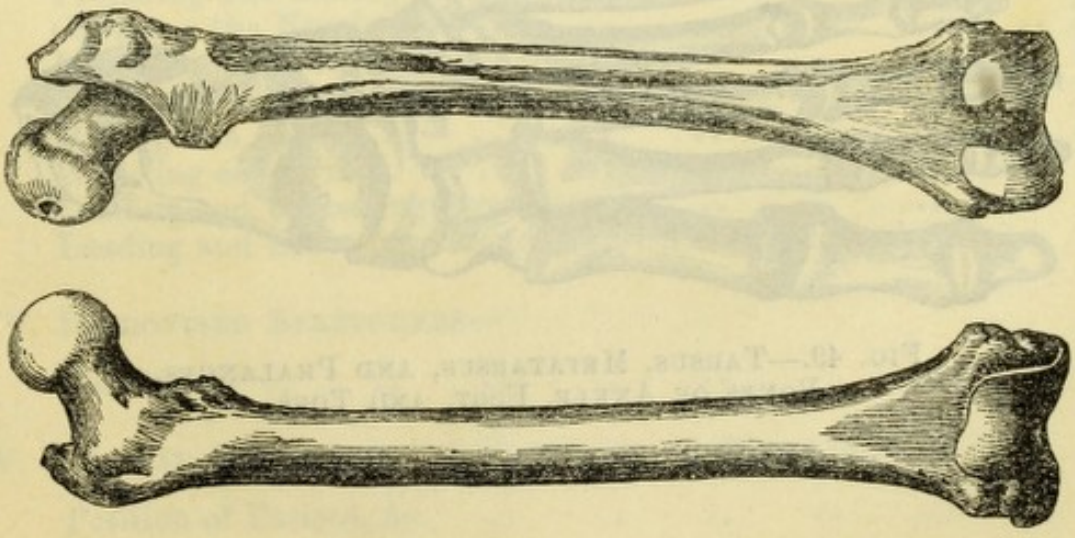


Fig. 46.—Femur or Thigh Bone.

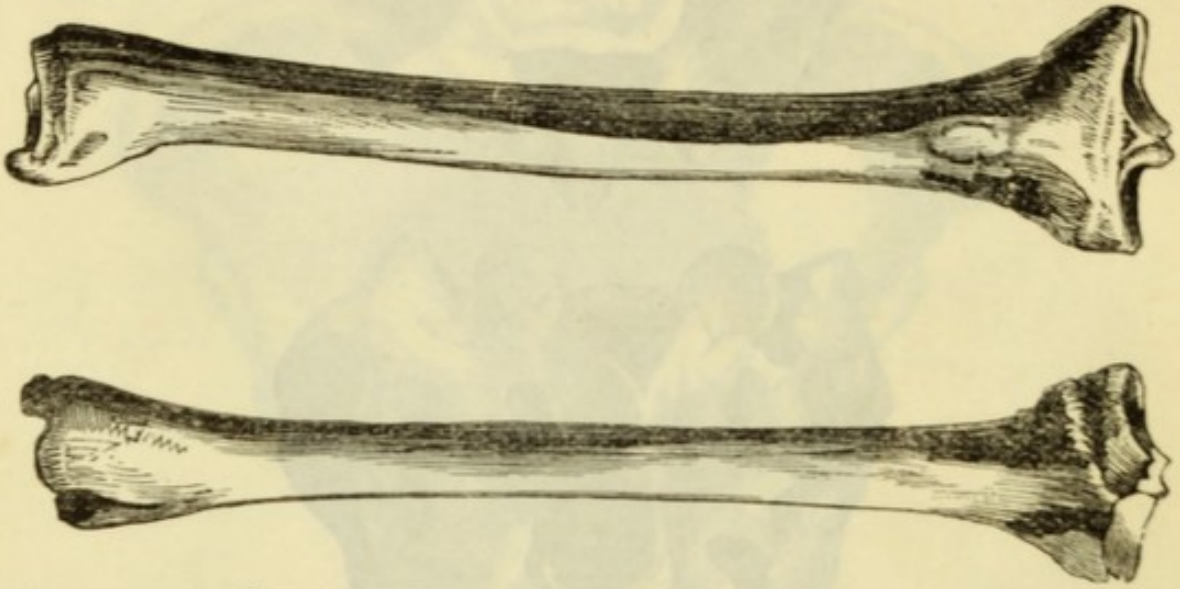


FIG. 47.—TIBIA OR LARGER BONE OF LEG.

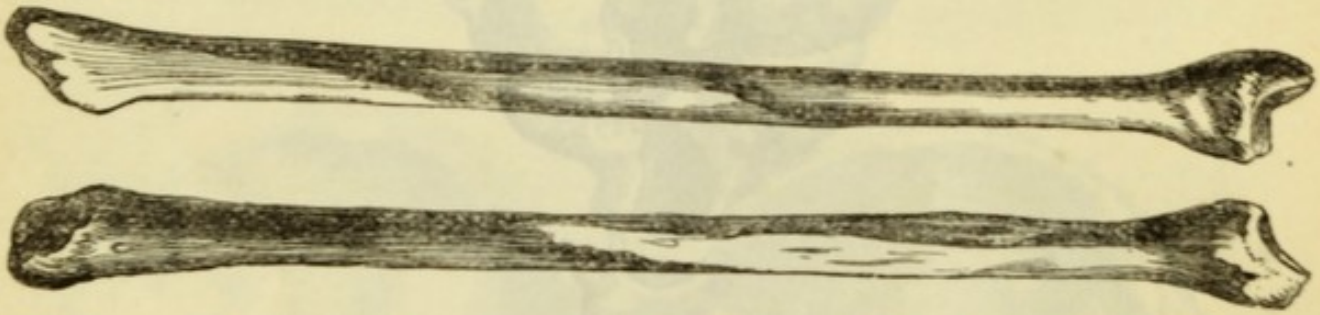


FIG. 48.—FIBULA OR SMALLER BONE OF LEG.

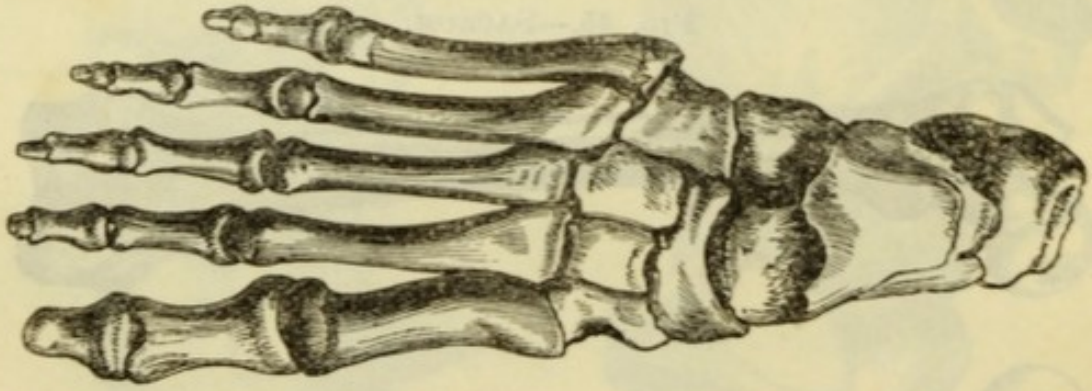


FIG. 49.—TARSUS, METATARSUS, AND PHALANGES, BONES OF ANKLE, FOOT, AND TOES.

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SECTION II.

MEDICAL STAFF CORPS DRILLS AND EXERCISES.

I. STRETCHER DRILL.

I. GENERAL REGULATIONS.

1. Preliminary Instruction and Dress.

Men detailed for this drill must be well grounded in Infantry squad and company drill, and the principles of working in extended order. They will parade without arms, or with side arms only, and in drill order. Knee caps will be worn at all exercises in which the men require to kneel, and on the left knee except where otherwise ordered. Soldiers detailed to act as "patients" will wear canvas suits to protect their clothing.

2. Description of Stretchers.

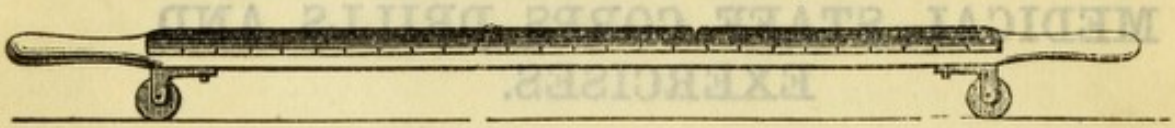
The regulation field stretchers in use are those known as Mark IV and V, which were designed by the late Surgeon-Major T. Faris.

Mark IV and V stretchers closely resemble each other, and for all practical purposes may be regarded as one and the same form of stretcher. In these stretchers the canvas, which is tanned, is fastened to the poles by copper nails through an edging of leather; the poles are square and kept apart the required distance by two flat, wrought-iron jointed bars called *traverses* and they are fitted with four *rackets* each carrying a three-inch wooden *roller*. A pillow and pair of shoulder slings are pro-

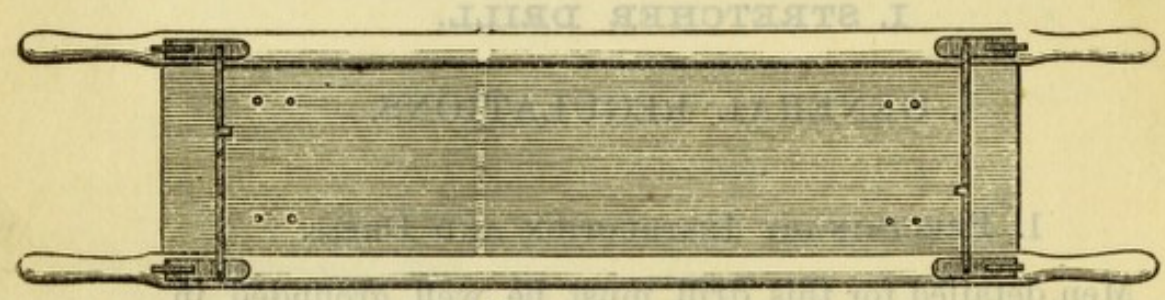
STRETCHER DRILL—continued.

vided with each stretcher. The pillows are wedge-shaped, varying from three and a half to one and a half inches in thickness, and are kept in the ambulance wagon for use with the stretchers supplied with the wagon. There are eyelet holes in the canvas of the stretcher at both ends for the attachment of the pillow at either end by strings. The *sling*, which is a broad leather strap, has at eitner

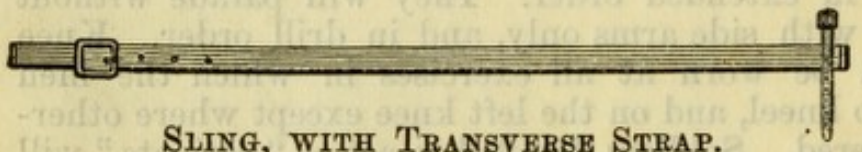
FIG. 50.—FARIS'S FIELD STRETCHER, MARK V.



SIDE ELEVATION.



PLAN, UNDER.



SLING, WITH TRANSVERSE STRAP.

end a loop, one of which is furnished with a buckle by means of which the sling can be lengthened or shortened, and at the opposite end is a narrow *transverse strap* fixed at right angles, which is buckled round the stretcher when closed.

The following are the dimensions and weight of the field stretcher :—

		ft.	ins.
Length	canvas	6	0
	pole....	7	9
Width, total		1	11
Height		0	$5\frac{7}{8}$
Weight		32 lbs.	
Tonnage		·08 tons.	

STRETCHER DRILL—continued.

3. FORMATION OF A COMPANY FOR STRETCHER DRILL.

Previous to the parade the stretchers will be laid in a heap on the ground.

The company will be formed up, sized, and numbered as in Infantry (ceremonial) Drill.

Fours will be formed.

Each section of four forms a stretcher squad.

Four squads form a stretcher section.

FRONT RANK. No. 1 BEARERS—STAND AT EASE.
SECOND RANK. No. 2 BEARERS—STAND AT EASE.
THIRD RANK. No. 4 BEARERS—STAND AT EASE.
FOURTH RANK. No. 3 BEARERS—STAND AT EASE.
} The bearers will thus be proved.

COMPANY—ATTENTION. As usual.

NUMBER THE SQUADS. On the word SQUADS the Nos. 1 number.

No. 4, 8, 12, 16, &c. On the number being called the Nos. 1 of the named squads raise the left hand level with the elbow.

LEFT OF SECTIONS. On the word SECTIONS the hands are dropped smartly to the side.

Section Commanders, who will act as guides and markers when required to do so, as in Infantry Drill, will now be posted.

NUMBER THE SECTIONS. On the word SECTIONS, the section commanders number.

No. 1, 2, &c., SECTION—STAND AT EASE. The sections will thus be proved.

COMPANY—ATTENTION. As usual.

NOS. 3—LEFT (OR RIGHT) TURN. The Nos. 3 turn to the flank named.

FILE ON STRETCHERS—QUICK MARCH. On the word MARCH the commander of the section of the flank named leads the Nos. 3 by the nearest route to the stretchers;

STRETCHER DRILL—continued.

each bearer in turn takes up a stretcher, places it on his right shoulder at "the slope," rollers to the front, holding the stretcher by the lower rackets, and marches on.

Mark Time in Front. The guide will give the command *Mark Time in Front* as soon as the leading bearer has gained sufficient ground to allow the last bearer to reach the stretchers, when he will give the command *About turn—Forward*, and lead the bearers back to their places when he will give the commands *Halt—Front—Lower Stretchers.*

About turn.
Forward.
Halt.
Front.
Lower Stretchers.

On the word *Stretchers* the stretchers will be placed on the ground, the lower ends being passed to the front, rollers to the right of the company.

STAND TO STRETCHERS. On the word STRETCHERS, the Nos. 1 place themselves with their toes in line with the front end of the poles, Nos. 3 with their heels in line with the rear end of the poles, Nos. 2 one pace in rear of Nos. 1, Nos. 4 one pace in front of Nos. 3. The whole touch the stretcher with the right foot.

LIFT STRETCHERS. On the word STRETCHERS the Nos. 1 and 3 stoop, grasp both handles of the poles with the right hand, and rise smartly together, holding the stretcher at the full extent of the arm, rollers to the right of the company.

RIGHT (OR LEFT) DRESS. The No. 1 of the flank squad stands fast, and the remaining Nos. 1 look to the flank named and take up their dressing, the other bearers looking to their front will cover and correct their distance as the Nos. 1 take up their dressing.

STRETCHER DRILL—continued.

Eyes Front.	Will be given by the right (or left) guide when the dressing is completed.
LOWER STRETCHERS.	On the word STRETCHERS, the Nos. 1 and 3 stoop, place the stretchers on the ground and rise smartly together.

4. DISMISSING.

LOWER STRETCHERS. ABOUT TURN. BY THE RIGHT (OR LEFT)—QUICK MARCH.	The company is marched clear of the stretchers.
HALT—FRONT. STAND AT EASE. STAND EASY.	As usual.
REMOVE KNEE-CAPS.	Knee-caps are taken off and collected.
COMPANY— ATTENTION. RIGHT TURN. DISMISS.	The company will break off as in Infantry Drill.

II. EXERCISES WITH CLOSED STRETCHERS.

5. ADVANCING OR RETIRING.

LIFT STRETCHERS.	As before detailed.
THE COMPANY WILL ADVANCE. BY THE RIGHT (OR LEFT), QUICK MARCH.	The company will advance, being directed by the guide on the named flank.
THE COMPANY WILL RETIRE. ABOUT TURN. THE COMPANY WILL ADVANCE. ABOUT TURN.	In these movements the bearers turn about towards the stretcher, which will be passed from one hand to the other by the Nos. 1 and 3.

STRETCHER DRILL—continued.

6. CHANGING STRETCHERS.

CHANGE STRETCHERS. If the company is advancing, on the word STRETCHERS the Nos. 1 will pass the stretchers from one hand to the other behind them, the Nos. 3, seeing this done, will pass the stretchers in front of them from one hand to the other, the Nos. 2 and 4 moving diagonally to their places. If the company is retiring the Nos. 1 act as above described for Nos. 3, and the Nos. 3 as for Nos. 1.

7. CHANGING FRONT.

RIGHT (OR LEFT) FORM. On the word FORM, the No. 1 of the squad on the flank named turns to the right (or left), the remainder of the Nos. 1 make a half right (or left) turn and the Nos. 2, 3, and 4 make a half left (or right) turn.

QUICK MARCH. On the word MARCH, all except the No. 1 of the inner flank step off and move by the shortest line to their places in the new front, halt, and are dressed by the guide on the flank of formation, who will give the command *eyes front* when the dressing is completed.

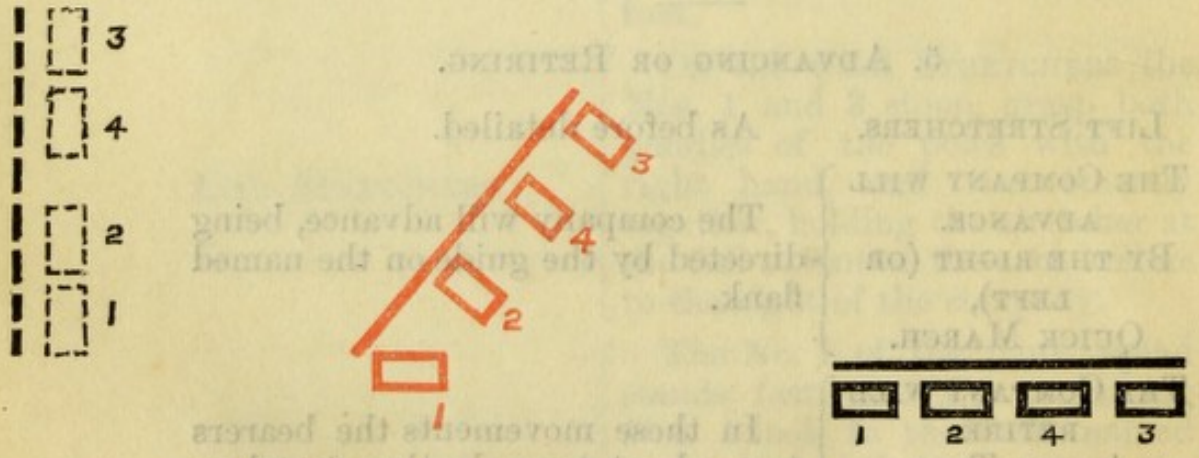


FIG. 51.—RIGHT SQUAD OF COMPANY WITH CLOSED STRETCHERS FORMING TO THE RIGHT.

STRETCHER DRILL—continued.

8. CHANGING DIRECTION.

RIGHT (OR LEFT) FORM. — The No. 1 of the squad on the right (or left) turns to the right (or left) and marks time, the remainder of the Nos. 1 make a half right (or left) turn, the rest of the bearers make a half left (or right) turn, the whole form on the No. 1 of the flank named, and each marking time takes up his dressing and looks to his front as he arrives in his place.

When the company is at the *halt*, and it is intended to move off on a new front, the word of command will be ON THE MOVE—RIGHT (OR LEFT) FORM—QUICK MARCH, followed by FORWARD when the requisite angle has been reached.

9. MOVING TO A FLANK AND RESUMING THE MARCH TO THE FRONT OR REAR.

THE COMPANY WILL MOVE TO THE RIGHT (OR LEFT), NOS. 2 (OR 4) TAKING THE STRETCHERS. — On the word STRETCHERS Nos. 2 (or 4) will take hold of the stretchers left hand on top, right hand beneath, with the hands far apart, and place them on their shoulders at the "slope."

RIGHT (OR LEFT) TURN. — The company will turn as directed.

This movement is only used where it is necessary to make a quick movement to either flank.

THE COMPANY WILL ADVANCE. FRONT TURN. — If the company is required to advance while marching to a flank with sloped stretchers, on the word TURN the whole turn to the front, the Nos. 2 (or 4) will bring the stretchers down to the "trail" with both hands, passing the lower ends to Nos. 1, and the upper ends to Nos. 3.

STRETCHER DRILL—continued.

THE COMPANY WILL RETIRE. CHANGE STRETCHERS.

If the company is required to retire while marching to a flank with sloped stretchers, the command CHANGE STRETCHERS will be given after the caution, on which the Nos. 2 (or 4) will change the stretchers from the right to the left shoulder.

REAR TURN.

The company will turn as directed, Nos. 2 (or 4) bring the stretchers down to the trail, passing the lower ends to Nos. 3, and the upper ends to Nos. 1, who will grasp them with their left hands.

10. FORMATION OF SECTIONS.

ADVANCE IN SECTION COLUMN. No. 1 SECTION TO THE FRONT—REMAINDER HALF-RIGHT TURN. *No.* — *Section by the left—Quick March. Front turn by the left.*

From the halt.—On the word TURN the commander of No. 1 Section gives the command, *No.* 1 *Section by the left—Quick March*, placing himself on the directing flank in line with the leading rank; the remaining sections turn half-right, and their commanders repeat the command when their sections are disengaged from the section on their right, and give *Front turn by the left* as each arrives in column.

ADVANCE IN SECTION COLUMN. No. 1 SECTION TO THE FRONT—REMAINDER—MARK TIME—HALF-RIGHT TURN. *No.* 1 *Section by the left. No.* — *Section. Forward. Front turn by the left.*

On the march.—No. 1 section leads on, the commander of that section giving the command, *No.* 1 *Section by the left*, the other section commanders giving the commands *Forward* when disengaged from the section on their right, and *Front turn by the left* when in column.

The other movements of sections are as laid down in Infantry Drill, on the command FORM COMPANY rear sections moving up to their places by the diagonal march in double time.

STRETCHER DRILL—continued.

11. EXTENDING.

FROM THE RIGHT (LEFT, CENTRE, OR No. — SQUAD) TO FOUR PACES EXTEND.

From the halt.—On the word EXTEND, the named squad stands fast, the remainder turn outwards (*i.e.*, away from the named squad), step off in quick time covering correctly without opening out. As each squad completes the paces of extension ordered it will halt and front, the No. 1 of the squad, before turning, tapping the No. 1 of the squad in front of him on the shoulder.

On the march.—When a company on the march is ordered to extend, the squad named will move on in quick time, the remainder making a half-turn outwards, will double to their places, turn to the front, and resume quick time.

12. CLOSING.

ON THE RIGHT (LEFT, CENTRE, OR No. — SQUAD) CLOSE.

From the halt.—On the word CLOSE the named squad will stand fast, the remainder turning towards it, will close in quick time, halting and fronting as they arrive at their places.

On the march, the named squad will move on, the remainder, making a half-turn towards it, will close on it at the double, turning to their front and resuming quick time on reaching their places.

In closing, the squads will be careful to preserve the proper distance of 27 inches from one another.

III. EXERCISES WITH PREPARED STRETCHERS.

13. PREPARING AND CLOSING STRETCHERS.

The preparing of stretchers and all movements with prepared stretchers are performed in extended order.

STRETCHER DRILL—continued.

PREPARE STRETCHERS. Nos. 1 and 3 turn to the right, kneel on the left knee, unbuckle the transverse straps, separate the poles and straighten the traverses. Each taking a sling, doubles it on itself, dressed side of the leather outwards, slips the loop thus formed on the near handle and places the free ends over the opposite handle, buckle uppermost. They then rise and front together, working by the right.

CLOSE STRETCHERS. Nos. 1 and 3 turn to the right, kneel on the left knee, remove the slings and place them on the ground, push in the traverses, raise the canvas, approximate the poles, rise, lifting the stretcher, face one another, place the handles of the poles between their thighs, rollers to the right of the company, and roll the canvas tightly round the poles to the right. Each takes up a sling, passes the buckle end to the other, threads the transverse strap through the loop of the other sling and buckles tightly, close to the rackets. Grasping both handles in their right hands, back of the hand to the right, they turn to the right of the company in a slightly stooping position, rise and front together.

14. CHANGING THE NUMBERS.

In order to instruct each man in a squad, the numbers must be changed. This can be done by either of the following methods, when the men are standing to stretchers in extended order.

NOS. 2 AND 4—TWO PACES LEFT CLOSE.
QUICK MARCH.
NOS. 1 AND 4—ABOUT TURN.
COMPANY—
ONE PACE FORWARD—
MARCH.
FRONT.
STAND TO STRETCHERS.

The Nos. 2 and 4 thus become Nos. 1 and 3.

STRETCHER DRILL—continued.

NOS. 1 AND 2—TWO PACES LEFT CLOSE—QUICK MARCH.
NOS. 1 AND 2—ABOUT TURN.
COMPANY—TWO PACES FORWARD—MARCH.
FRONT.
STAND TO STRETCHERS.

The Nos. 3 and 4 thus become Nos. 1 and 2.

15. LIFTING AND LOWERING STRETCHERS.

To facilitate instruction this should first be taught by numbers and afterwards judging the time.

In turning about, when beside the prepared stretcher, Nos. 2 and 4 always turn away from the stretcher.

LIFT STRETCHERS.

Nos. 1 and 3 stoop, grasp the doubled sling midway between the poles with the forefinger and thumb of the right hand, sweep it off the handles, rise, take a side pace to the right between the handles of the poles and place the sling over the shoulders, dividing it equally, buckle on the right.

Two.

On the word *Two* stoop, slip the loops over the poles, commencing with the left, and grasp the handles firmly.

Three.

On the word *Three* rise slowly together lifting the stretcher, No. 3 conforming closely to the movements of No. 1.

ADJUST SLINGS.

Nos. 2 take two paces to the front, the Nos. 2 and 4 turn about together (the Nos. 4 turning away from the stretcher), adjust the sling over the shoulders of Nos. 1 and 3, taking care that it lies below the collar of the frock behind, and in the hollow of the shoulders in front. Nos. 2 take two paces to the rear, and Nos. 2 and 4 then front together.

STRETCHER DRILL—continued.

LOWER STRETCHERS. Nos. 1 and 3 slowly stoop and place the stretcher gently on the ground, slip the loops from the handles, and stand up, remove the slings from the shoulders, double them as before described, and hold them at their centre between the forefinger and thumb of the right hand, buckle to the front, hand close to the side.

Two. On the word *two* they stand to stretchers, stoop, place the sling on the poles as in preparing stretchers and rise together.

16. ADVANCING OR RETIRING.

BY THE CENTRE—ADVANCE. Nos. 4 turn outwards and double round the head of the stretcher to the centre of the opposite pole. Nos. 1, 2 and 4 step off with the left foot, No. 3 with the right, in quick time, taking a short pace of twenty inches, knees bent, feet raised as little as possible, the Nos. 2 stepping short two paces which brings them opposite Nos. 4. The Instructor will see that the squad of direction marches straight on the point given, takes the correct pace, both as regards length and cadence, and that the remainder preserve their interval and alignment.

BY THE CENTRE—RETIRE. Each squad will move round on the circumference of a circle of which its No. 3 is the centre. No. 3 will mark time, turn gradually in the direction named, and the whole move forward when square.

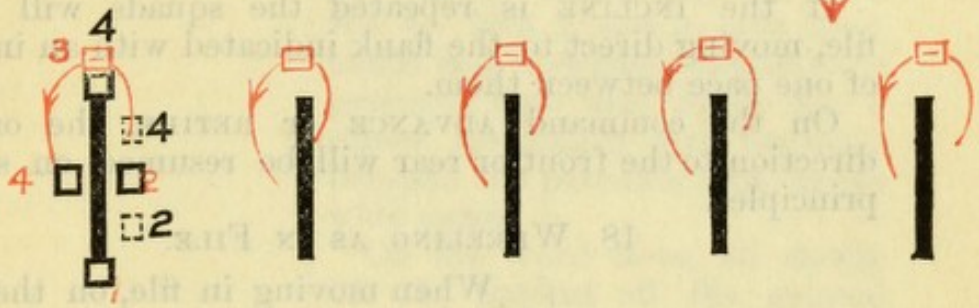
BY THE CENTRE—ADVANCE. Each squad will resume the original direction to the front by a movement similar to that detailed for retiring.

HALT. Nos. 1 and 3 halt, Nos. 2 step up a pace, Nos. 4 turn outwards and double round the head of the stretcher to their places.

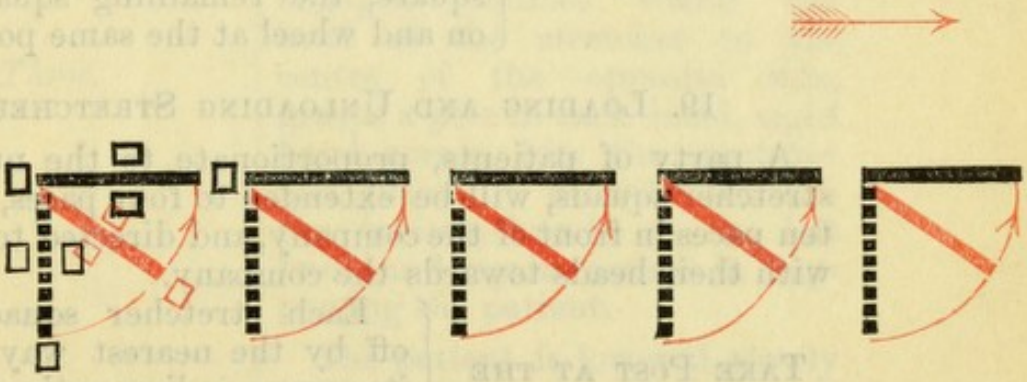
At the halt in extended order.



"By the centre—Advance."



Marching in file to a flank—"Left incline."—"Left incline."



"By the centre—Retire."

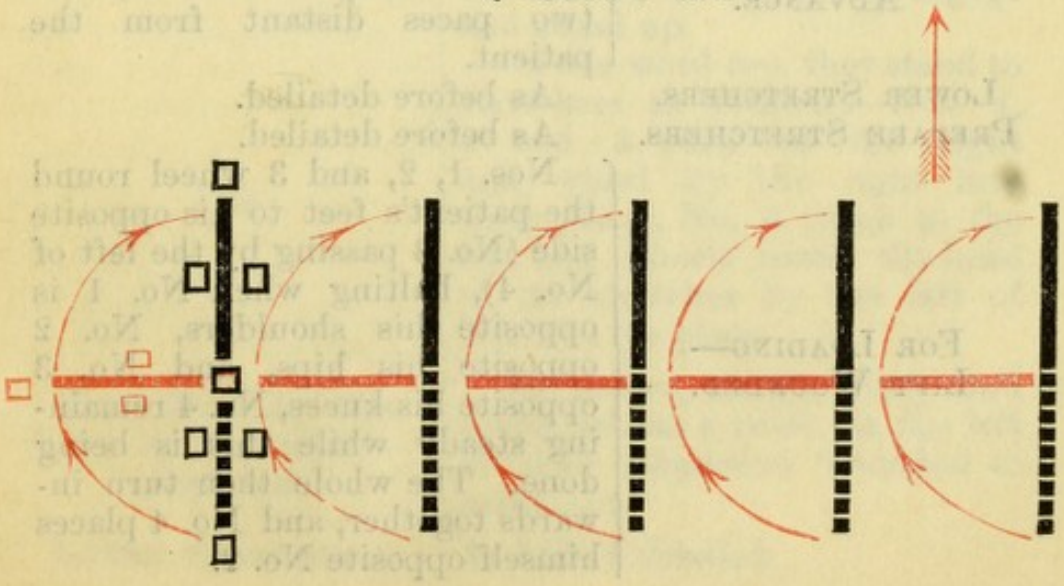


FIG. 52.—MARCHING WITH PREPARED STRETCHERS.

STRETCHER DRILL—continued.

17. MOVING TO A FLANK.

RIGHT (OR LEFT) INCLINE. Each squad will move round on the circumference of a circle, of which its No. 3 is the centre, one-eighth to the right (or left). No. 3 will mark time, turn gradually in the direction named and the whole will move forward when facing in the new direction.

If the INCLINE is repeated the squads will be in file, moving direct to the flank indicated with an interval of one pace between them.

On the command ADVANCE or RETIRE, the original direction to the front or rear will be resumed on similar principles.

18. WHEELING AS IN FILE.

LEFT (OR RIGHT) WHEEL. When moving in file, on the word WHEEL the leading squad will wheel to the left (or right) leading on when square, the remaining squads move on and wheel at the same point.

19. LOADING AND UNLOADING STRETCHERS.

A party of patients, proportionate to the number of stretcher squads, will be extended to four paces, marched ten paces in front of the company, and directed to lie down with their heads towards the company.

TAKE POST AT THE RIGHT OF WOUNDED—ADVANCE. Each stretcher squad moves off by the nearest way towards its corresponding patient, halting opposite to, parallel with, and two paces distant from the patient.

LOWER STRETCHERS. As before detailed.

PREPARE STRETCHERS. As before detailed.

FOR LOADING—LIFT WOUNDED. Nos. 1, 2, and 3 wheel round the patient's feet to his opposite side (No. 3 passing by the left of No. 4), halting when No. 1 is opposite his shoulders, No. 2 opposite his hips, and No. 3 opposite his knees, No. 4 remaining steady while this is being done. The whole then turn inwards together, and No. 4 places himself opposite No. 2.

STRETCHER DRILL—continued.

Two.	On the word *two*, kneel on the left knee and take hold of the patient, No. 1 passing his left hand across the patient and under his right shoulder, his right hand beneath the patient's left shoulder. The patient will be directed to clasp his hands round the neck of No. 1. Nos. 2 and 4 pass their hands and forearms beneath the patient's hips and loins, No. 3 passes his hands and forearms beneath the patient's legs, hands wide apart.
Three.	Oh the word *three*, all slowly lift the patient off the ground and rest him on the knees of Nos. 1, 2 and 3, No. 4 disengages, doubles round the head of the stretcher to the centre of the opposite side, grasps a pole in each hand, right hand across, lifts the stretcher and places it directly beneath the patient, kneels on the left knee and again assists in supporting the patient.
LOWER WOUNDED.	The patient is lowered slowly and gently on to the centre of the canvas, the bearers disengage and stand up.
Two.	On the word *two*, they stand to stretchers as follows:—Nos. 1, 2 and 3 turn to the right and wheel by the right into their places, No. 4 turns to the left and wheels round the head of the stretcher by the left of No. 3 to his place.
TAKE POST AT THE LEFT OF WOUNDED—ADVANCE.	As before, except that each squad selects a point on the left of their respective wounded to march on.
LOWER STRETCHERS.	As before detailed.

STRETCHER DRILL—continued.

PREPARE STRETCHERS. As before detailed.

FOR LOADING—LIFT WOUNDED. The whole wheel round by the foot of the stretcher, No. 4 passing between the stretcher and the patient, Nos. 1, 2, and 3 by the patient's feet to his opposite side, the whole taking up the positions described above.

Two. As before.

Three. As before.

LOWER WOUNDED. As before.

Two. On the word *two*, they stand to stretchers, as follows :—the whole turn to the left, Nos. 1, 2, and 3 wheel round the head of the stretcher and pass by the left of No. 4 to their places, No. 4 steps back one pace.

FOR UNLOADING—LIFT WOUNDED. No. 4 turning outwards doubles round the head of the stretcher to the centre of the opposite side, and the whole turn inwards together, No. 1 placing himself opposite the knees, No. 2 opposite the hips, and No. 3 opposite the shoulders of the patient.

Two. On the word *two*, the whole kneel and take hold of the part of the patient to which they are opposite, as described.

Three On the word *three*, the patient is lifted and supported as before. No. 4 grasps the stretcher as described, steps back two paces, places it on the ground, doubles back to his place round the head of the stretcher, and resumes the support of the patient.

LOWER WOUNDED. The patient is gently lowered to the ground, the bearers disengage and stand up.

Two. On the word *two*, they stand to stretchers, as follows :—

The whole turn to the left, Nos. 1, 2, and 3 wheel by the left round the head of the patient to their places, No. 4 falling in between 2 and 3, as they pass him.

STRETCHER DRILL—coutinued.

20. LOADING AND UNLOADING STRETCHERS WITH REDUCED NUMBERS.

With Three Bearers.

In the event of there being only three bearers available, the stretcher will be placed at the patient's head, and in the same line as his body. The bearers will then lift the patient, rise to the erect position, carry him head foremost over the foot of the stretcher, the horizontal position of his body being maintained throughout the movement, and then lay him in a suitable position on the canvas. When unloading, the patient will be lifted and carried head foremost over the head of the stretcher. To lift the patient :—one bearer, placing himself on the injured side in a line with the patient's knees, raises and supports the lower limbs, while the other two, kneeling on opposite sides of the patient near his hips, facing each other, each pass an arm under his back and thighs, lock their fingers so as to secure a firm grasp, and raise and support the trunk.

With Two Bearers.

When only two bearers are available, the stretcher will similarly be placed at the patient's head, and in the same line as his body. The bearers will then lift the patient, rise to the erect position, carry him, in loading, head foremost over the foot of the stretcher, and in unloading, head foremost over the head. The method of lifting will vary according to whether the lower limbs are severely injured or not. (*a*) With a severe injury of one of the lower limbs, both bearers place themselves on the injured side : the one in a line with the patient's knees must raise and support the lower limbs, the one near the patient hips, the body ; assisted by the patient himself as far as possible, the horizontal position of the patient's body being maintained throughout the movement. (*b*) With the lower limbs intact, or only slightly injured, the patient may be lifted by one of the improvised seats described in the next section, provided there are no symptoms of shock present ; in the latter case, method (*a*) must be resorted to.

STRETCHER DRILL—continued.

IV. IMPROVISED STRETCHERS.

21. VARIETIES OF.

When field stretchers are not available, the wounded may be carried short distances by means of improvised stretcher. The principal of these is the *rifle stretcher*, formed of two rifles with fixed bayonets and a rug, by which four bearers can remove a patient in the recumbent posture.

The following is a very simple and excellent way of forming a rifle stretcher, suggested by Sergeant F. J. Spary, Medical Staff Corps :—Spread a blanket on the ground ; lay two rifles parallel to one another, each ten inches from the centre of the blanket, both muzzles pointing in the same direction, trigger guard outwards ; turn a fold of the rug, six inches wide, over the ends of the butts ; fold the right side of the rug over the rifle on that side, to the rifle on the opposite side, then similarly fold the left side. A stretcher is thus formed, consisting of three folds of blanket, the end at which the butts are, being the head end. It can be lifted and carried in the same manner as is laid down for carrying field stretchers when loading wagons.

A rifle before being used as a stretcher pole will invariably be inspected, and if found to be loaded the cartridge will be withdrawn, and the magazine emptied.

Improvised stretchers can also be made of lances, or other poles, bamboo, &c., with rugs, great-coats, cloaks, canvas, &c.

V. GENERAL RULES FOR THE CARRIAGE OF STRETCHERS.

22. POSITION OF PATIENT, &c.

The following rules are condensed from Professor Sir T. Longmore's " Treatise on Ambulances."

Consideration of the nature of injury.

(1.) Special care should always be taken to notice the part injured and the nature of the injury, as these determine in a great measure the position in which the patient should be placed during transport. In all cases the head should be kept low, and on no account pressed forward on the chest.

In wounds of the head care should be taken that the

STRETCHER DRILL—continued.

patient is so placed that the injured part does not press against the conveyance.

In wounds of the lower limb the patient should be laid upon his back inclining towards the injured side ; such position being less liable to cause motion in the broken bone during transport in cases of fracture.

In wounds of the upper limb, if the patient require to be placed in a lying-down position, he should be laid on his back, or on the uninjured side ; as in cases of fracture there is less liability in such a position of the broken bones being injured during transport.

In wounds of the chest there is often a difficulty of breathing. In such cases the patient should be placed with the chest well raised, his body at the same time being inclined towards the injured side.

In transverse or punctured wounds of the abdomen, the patient should be laid on his back, with his legs drawn up, so as to bring the thighs as close to the belly as possible ; a pack or other article being placed under his hams to keep his knees bent. If the wound be vertical, his legs should be extended.

Adjustment of slings.

(2.) Care should be taken at starting that the slings are buckled so that the parts supporting the poles are all at equal distances from the surface of the ground.

Carriage of the patient.

(3.) The patient is usually carried feet first, but in going up hill the position is reversed, and the patient is carried head first. To do this the bearers will lower the stretcher and turn about. If the patient is suffering from a recent fracture of the lower extremity he will, in all cases, be carried with his head down hill. The stronger and taller bearer should be down hill.

Carriage of stretcher.

(4.) Under all circumstances the stretcher should, as far as possible, be carried in the horizontal position, which may be maintained, in passing over uneven ground, by raising or lowering the ends of the stretcher.

Necessity for practice.

It is an important matter for bearers to practise the carriage of stretchers, so as to acquire facility in keeping the stretcher level on uneven ground. Bearers trained and habituated to this duty perform it with ease and dexterity, irrespective of differences in their heights ; while those who have not practised it are not unlikely to cause considerable distress to the patient when they have to carry him up and down hill. A concerted action of the front and rear bearers is necessary, and each must be aware what part he is to perform according as the end of the stretcher at which he is placed

STRETCHER DRILL—continued.

is rendered higher or lower by the unevenness of the surface over which they are passing. This can best be acquired by practising the carriage of the stretcher up and down steps, or over uneven ground.

Passing a wall or fence.

No attempt will be made to carry a helpless patient over a high fence or wall, if it can possibly be avoided, as such is always a dangerous proceeding. A portion of the wall should be thrown down, or a breach in the fence made, so that the patient may be carried through on the stretcher; or, if this be not practicable, the patient should be carried to a place where a gate or opening already exists, notwithstanding the distance to be traversed may be increased by the proceeding. It is better to do this than risk the safety of the patient.

Crossing a ditch.

In crossing a ditch, the stretcher should be first laid on the ground near its edge. Nos. 1 and 2 then descend. The stretcher, with the patient upon it, is afterwards advanced. Nos. 1 and 2 in the ditch supporting the front end of the stretcher, while its other end rests on the edge of the ground above. While thus supported, Nos. 3 and 4 descend. All the Nos. now carry the stretcher to the opposite side, and the fore part is made to rest on the edge of the ground while the rear part is supported by Nos. 3 and 4 in the ditch, and Nos. 1 and 2 climb up. The stretcher is lifted forward on the ground above, and rests there while Nos. 3 and 4 climb up. The bearers then resume the carriage of the stretcher.

Stretcher not to be carried on the houlders.

On no account will bearers carry a stretcher on their shoulders, as it is necessary that one of them should have the patient in view. In the event, also, of the patient's falling from such a height, owing to one of the bearers tripping or being wounded, his injuries might be considerably aggravated.

II. HAND SEAT DRILL.

23. FORMATION OF HAND SEATS.

The company will be drawn up in two ranks, and, after each exercise has been gone through, ranks will be changed, so that the men may be equally drilled.

FROM THE RIGHT (LEFT, CENTRE, OR No. ——)— TO FOUR PACES EXTEND. } As in Stretcher Drill.

HAND SEAT DRILL—continued.

FORM TWO-HANDED SEATS. Each rear-rank man takes a side pace to his left and two to the front, aligning himself on the left of his front rank man, and both turn inwards together.

Two. On the word *two*, the rear rank man locks the fingers of his left hand with the fingers of the right hand of the front rank man, palms uppermost, and both place the disengaged hand upon each other's hips.

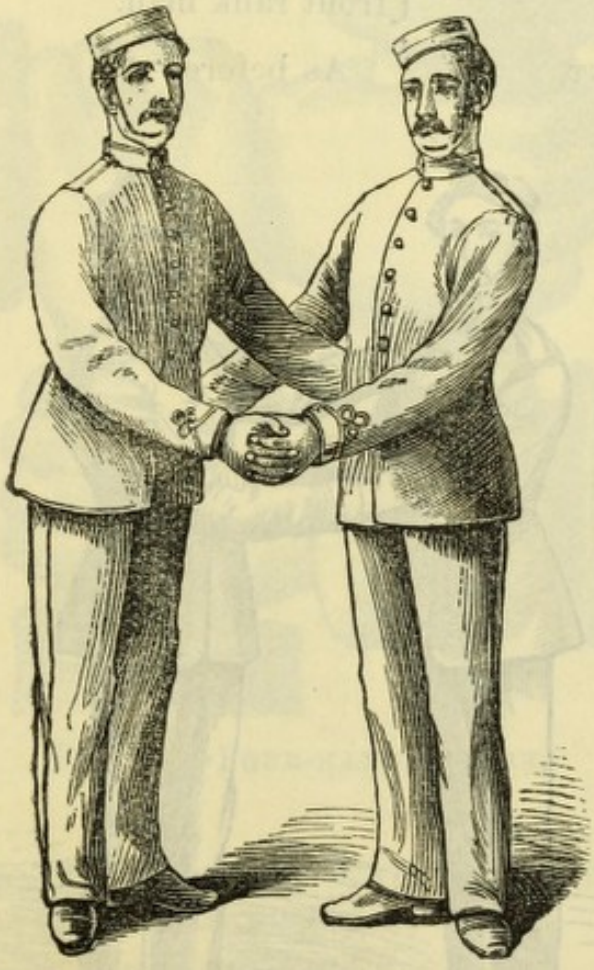


FIG. 53.—TWO-HANDED SEAT.

FRONT. The front and rear rank men disengage, and turn to the front, the rear rank man taking two paces to the rear and a side pace to the right, so as to again cover his front rank man.

HAND SEAT DRILL—continued.

FORM THREE-HANDED SEATS.

As in two-handed seats.

Two.

On the word *two*, the front rank man grasps his own left forearm. The rear rank man grasps the right forearm of the front rank man with his left hand, and the front rank man the left forearm of the rear rank man, with his left hand, the rear rank man placing his right hand on the left shoulder of the front rank man.

FRONT.

As before.

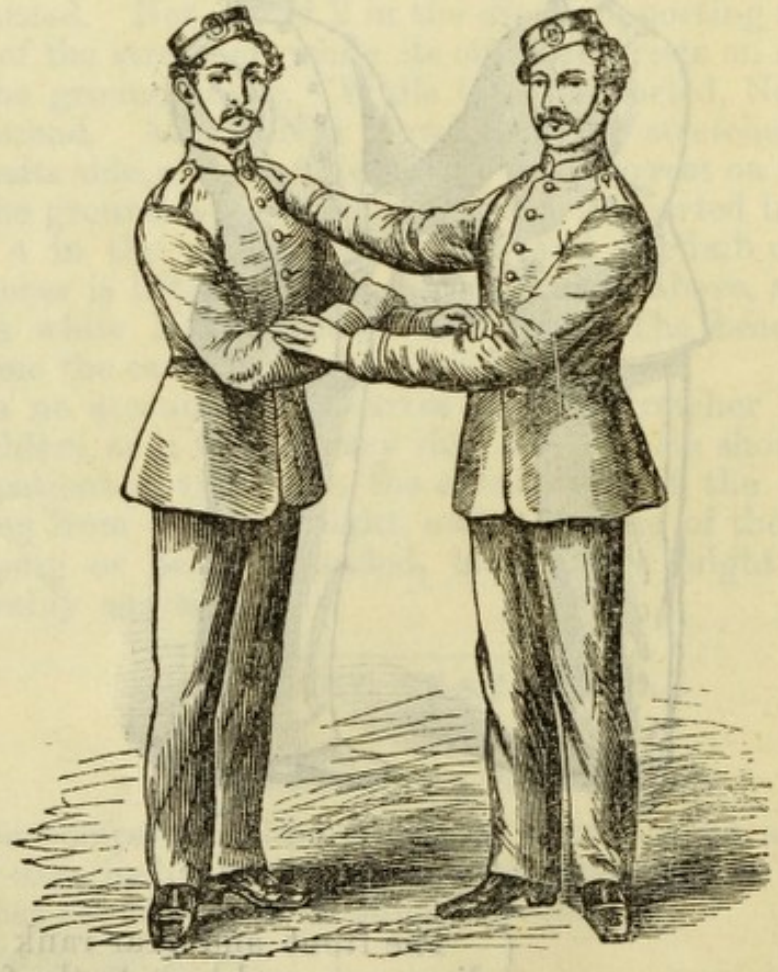


FIG. 54.—THREE-HANDED SEAT.

HAND SEAT DRILL—continued.

FORM FOUR-HANDED SEATS.	As in two-handed seats.
Two.	On the word *two*, both bearers grasp their own left wrists with their right hands, and each other's right wrists with their left hands. Backs of the hands uppermost.
FRONT.	As before.

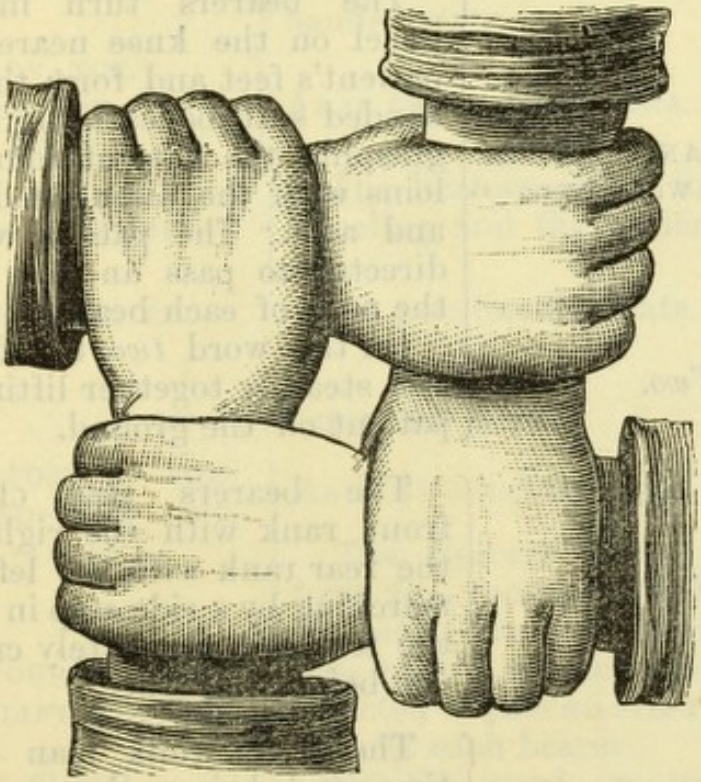


FIG. 55.—FOUR-HANDED SEAT.

24. LIFTING, LOWERING AND CARRYING WOUNDED BY HAND SEATS.

Front rank men will wear knee-caps on the right knee, and the rear rank on the left knee.

A party of patients, proportionate to the number of files to be exercised, will be extended to four paces, marched ten paces in front of the company, and directed to stand when the exercise is in three or four-handed seats, but for two-handed seats they will be directed to sit on the ground.

HAND SEAT DRILL—continued.

BY TWO-HANDED SEATS.

TAKE POST AT THE WOUNDED—ADVANCE.	Each file steps off, towards its corresponding patient, and when immediately in rear of him, the front rank man goes to the right and the rear rank man to the left; halting when in line with and close up to the patient.
BY TWO-HANDED SEATS—LIFT WOUNDED.	The bearers turn inwards, kneel on the knee nearest the patient's feet and form the two-handed seat beneath his thighs, grasping the patient round the loins with the disengaged hand and arm. The patient will be directed to pass an arm round the neck of each bearer.
Two.	On the word *two*, the bearers rise steadily together lifting the patient off the ground.
ADVANCE.	The bearers step off, the front rank with the right and the rear rank with the left foot, marching by a side step in which the feet are alternately crossed, one before the other.
RETIRE.	The front rank man marks time and brings the rear rank man round, both moving on when square.
HALT.	As usual.
LOWER WOUNDED.	The bearers kneel and gently place the patient in a sitting posture on the ground and stand up, still facing inwards.
FILES—RETIRE.	The files turn to the rear and march to their places, rear rank leading, halt and front without further word of command.

HAND SEAT DRILL—continued.

BY THREE-HANDED SEATS.

TAKE POST AT THE WOUNDED—ADVANCE.	As in two-handed seats.
BY THREE-HANDED SEATS—LIFT WOUNDED. *Two.*	The bearers turn inwards, form the three-handed seat and stooping place it beneath the hips of the patient who will be directed to pass an arm round the neck of each bearer. On the word *two* as in two-handed seats.
ADVANCE. RETIRE. HALT.	As in two-handed seats.
LOWER WOUNDED.	The bearers stoop instead of kneeling and the patient stands up.
FILES—RETIRE.	As in two-handed seats.

BY FOUR-HANDED SEATS.

TAKE POST AT THE WOUNDED—ADVANCE.	As in two-handed seats.
BY FOUR-HANDED SEATS—LIFT WOUNDED. *Two.*	The bearers turn inwards, form the four-handed seat and stooping, place it beneath the hips of the patient who will be directed to pass an arm round the neck of each bearer. On the word *two* as in two-handed seats.
ADVANCE. RETIRE. HALT. LOWER WOUNDED. FILES—RETIRE.	As in three-handed seats.

25. VARIETIES OF IMPROVISED SEATS.

Besides the hand seats here described it may sometimes be possible to utilize canvas, straps, a conveniently-

HAND SEAT DRILL—continued.

shaped board, or other material by which the patient may be carried in a sitting posture with comfort to himself and less fatigue to the bearers.

III. AMBULANCE WAGON DRILL.

The regulation carriages which are designed expressly for the conveyance of sick and wounded troops are called Ambulance Wagons.

26. DESCRIPTION OF AMBULANCE WAGONS.

The two latest patterns of Ambulance Wagons, in use in the service at the present time, are Mark III, and Mark V.

MARK III AMBULANCE WAGON.

This wagon affords accommodation for six wounded persons, two lying on field stretchers on the floor of the wagon, two seated in front and two in rear. There is room on the back seat also for the wagon orderly. The front seat is reached by a ladder and the hind seat by a step attached to the tailboard.

The wagon consists generally of a wood framed body, a roof, and a forecarriage (to lock under) mounted upon steel springs. It is provided with a cover, curtains and hood of canvas, extended on a skeleton framed roof attached to and supported by six galvanised tubular standards fitting into sockets in the wagon sides. A corn locker and a water tank are carried under the body. The locker is accessible from two openings with lids formed in the bottom of the body, and will contain three bushels; the tank is fitted with a leather funnel and tube, and will contain nine and a half gallons: a movable box is carried on each side, one for wine, the other for tools, small stores, &c. The interior of the wagon is divided by a longitudinal partition. Valises and accoutrements are carried at the head and foot of each stretcher. Straps are fixed to the centre of the roof, to carry the pillows belonging to the stretchers, and to the front and hind standards, to admit of four closed field stretchers being carried, two on each side of the wagon. There are loops at the bottom of the wagon,

AMBULANCE WAGON DRILL—continued.

under each stretcher, for securing rifles. The weight of this wagon complete is 17 cwt. 2 qrs. 23 lbs. Its tonnage

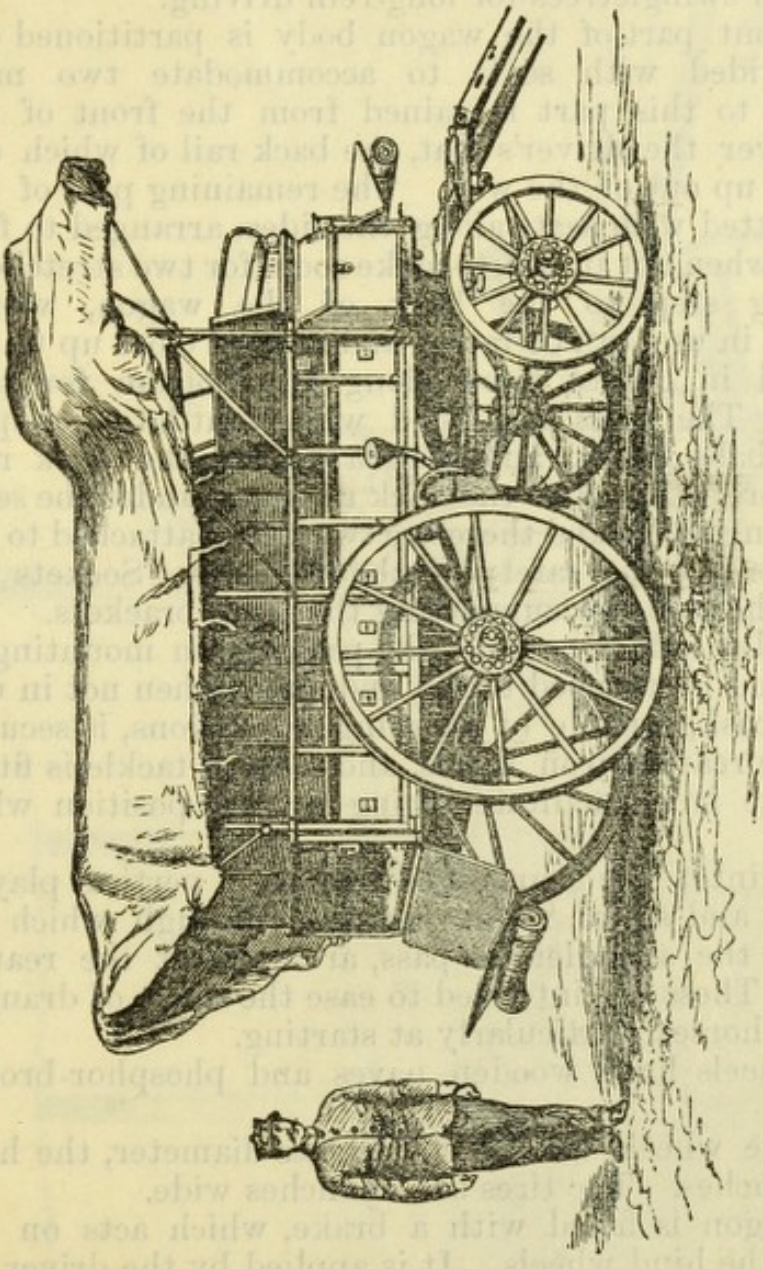


FIG. 56.—AMBULANCE WAGON (MARK III).

is 3·625 tons, and the track of its wheels measures 5 feet 2 inches. The driver occupies a seat on the box.

MARK V. AMBULANCE WAGON.

This wagon is constructed to accommodate twelve men seated, or two men on stretchers and four seated.

It is fitted with a perch, and a "Jacob's" lock fore-carriage, which reduces the strain on the body in travel-

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AMBULANCE WAGON DRILL—continued.

ling, and admits of large front wheels being used, so as to minimise the pull on the horses. It is also fitted with a pole and swingletrees for long-rein driving.

The front part of the wagon body is partitioned off, and provided with seats to accommodate two men. Entrance to this part is gained from the front of the wagon, over the driver's seat, the back rail of which can be folded up out of the way. The remaining part of the body is fitted with seats along the sides, arranged to fold upwards when not in use, to make room for two stretchers. A sliding step to the back of the wagon, which, when not in use, can be raised and pushed close up to the tail-board in guides fixed along the bottom for that purpose. The sides are fitted with ventilators, staples for the bale hoops, and standards for the back rail. Fittings are attached to the back rails and under the seats for carrying rifles, and there are two straps attached to the back rails for the safety of the patients. Sockets are fixed to the sides for supporting the lamp brackets.

A wooden ladder to assist the patients in mounting is carried, and is strapped to the underside when not in use. A water cask, capable of carrying 10 gallons, is secured under the rear by iron bands, and a small tackle is fitted just above it to facilitate lifting it into position when required.

The splinter bar is arranged to allow a vertical play to the pole; and spiral "draw springs," through which the loops for the swingletrees pass, are fixed at the rear of the bar. These are intended to ease the strain of draught upon the horses, particularly at starting.

The wheels have wooden naves and phosphor-bronze pipes.

The fore wheels are 3 feet 9 inches diameter, the hind 4 feet 8 inches. The tires are $2\frac{1}{2}$ inches wide.

The wagon is fitted with a brake, which acts on the front of the hind wheels. It is applied by the driver by means of a hand lever (*a*), which is connected by an iron rod to a brake lever (*b*), the lower end of which is furnished with a wood block (*c*); an iron cross bar is secured to the lever (*b*) at (*d*), and connects a similar block which acts on the "near" wheel. A rack (*e*) keeps the brake on when it is applied.

The wagon is fitted with bale hoops and a canvas cover, a leather apron for the driver, cranked guard irons, a driver's seat, two lockers beneath the front seat, a drag shoe, and a 3-lb. grease tin. The stretchers used are of

AMBULANCE WAGON DRILL—continued.

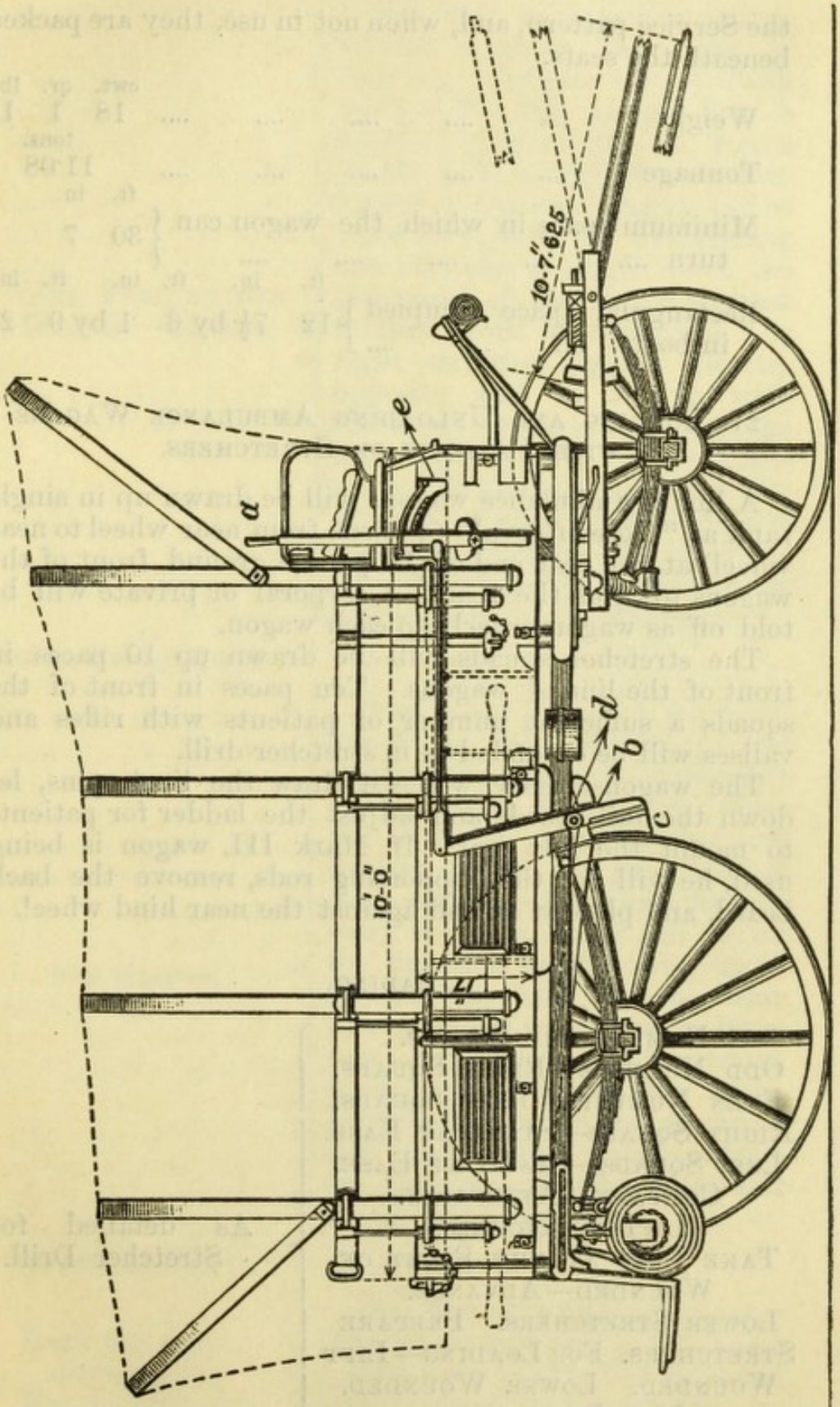


FIG. 57—AMBULANCE WAGON (MARK V.).

AMBULANCE WAGON DRILL—continued.

the Service pattern, and, when not in use, they are packed beneath the seats.

							cwt.	qr.	lb.	
Weight							18	1	14	
								tons.		
Tonnage								11·08		
							ft.	in.		
Minimum space in which the wagon can turn							30	7		
			ft.	in.	ft.		in.	ft.	in.	
Rectangular space occupied in boats			12	7½	by 6	1	by 9	2½		

27. LOADING AND UNLOADING AMBULANCE WAGONS WITH PATIENTS ON STRETCHERS.

A line of ambulance wagons will be drawn up in single rank at "close interval" (4 yards from near wheel to near wheel) at the rear end of the parade ground, front of the wagons towards the rear. A corporal or private will be told off as wagon-orderly to each wagon.

The stretcher squads will be drawn up 10 paces in front of the line of wagons. Ten paces in front of the squads a sufficient number of patients with rifles and valises will be extended as in stretcher drill.

The wagon-orderly will withdraw the linch pins, let down the tail-board, and adjust the ladder for patients to mount the box seat. If Mark III. wagon is being used, he will fix the supporting rods, remove the back board, and place it on end against the near hind wheel.

LOADING.

NUMBER THE SQUADS. ODD NUMBERS—RIGHT SQUADS. EVEN NUMBERS—LEFT SQUADS. RIGHT SQUADS—STAND AT EASE. LEFT SQUADS—STAND AT EASE. COMPANY—ATTENTION. LIFT STRETCHERS. TAKE POST AT THE RIGHT OF WOUNDED—ADVANCE. LOWER STRETCHERS. PREPARE STRETCHERS. FOR LOADING—LIFT WOUNDED. LOWER WOUNDED. LIFT STRETCHERS. ADJUST SLINGS.	As detailed for Stretcher Drill.

AMBULANCE WAGON DRILL—continued.

TAKE POST AT THE WAGONS—RETIRE. The line of stretcher squads retires towards the line of wagons. The two squads which are on the left as the line is retiring, proceed to the wagon on the extreme left, the next two squads to the next wagon, and so on to the right of the line, halting one stretcher's length from the tail-board of the wagon without further word of command, the right stretcher squads directly opposite and in a line with the near compartment, and the left opposite the off compartment. While retiring, each No. 2, when ten paces from his wagon, doubles out with the patient's rifle, secures it in its place in the wagon, and rejoins his squad.

LOWER STRETCHERS. As usual.

FIX SLINGS. Nos. 1 and 3 turn to the right, kneel on the left knee, and arrange the slings on the handles of the poles as follows:—Pass the loop of the buckle end, dressed side of the leather downwards, over the near handle, carry the sling under and round the opposite handle, close up to the canvas, back to the near handle, round which two or three turns are made, pass the transverse strap round the pole, between the racket and traverse, and fasten the buckle outside the sling between the poles, and stand to stretchers.

STAND AT EASE. As usual.

LEFT SQUADS—ATTENTION. FOR LOADING—LIFT STRETCHERS. The Nos. 3 turn about (away from the stretcher) the Nos. 1 and 3 move round by the foot and head of the stretcher respectively to the opposite side and halt opposite

AMBULANCE WAGON DRILL—continued.

	the ends of the stretcher poles at the same time the Nos. 2 take a pace forward and the Nos. 4 a pace back, so as to be opposite the Nos. 1 and 3. All now turn inwards together.
Two.	On the word *two*, the bearers stoop and grasp the stretcher poles, Nos. 2 and 3 the handles with their left hands and the centre with their right hands; Nos. 1 and 4 the handles with their right hands and the centre with their left, palms of the hands uppermost.
Three.	On the word *three*, the bearers, acting together, slowly lift the stretcher off the ground and stand up, holding it at the full extent of the arms.
LOAD.	Nos. 2 and 4 step off with the left foot, and Nos. 1 and 3 with the right, halting one pace from the floor of the off compartment, without further word of command.
Two.	On the word *two*, the stretcher is raised on a level with the floor, and the front pair of rollers rested on it. Nos. 1 and 2 fall in, in rear of Nos. 3 and 4, and the latter, giving the stretcher the proper direction and avoiding all jerking and jolting, slowly push it home.
Three.	On the word *three*, the squads fall in, in single rank, facing the wagon and one pace from it, No. 1 being on the left, No. 3 on the right, and Nos. 2 and 4 between them.
LEFT TURN. LEFT WHEEL. QUICK MARCH. HALT. STAND AT EASE.	The order to HALT is given when clear of the right squads.

AMBULANCE WAGON DRILL—continued.

RIGHT SQUADS—ATTENTION. FOR LOADING, &c. &c.	The right squads will now be ordered to load the near compartments, and when this is done the wagon orderlies replace the backboards and ladders and seat themselves on the back seat of their respective wagons.
COMPANY—ATTENTION. ADVANCE.	The company moves off, the squads opening out to their proper interval as they advance.
HALT.	The order to HALT is given when the squads are in the position from which they retired.

UNLOADING.

TAKE POST AT THE WAGONS. RETIRE.	Each squad, wheeling by the right, retires on the line of wagons as before detailed, except that Nos. 2 remain with their squads. Wagon orderlies prepare wagons as for loading.
STAND AT EASE.	As usual.
LEFT SQUADS—ATTENTION. UNLOAD.	Nos. 1 and 3 take two side paces to their right, No. 2 a pace forward, and No. 4 a pace back.
Two.	On the word *two*, each squad steps forward three paces, bringing Nos. 1 and 2 immediately behind the off compartment. Nos. 1 and 2 each grasps the handle of the pole nearest to him, No. 1 with his left hand, No. 2 with his right, and both, slowly and steadily, draw out the stretcher until the rollers at the foot rest on the end of the floor of the wagon. They support the centre of the poles with their disengaged hands.
Three.	On the word *three*, Nos. 1 and 2 transfer the head end of the stretcher to Nos. 3 and 4, take hold of the handle at

AMBULANCE WAGON DRILL—continued.

	foot end in one hand, centre of pole in the other. The squad lifts it clear, lowers it to the full extent of the arm, and wheeling by the right, carries it, foot foremost, five paces forward, and halts.
LOWER STRETCHERS.	Each squad stoops and lowers the stretcher gently to the ground.
Two.	On the word *two*, each squad stands to stretchers as follows :— No. 1 turns to the right, the remainder to the left ; Nos. 1 and 3 march round to their places by the foot and head of the stretcher respectively ; No. 2 takes a pace to his rear ; No. 4 a pace to his front, and No. 1 turns to his front.
STAND AT EASE.	Patients will be ordered to rise.
RIGHT SQUADS— ATTENTION. UNLOAD. &c. &c.	The right squads will now be ordered to unload the near compartments, and when this has been done the wagon orderlies fix ladders, backboards and tailboards, while the squads are standing to stretchers.
COMPANY— ATTENTION. CLOSE STRETCHERS.	Slings will be unfixed and placed on the ground, and stretchers closed, as before detailed.
ON THE RIGHT— CLOSE. COMPANY BY THE RIGHT— QUICK MARCH. HALT. LOWER STRETCHERS. &c.	As detailed in Stretcher Drill.

AMBULANCE WAGON DRILL—continued.

28. LOADING AND UNLOADING AMBULANCE WAGONS WITH PATIENTS ABLE TO SIT UP.

After the men have been thoroughly instructed in the preceding exercise, they will be taught to assist into the front and back seats, patients, supposed to be able to sit up. Practice will be given in lowering the ladder and in lashing it up again, and in putting away articles of equipment, rifles, valises, &c., in the various positions assigned to them in the wagon.

IV. DRILL WITH COUNTRY CARTS, GENERAL SERVICE WAGONS, &c.

29. GENERAL REMARKS.

It may be necessary to employ country carts or general service wagons for the transport of wounded. When used for this purpose the floors of such conveyances should be thickly covered with straw, on which the stretchers conveying wounded requiring the recumbent position should be placed.

In practising loading these carts or wagons, stretchers, and patients will be drawn up on the parade ground, as detailed for Ambulance Wagon Drill, and the same steps taken to load and unload as in the case of ambulance wagons. In loading, however, the Nos 1 and 2 of each squad, after the end of the stretcher has been placed on the floor, will spring into the wagon, and, with the assistance of the other Nos. on the ground, lift the stretcher into position.

Sometimes the recumbent wounded have to be put into the wagons without stretchers, none being available. When this happens, four bearers, following as far as possible the instructions given for lifting wounded in Stretcher Drill, will lift each wounded man, and carefully carry him to the wagon. On arriving at the back of the wagon, No. 4 will get into it, and supporting the wounded man under both shoulders will lift him in, assisted by the other Nos. who will subsequently get into the wagon and help to place the wounded man in the most advantageous position possible.

Unloading is the converse of this proceeding.

V. RAILWAY WAGON DRILL.

The railway wagons in this country which can be made use of for the purpose of transporting wounded men, are passenger carriages, in which the patients can, if necessary, be laid on the seat, and goods wagons.

No special instructions appear to be necessary for loading and unloading such wounded men as are able to walk and assume the sitting posture, recumbent patients alone being alluded to in the text.

30. Preparation of Wagon by Zavodovski's Method.

To prevent jarring, these wagons require to be fitted with some special apparatus. That most generally used

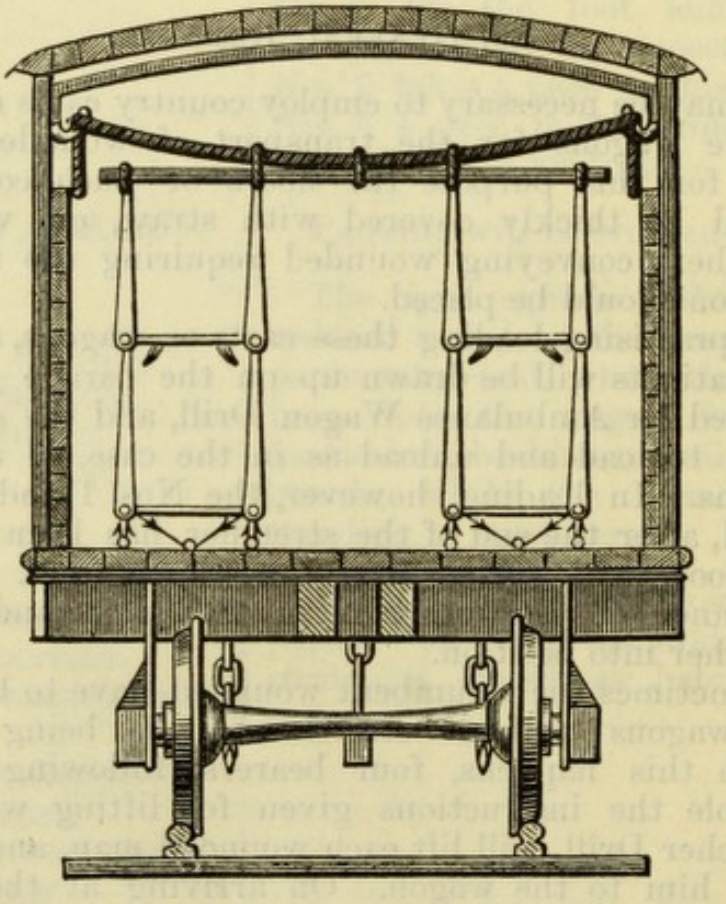


Fig. 58.—Transverse section of a Goods Wagon fitted on Zavodovski's Plan.

is known as Zavodovski's (fig. 58). To prepare a wagon according to Zavodovski's method the following stores are required :—

RAILWAY WAGON DRILL—continued.

4 cables,
16 ropes prepared with loops,
8 large hooks and rings,
32 small ring-bolts,
4 stout poles of suitable length,
8 field stretchers, and
28 stout cords for lashings.

The large hooks and rings are inserted in the sides of the wagon near the roof, from these the cables are suspended across the wagon, the poles are secured lengthwise to the cables and the looped ropes attached to them. By means of these, two tiers of stretchers are supported, four stretchers in each tier. The lower tier is made fast to the small rings on the floor.

31. LOADING AND UNLOADING.

The company, with lowered loaded stretchers, will be drawn up in extended order ten paces from and facing the goods wagon.

LOADING.

FIX SLINGS.	As in Ambulance Wagon Drill.
STAND AT EASE.	As usual.
SQUADS—IN SUCCESSION FROM THE RIGHT—WILL LOAD.	Each No. 4 in succession from the right assumes charge of his squad, and gives the words of command as follow ;
No. Squad. Attention. For Loading—Lift Stretcher.	As in Ambulance Wagon Drill.
Load.	The Squad marches by the nearest way to the wagon, wheeling when opposite to and one pace from the doorway, and the stretcher is carried into the wagon, head first, to the far right hand corner where it is raised, and the handles of the poles are placed in the upper loops of the ropes.
Two.	On the word *two* the bearers fall in outside the wagon one pace from the doorway, No. 3 on the right, No. 1 on the left, Nos. 2 and 4 between them.

RAILWAY WAGON DRILL—continued.

Right Turn. *Rejoin Company.* *Quick March.* *Stand at Ease.*	As usual.

Similar words of command are given by the Nos. 4 of successive squads when they see the squad on their right falling in outside the wagon. No. 2 squad loads the upper near right-hand corner, No. 3 the lower far right-hand corner, No. 4 the lower near right-hand corner.

The lashings are fixed by No. 4 squad as follows :—

The lashing attached to the ring in the floor of the wagon immediately beneath the handles of the stretcher is carried up round the handle, back through the ring and fastened off ; if long enough this may be repeated. The lashing attached to the ring lying between the handles is passed up round the left handle, back through the ring, round the right handle and back to the ring—thus forming a V where it is fastened.

The upper tier is steadied by a lashing starting from a ring-bolt in the side of the wagon which is carried across and secured to the opposite side, a firm hitch being taken round each handle The lashings will be drawn tight to prevent swaying of the stretchers.

The left half of the wagon is loaded in a similar manner.

UNLOADING.

SQUADS—IN SUCCESSION FROM THE LEFT—WILL UNLOAD. *No. Squad.* *Attention.* *Unload.*	The converse of the above. The lashings of the left half of the wagon are unfixed, and the unloading commenced with the near lower stretcher on the left. Nos. 3 and 4 enter the wagon first and proceed to the head end of the stretcher ; the stretcher is brought out foot first and carried to its original position, where the bearers wheel about.
Lower Stretchers.	As in Ambulance Wagon Drill.
Stand at Ease.	The patients will be directed to rise.
COMPANY—ATTENTION—CLOSE STRETCHERS, &c., &c.	As in Ambulance Wagon Drill.

VI. PACKSADDLE DRILL.

32. Pack Transport.

In mountain and desert warfare it may be necessary to employ pack transport instead of wheeled transport for the conveyance of the wounded.

Cacolets and litters, of which the so-called mountain equipment consists, are constructed to be hooked in pairs on packsaddles, one on each side.

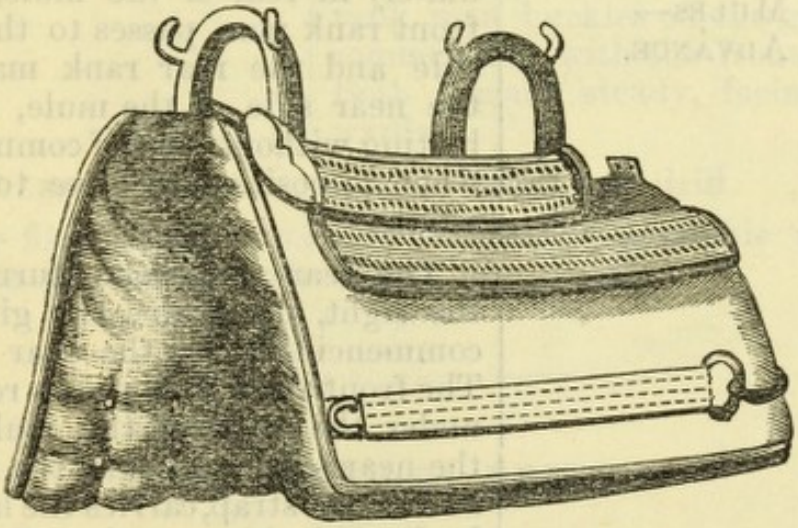


Fig. 59.—Packsaddle.

Description of Packsaddle.

The packsaddle used is the large pattern, and weighs, with the following accessories, 57 lbs.

Bit, bridoon with reins.
Breeching, with Ds and chains.
Collar, breast, with Ds and chains, neck straps, and buckling pieces.
Collar, head stall.
Crupper, leather.
Girths, pair of.
Pannels, pair of.
Rein chain.
Surcingle.
Tree with front and rear arch.

33. Saddling and Off Saddling.

The company will be drawn up in two ranks and pack animals, saddled and bridled, will be brought ten

PACKSADDLE DRILL—continued.

paces in front of, and with their quarters towards the company, the animals to be ten paces apart.

— FILES ON THE RIGHT. TAKE POST AT THE MULES— ADVANCE.

The named files advance towards the mules. The file on the right marches to the mule on the right, the next file to the next mule, and so on, from right to left. The front and rear rank man in each case separate immediately in rear of the mule, the front rank man passes to the off side and the rear rank man to the near side of the mule, both halting without word of command when opposite and close to the saddle.

OFF SADDLE.

The rear rank man turns to the right, unbuckles the girths, commencing with the rear one. The front rank man passes round under the neck of the mule to the near side, unbuckles the neck and breast strap, carries the latter back with him to the off side, and picking up the girths, places the whole upon the saddle. Both men then grasp the pannels of the saddle and sweep it back on to the mule's quarters. The front rank man removes the crupper and breeching and places them on the saddle. Seeing this done the rear rank man grasps the saddletree with both hands. —a hand between each pair of hooks— lifts it clear, takes a pace to his rear and places the saddle, resting on its front arch, on the ground.

The rear rank man grasps the saddle between the hooks as before, lifts it, takes a pace to his front and places it on the mule's quarters. The front rank man then adjusts the

PACKSADDLE DRILL—continued.

SADDLE.	breeching and crupper, and both men lift the saddle forward. The front rank man draws down the girths and breast strap, places the neck strap over the mule's neck, takes the breast strap in his left hand and passes round under the mule's head to the near side ; buckles it and returns to the off side. The rear rank man buckles off the girths, commencing with the front one. Both remain steady, facing inwards.
FILES—RETIRE.	As in hand-seat drill.

The files in excess of the number of available mules will be similarly exercised.

VII. CACOLET DRILL.

34. DESCRIPTION OF CACOLETS.

Cacolets, or folding chairs, are intended for the conveyance on pack animals of patients in the sitting posture.

A pair of the latest pattern (Mark III) cacolets weighs 56 lbs. Each cacolet consists of the following parts :— a seat, or cushion ; two hanging bars, terminating in hooks by which the cacolet is attached to the pack saddle ; certain parts designed to prevent the patient from falling out, namely, a foot-board and slings, two uprights, a side rail, and front and waist straps. When not in use, the pair of cacolets is closed by being folded against the saddle, to which they are then secured by a surcingle.

35. PREPARING, LOADING, UNLOADING AND CLOSING CACOLETS.

The company will be drawn up in two ranks, odd numbers being told off as right files and even numbers as left files.

CACOLET DRILL—continued.

The pack animals, loaded with closed cacolets, will be drawn up as in SADDLING. The patients will be directed to sit on the ground; two patients ten paces in front of each mule.

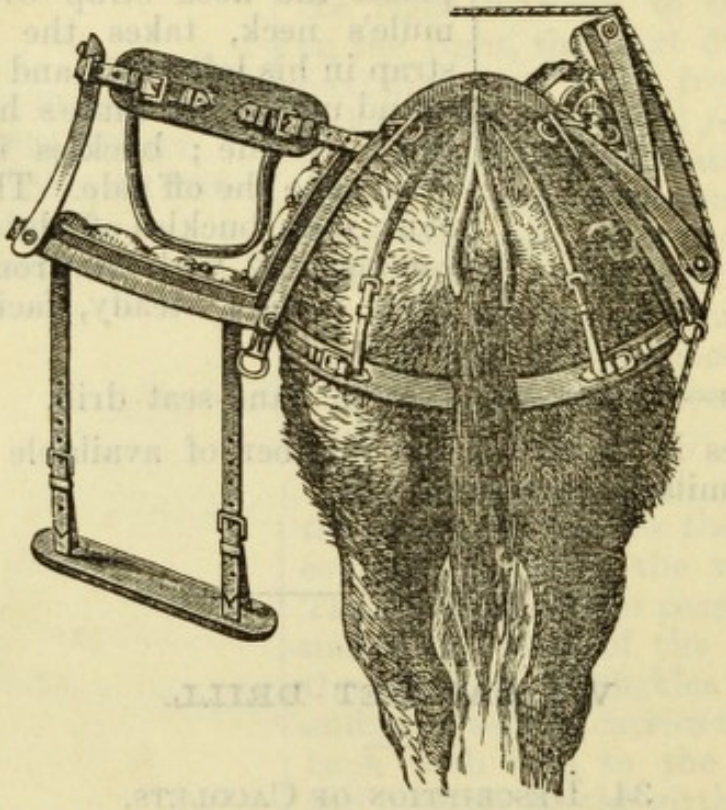


FIG. 60.—END VIEW OF A PAIR OF CACOLETS, SHOWING ONE PREPARED AND THE OTHER CLOSED.

— FILES ON THE RIGHT TAKE POST AT THE MULES— ADVANCE.

The named files advance towards the mules. The two files on the right march to the mule on the right, the next two files to the next mule and so on from right to left.

The files in each case separate immediately in rear of the mule, the right file passes to the off side, the left file to the near side, the whole halting without word of command when the front rank men are opposite to and close to the cacolets.

PREPARE CACOLETS.

Each front rank man turns inwards; the man on the near side unbuckles and removes the surcingle, placing it at the mule-

CACOLET DRILL—continued.

	teer's feet. Both men then draw down the seats (the rear rank men closing outwards to make room), raise and fix the side rail, unbuckle the waist and front straps, and front together.
TAKE POST AT THE WOUNDED—ADVANCE. BY TWO-HANDED SEATS—LIFT WOUNDED.	As in hand seat drill.
LOAD.	Each file retires towards the mule, advancing and halting when immediately in front of the cacolet.
Two.	On the word *two* the patients are raised and placed at the same moment, in the cacolets. The patients will be directed to assist in this movement. The front rank man places the foot-board beneath the patient's feet, passes the front strap through the slot in the hanging bar and buckles it. The rear rank man passes the waist strap round the patient and secures it. Both men then take post outside the cacolet.
UNLOAD.	Each front rank man unbuckles the front strap and removes the foot-board; the rear rank man unbuckles the waist strap. They then form the two-handed seat beneath the patient's thighs, the front rank man placing himself on the right, the rear rank man on the left of the patient.
Two.	On the word *two* the patients are lifted clear and carried ten paces to the front.
LOWER WOUNDED.	As in two-handed seats.

CACOLET DRILL—continued.

TAKE POST AT THE MULES. RETIRE.	Files turn to the rear, take post outside cacolets, halt and front together.
CLOSE CACOLETS.	Each front rank man turns inwards, buckles the waist and front straps, lowers the side rail, pushes up the seat, and places the foot-board on the top. The man on the near side takes up the surcingle, passes it through the loop between the girths to the man on the off-side, who pulls it through and throws the end over the top of the cacolets to the man on the near side, who buckles it opposite to the centre of the cacolet. Both men front together.
UNHOOK CACOLETS.	Each front rank man turns inwards; the man on the near side unbuckles the surcingle, removes it and places it at the muleteer's feet. Both men then grasp the closed cacolets, fingers on the cushions, thumbs on the seats, unhook and take a pace to their rear.
LOWER CACOLETS.	Each front rank man stooping, places the cacolet on the ground with the hooks pointing away from the mule; places the foot-board on the top of the cacolet and rises together.
LIFT CACOLETS.	Each front rank man, stooping, removes the foot-board, takes hold of the cacolet, as before, and rises up.
HOOK ON CACOLETS.	Each front rank man steps up to the mule, raises the cacolet, drops the hooks into their places, and lays the foot-board on the top, the men on either side working together. The surcingle is then passed, and buckled as in closing cacolets.

CACOLET DRILL—continued.

FILES—RETIRE. As in hand-seat drill.

The files in excess of the number of available mules will be similarly exercised.

36. LOADING AND UNLOADING CACOLETS WITH REDUCED NUMBERS.

When only three bearers are available, they will take post at the mules, two on the off side and one on the near side.

The loading of both cacolets will be carried out by the two men on the off side, who will commence with the cacolet on that side. The man on the near side holding down the near cacolet by the side rail while the opposite cacolet is being loaded, and until his own cacolet is loaded.

In unloading, the cacolet on the near side will be first unloaded by the two bearers from the off side—the man on the near side balancing the cacolet on the off side as before.

The cacolet on the off side will then be unloaded, and the bearers resume their positions outside their respective cacolets.

VIII. LITTER DRILL.

37. DESCRIPTION OF LITTERS.

Litters or folding stretchers are intended for the conveyance on pack animals of patients in the recumbent posture.

A pair of the latest pattern (Mark III) litters weighs 106 lbs. Each litter consists of an iron framework, jointed, in three parts—head, centre, and foot-piece (the head-piece is protected by a hood and provided with a pillow)—a canvas bottom, two uprights, with side rail, hanging bars terminating in hooks, by which the litter is suspended from the hooks of the pack-saddle, belly-band and suspension straps, and an apron. (Fig. 61.)

The apron is made of Russia duck, sufficiently large to cover the exposed portion of the litter with its sick or wounded occupant. The aprons are buttoned to the

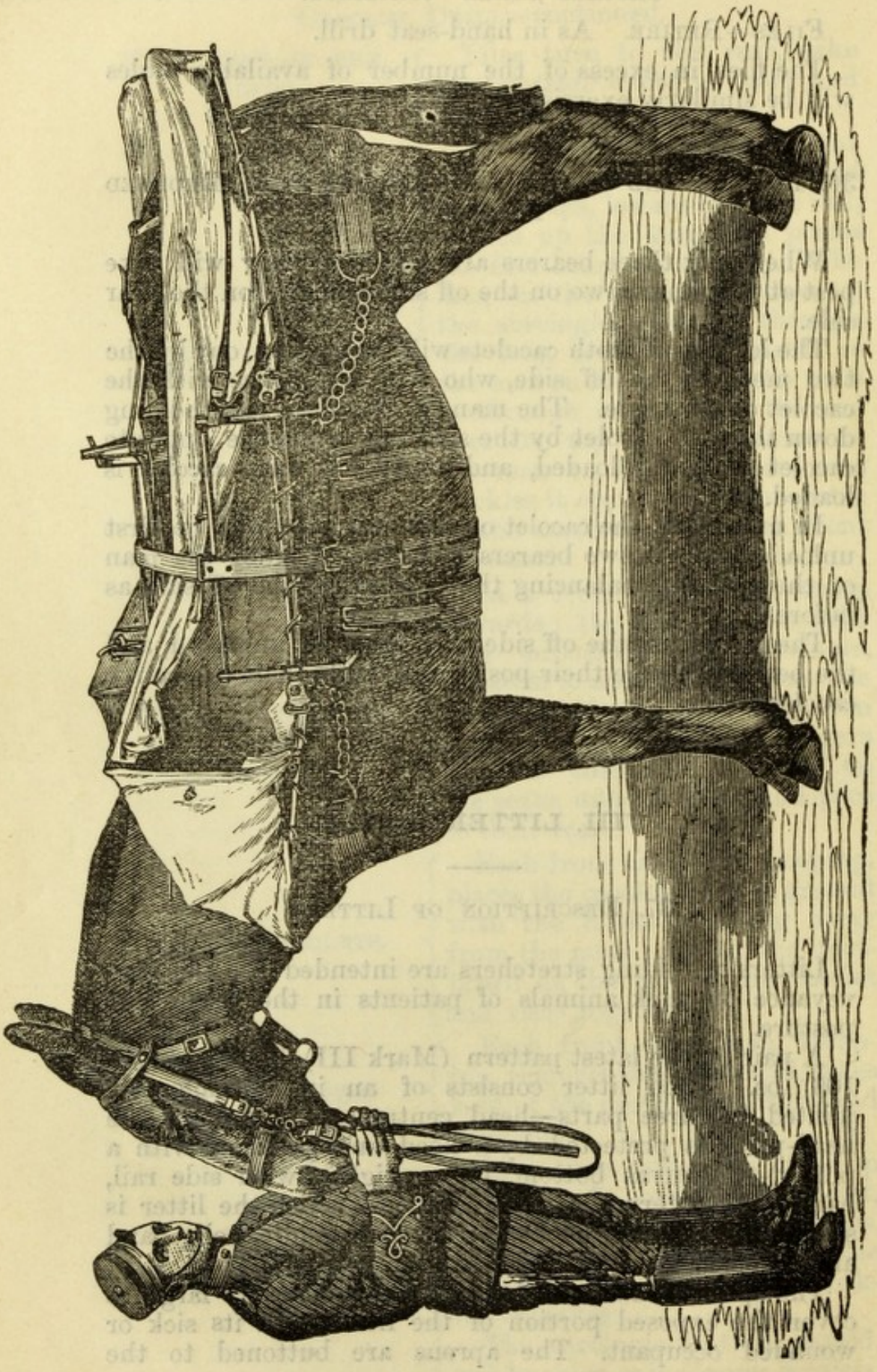


Fig. 61—Prepared Litters.

LITTER DRILL—continued.

litters at their ends, the head end having seven button-holes corresponding with the leather buttons on the hood of the litter, and the foot having two leather thongs, each with button and button-hole for attachment to the foot-piece. The top of each apron is also provided with three beech toggles, 2½ inches in length, with strong loops and one leather button; the former are for the purpose of securing the sides when rolled up for additional ventilation, and the latter for securing the head part when turned back. The inner edge of the apron is notched in two places to clear the hanging bars of the litter.

When not in use, the pair of litters is folded against the saddle, to which they are there secured by a surcingle.

38. PREPARING, LOADING, UNLOADING, AND CLOSING LITTERS.

The company will be formed up and told off in squads, as for stretcher drill. The squads will be told off as right and left squads.

A line of pack animals, each loaded with a pair of closed litters, will be drawn up ten paces in front of the company, heads towards the company—with an interval of fifteen paces between each animal.

The patients will be directed to lie on the ground, one on either side of each mule, and five paces distant from it, with their heads towards the company.

—— SQUADS ON THE RIGHT TAKE POST AT THE WOUNDED—ADVANCE.

The squads named take post at the wounded; right squads on the near side, between the patient and the mule, left squads on the off side, between the patient and the mule, halting without further word of command one pace distant from and in line with the patient's body.

UNHOOK LITTERS.

No. 2 of each squad, turning towards the mule, places himself opposite and close up to the litter.

No. 2 of the right squad unbuckles and removes the surcingle, placing it at the muleteer's feet.

LITTER DRILL—continued.

No. 2 of the left squad, while this is being done, holds up the litter by passing his right hand across the mule's withers.

No. 2 of each squad turning to the front, draws down the litter, stoops and places his shoulder beneath it; grasps the inner rail with the hand nearest the mule, the outer rail with the other hand.

Both litters are then unhooked together, and the Nos. 2 close outwards to their original places, lower the litters to the ground, hanging bars towards the mule, and rise together.

PREPARE LITTERS.

Nos. 1 and 3 turn towards the litter and kneel on their left knees. No. 1 raises and extends the foot-piece, No. 3 the head-piece, and both fix the linch pins. No. 3 of the right squad removes the belly-bands and suspension-strap, and places them on the ground beside him.

Nos. 1 and 3 unfold and roll the apron lengthwise, toggles on the outside, and place it on the inner side of the litter close to the hanging bars, extending from the pillow to the footrail, leather thongs at the foot.

No. 3 passes the ends of the hood-rod strap to No. 1, who lays them out on the top of the apron.

Nos. 1 and 3 rise and front together.

FOR LOADING—LIFT WOUNDED.

As detailed in Stretcher Drill.

LOWER WOUNDED.

The patients are placed on the litters as detailed in Stretcher Drill.

LITTER DRILL—continued.

The squads stand to, on the outer side of the litter.

Two. On the word *two*, the whole turn towards the head of the litter, Nos. 1, 2, and 3 wheel outwards to their places, No. 4 passing round the head of the litter outside No. 3 to his place. The No. 4 of the right squad taking up the belly bands and suspension strap on his way, and placing them beside the patient lengthwise on the outer side of the litter in such a position as not to interfere with the comfort of the patient.

LIFT LITTERS. No 3 turns outwards, and Nos. 1 and 3 wheel round the foot and head of the litter, respectively, to the opposite side, No. 2 takes a pace to the front, No. 4 a pace to the rear, and all turn inwards together.

Two. On the word *two*, they stoop and grasp the framework of the litter.

Three. On the word *three*, standing up they raise the litter, and Nos. 1 and 3 facing the hanging bars, Nos. 2 and 4 facing the front, place it on their shoulders. They pass the arm next the litter beneath it, and grasp the framework on the opposite side. Nos. 1 and 3 grasp the hanging bars with their disengaged hands, thumb pointing down, back of the hand upwards, and Nos. 2 and 4 grasp the side rail nearest them.

LOAD. The squads close in towards the mule, halting when the litters are opposite the saddle, so that the hooks hang over those on the saddle-tree. Stooping

LITTER DRILL—continued.

slightly they together drop the hooks into their places, and remain steady, still supporting the litters on their shoulders.

FIX STRAPS.

The Nos. 3 disengage from the litters, and take post outside the centre-piece, facing each other. No. 3 of the right squad removing the belly-band straps places them on the ground beside him, and taking the suspension strap, passes one end over the mule's back to the No. 3 opposite, who buckles it to the strap attached to the outer rail of the centre-piece. He then buckles his end.

Two.

On the word *two*, the remainder disengage. No. 4 of the right squad taking up the belly bands, gives the shorter one to No. 2, and they pass one end of each to Nos. 2 and 4 of the left squad, who buckle off. Nos. 2 and 4 of the right squad then fasten their ends. Meantime, No. 1, placing himself at the foot of the litter, takes up the hood rod straps, and by pulling them raises the hood, and fixes them to the upright bars of the foot-rail in a slip knot. No. 3 unrolls the apron, spreads it out between the hood rod straps and the suspension strap, toggles uppermost, buttons the head end to the hood, commencing on the inside.

No. 1 fastens the thongs at the foot end to the lower bar of the rail,

The whole then take post outside the litter.

UNFIX STRAPS.

The apron is unbuttoned and rolled, the hood rod straps unfastened, hood lowered, and belly-

LITTER DRILL—continued

band straps unbuckled by the bearers who fixed them. No 4 of the right squad placing the belly-bands in the litter as before. The suspension strap is not touched.

UNLOAD.

Nos. 1 and 3 passing round the foot and head of the litter, place themselves between it and the mule, facing the hanging bars. Nos. 2 and 4 turn to the front.

No. 2 takes a pace to the front, No. 4 a pace to the rear, and the whole stooping, place their shoulders beneath the litter, and grasping it as before, support it ready for unhooking. The Nos. 4 then unbuckle the suspension strap, the No. 4 of the right squad drawing it towards him, retains it in his right hand.

Two.

On the word *two* the squads rising steadily together unhook the litters, close outwards five paces and stand fast, the No. 4 of the right squad dropping the suspension strap at his feet.

LOWER LITTERS.

The bearers lift the litters off their shoulders and turning inwards stoop and lower them steadily to the ground. Rise up and stand to, on the outside of the litters in the following manner. No. 3 turns towards the head, Nos. 1, 2, and 4 towards the foot of the litter, Nos. 1 and 3 move round the foot and head of the litter to their places, No. 1 turning to the front. No. 2 taking a pace to the rear, No. 4 a pace to the front, picks up the suspension strap and places it in the litter.

LITTER DRILL—continued.

FOR UNLOADING, LIFT WOUNDED.	As in Stretcher Dill.
LOWER WOUNDED.	The patient is gently lowered to the ground, and the bearers stand up facing each other.
Two.	On the word *two*, the Nos. 1, 2, and 3 turn to the front, wheel outwards and round the head of the patient to their places, the No. 4 turns to the rear, and falls in between Nos. 2 and 3 as they pass him.
CLOSE LITTERS.	Nos. 1 and 3 turn towards the litter, kneel on the left knee, No. 3 gathers up the hood rod straps and places them in the hood. Nos. 1 and 3 fold the apron into a square a little smaller than the pillow on the top of which it is placed, and withdraw the linch-pins. The belly-bands and suspension strap are placed on the centre piece of the near litter by the Nos. 3 of the right squad. The Nos. 3 fold the head-piece, Nos. 1 the foot-piece, and stand up and front together.
HOOK ON LITTERS.	The Nos. 2 stooping, place the litter on their shoulders, as described in unhooking, rise together and close towards the mule, halting when the litters are opposite the saddle, so that the hooks hang over those on the saddle-tree.
Two.	On the word *two* the hooks are dropped into their places together, and the litters pushed up against the saddle. Nos. 2 of the left squad holding them in position as before described, while No. 2 of the right squad takes up the surcingle, passes, and buckles it. Nos. 2, turning outwards, resume their positions in their respective squads, halt and front.

LITTER DRILL—continued.

SQUADS—RETIRE. As for files in hand-seat drill.

The squads in excess of the number of available mules will be similarly exercised

39. LOADING AND UNLOADING LITTERS WITH REDUCED NUMBERS.

With six Bearers.

If only six bearers are available, three bearers will take post at each patient. After the litters have been lowered and prepared, they will be loaded one at a time, the centre bearer of the opposite squad acting for the time as No. 4. Both litters having been loaded, they will be lifted and hooked on together, a bearer being on the inner side of the head and foot-pieces respectively, and the third on the outer side This having been done, all the bearers will keep their shoulders under the litters, except the two at the head-pieces, who will disengage and fix the back suspension strap. When this has been fixed the others will remove their shoulders from under the litters, and fix the straps and aprons. In unloading, the back suspension strap will be unfixed by the centre bearer.

With four Bearers.

Loading and unloading with four bearers, can be carried out as described for six bearers, except that the litters will be hooked on or unhooked, one at a time, three bearers carrying out this work, whilst the fourth bearer supports the loaded litter on his shoulder, until the second one has been hooked on and the back suspension strap fixed, or until, in unloading, the other bearers are ready to unhook the second litter.

Section II. Medical Staff Corps.

IX. FIELD TRAINING.

40. Organisation and Duties of Bearer Companies.

Personnel.

The personnel of the war establishment of a bearer company consists of 1 surgeon-major in command, and 2 surgeon-captains or surgeon-lieutenants of the Army Medical Staff, 1 serjeant-major, 6 staff-serjeants and serjeants, 6 corporals, 47 privates and 1 bugler of the Medical Staff Corps, and the officer and men of the Army Service Corps attached for transport duties.

Disposition in action.

In action the company is distributed thus :—

I. Two stretcher sections under a surgeon-captain or surgeon-lieutenant, each section consisting of one serjeant and four stretcher squads.

II. One serjeant and bugler at the collecting station.

III. Five corporals and five privates as wagon orderlies, each in charge of an ambulance.

IV. The surgeon-major, one surgeon-captain or surgeon-lieutenant, one serjeant-major, two serjeants (one as compounder), one corporal and four privates (one as cook) at the dressing-station.

V. One staff-serjeant, two privates (company cooks), three privates (officers' servants), and one private (supernumerary) in rear with the company baggage, supplies, &c.

Wheeled transport.

The wheeled transport of a bearer company includes ambulance wagons, general service wagons for equipment and medical stores, store carts and a water cart. The ambulance wagons or other sick carriage is divided into two Lines. The First Line is intended to convey the wounded from the collecting station to the dressing station, and the Second Line to carry them from the dressing station to the field hospital. The proportion of carriage detailed for each of these services will in every case be determined by the officer commanding the bearer company, failing the receipt of orders from higher authority. It will rest with him to decide, from consideration of the character of the enemy, the rapidity with which the wounded are being brought in, the state of the roads, the distance between the collecting station and the dressing station and between the latter and the field hospital, how best to employ the ambulances at his disposal. It may in some cases seem advisable to employ, in the first place, the carriage of both lines between the

Distribution of sick carriage.

collecting station and dressing station, while under other circumstances it may be better to at once employ the ambulances of the second line in evacuating the dressing station. A rapid review of the conditions referred to will enable him promptly to decide whether the rendezvous of both lines of ambulances shall in the first place be at the collecting station, or whether he will order only those of the first line thither, and those of the second line to rendezvous at the dressing station.

Pack transport.

The pack transport of a bearer company for use in mountain warfare, or where there are no roads suitable for wagons or carts, consists of cacolets and litters for the transport of the wounded, and field panniers, &c., for the transport of stores, the whole being carried by pack animals.

Duty of stretcher sections.

The stretcher sections will be sent out to succour and collect the wounded. The No. 4 of each squad will be in charge of his squad, and on the two men who are not actually carrying the stretcher will devolve the duty of removing the arms, ammunition, and accoutrements of the wounded to the rear, and of carrying the surgical haversack and water-bottle. The squads will bring the wounded to the collecting station and place them in the ambulance or other sick carriage, returning at once to the scene of action, and taking fresh stretchers with them. The stretcher squads will not pass in rear of the collecting station.

Collecting station.

The collecting station will usually be under shelter, and, if possible, near a road, but as near the fighting line as is consistent with safety. The sergeant in charge of it will have in his care a field companion and water-bottle, and a small reserve of bandages and first dressings to replenish the surgical haversacks of the bearers.

Ambulances of First Line.

The ambulances or other sick carriage ordered to rendezvous at the collecting station, will move off to the dressing station as they are loaded with wounded, each under charge of a wagon orderly. After taking the wounded to the dressing station, those of the First Line will return at once to the collecting station. The full number of ambulances in the First Line will always be maintained, and they will never go in rear of the dressing station until the field has been cleared.

Dressing station.

The dressing station will, if possible, be out of fire, near a road, and advantage will always be taken of a good water supply and of buildings or other shelter in the vicinity of the scene of action. The necessary surgical

and medical equipment, medical comforts, water cart, and, if so ordered, the ambulances constituting the Second Line, or in mountain warfare, the whole of the pack transport, will be assembled at the dressing station, and if no building is available the operating tent will be pitched. Here beef tea and stimulants will be got ready, and every preparation made to succour the wounded as they come in.

Ambulances of Second Line.

After the wounded are dressed they will be placed in the ambulances of the Second Line or other sick carriage, and taken to the field hospital. As soon as they have been transferred to the field hospital the wagon orderlies will return with the ambulances to the dressing station.

Baggage party.

The remainder of the company left in charge of the baggage and supplies will have food ready for the company at the close of an action.

Application of general principle.

The foregoing instructions must necessarily be varied to meet the exigencies of the locality and warfare in which the army is engaged, and according to the need of advancing or retiring the collecting and dressing stations, on a forward or retrograde movement of the troops being made. The general principle will, however, always be kept in view of having the collecting station as near the fighting line as possible, and at no great distance from the dressing station, so as to shorten the journeys of the bearers and the ambulances of the First Line and bring the wounded within reach of surgical aid as speedily as possible. In some cases, and invariably with mountain equipment, the collecting and dressing stations will be combined.

Distinguishing flags and lamps.

All medical establishments in the field are distinguished during daytime by a red cross flag and during the night by two white lamps placed side by side. Directing red cross flags will be placed between the collecting and dressing stations, and between the latter and the field hospitals to mark the road.

Searching woods and ditches.

When all the wounded have been removed from the open, the woods and ditches in the neighbourhood will be methodically searched, so that there may be no possibility of any wounded remaining uncared for.

Search lanterns.

Lanterns for searching in the dark form part of the equipment of a bearer company.

Specification tallies.

When the necessary surgical treatment has been afforded, the officer will attach to the clothes of the wounded man a "specification tally" (Army Book 166), on which will be specified his regiment, number, rank, and name, with the nature of the injury, the treat-

ment, and any precautions required in transport. The soldier's name and the nature of his wound will also be entered on the counterfoil of the tally book.

Disposal of arms, ammunition, and accoutrements.

The arms, ammunition, and accoutrements of a wounded man will be carried with him to the dressing station and field hospital, and handed over to the quartermaster of the hospital into which he is received.

Rendezvous after an action.

At the close of an action, and when the dressing stations have been evacuated, the bearer companies will rendezvous with the brigades to which they are attached, unless otherwise ordered.

41. Bearer Company Practice.

With Wheeled Transport.

Order of march.

The Bearer Company will be drawn up in column. The Collecting Station party and the Dressing Station party will be detailed before marching off. The Ambulance wagons, each accompanied by a wagon orderly, general service wagons, carts and water cart will parade in rear. In front of the Bearer Company a party of men told off to act as patients, in marching order, but with forage caps and with their valises empty, will be formed up as a separate company in charge of an officer or non-commissioned officer who will be provided with specification tallies (see para. 40) to be distributed one to each man, stating the nature of his supposed injury. These tallies should be numbered, and the non-commissioned officer in charge of the collecting station will enter in a note book, as each wounded man is brought in, the number of the tally and the name of the No. 4 of the squad, so as to trace by whom the dressing was applied.

Soldiers acting as patients to have tallies showing their supposed injuries.

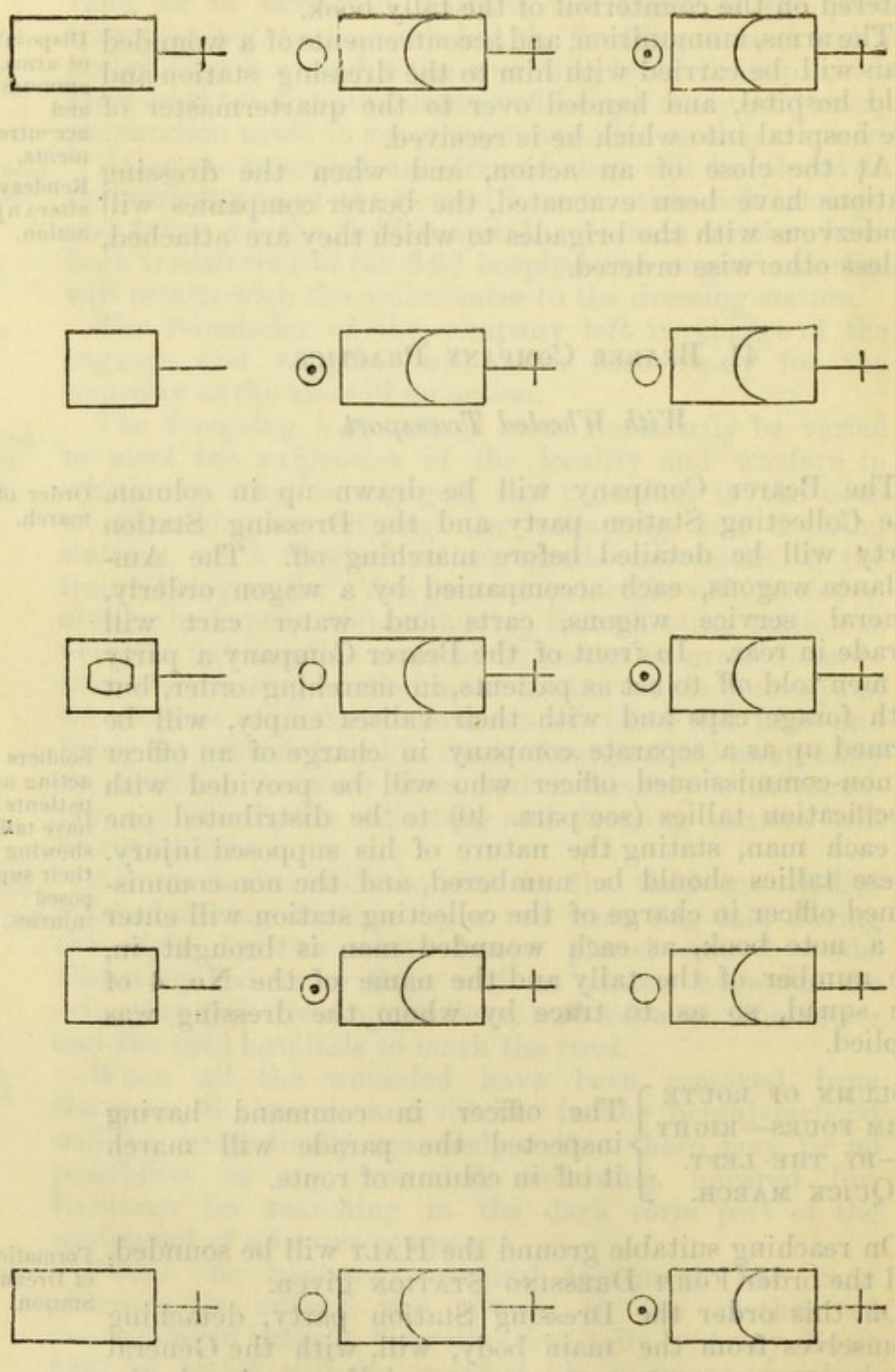
COLUMN OF ROUTE
FORM FOURS—RIGHT
—BY THE LEFT.
QUICK MARCH.

The officer in command having inspected the parade will march it off in column of route.

Formation of Dressing Station.

On reaching suitable ground the Halt will be sounded, and the order Form Dressing Station given.

On this order the Dressing Station party, detaching themselves from the main body, will, with the General Service wagons, carts, water cart, and if so ordered, the Second Line of ambulances, take up their position on



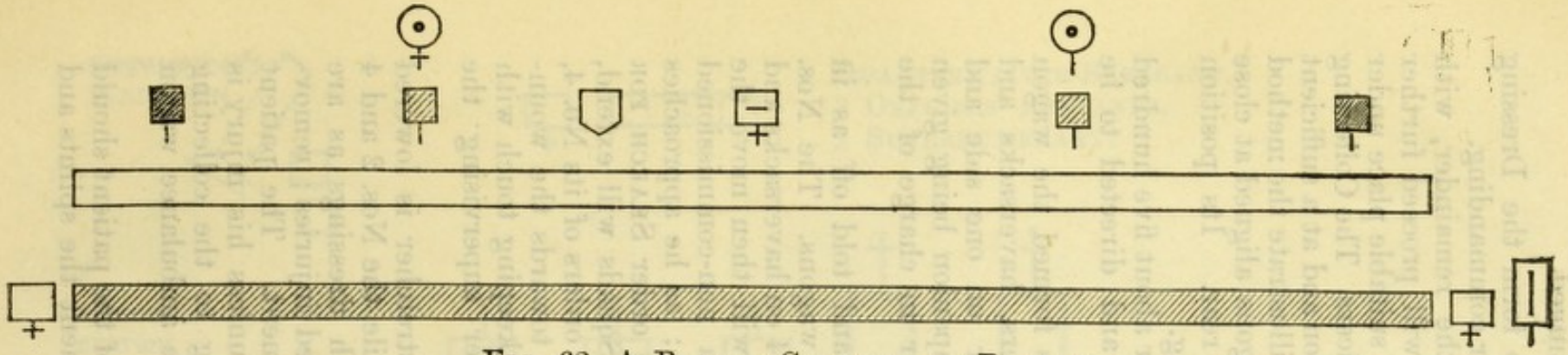
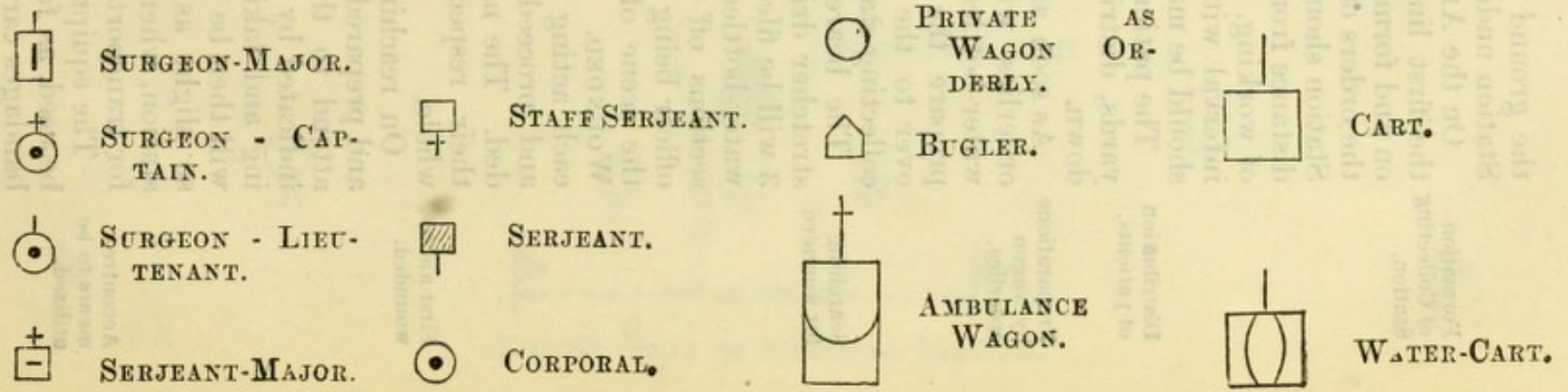


FIG. 62. A BEARER COMPANY ON PARADE.

KEY TO FIGS. 62, 63, AND 64.



FIELD TRAINING—continued.

the ground selected, and proceed to form the Dressing Station under the orders of the officer commanding.

Formation of Collecting Station.

On the ADVANCE being sounded, the remainder, with the first line of ambulance wagons, will proceed further on and form a Collecting Station in a suitable place under the orders of one of the remaining officers. The Collecting Station should be in a sheltered position and at a sufficient distance from the Dressing Station to illustrate the method of working. It is formed by the wagons aligned at close interval with horses' heads to the rear. Its position should be marked by a Red Cross Flag.

Distribution of patients.

The patients will be marched on for about five hundred yards, distributed over the ground and directed to lie down.

Preparations by wagon orderlies.

As soon as the collecting station is formed the wagon orderlies will get out the stretchers, haversacks and water-bottles; place them together on one side and prepare the wagons; the field companion being given over to the non-commissioned officer in charge of the collecting station.

Searching for wounded.

The bearers will be formed up and told off as in stretcher drill in front of the line of wagons. The Nos. 3 will be filed on stretchers, the Nos. 4 on haversacks and water-bottles. The officer in charge will then move the sections off towards the wounded—a non-commissioned officer being in charge of each section; as he approaches the scene of action he will give the order SEARCH FOR WOUNDED. On this command the Squads will extend, each acting independently under the orders of its No. 4, and proceed by the quickest route towards the wounded. The non-commissioned officers keeping touch with their respective sections, the officer supervising the whole.

First aid to wounded.

On reaching a wounded man the stretcher is lowered and prepared by the Nos. 1 and 3, while the Nos. 2 and 4 attend to the patient, applying such dressings as are indicated by the nature of the supposed injuries; removing and taking charge of his equipment. The patient will then be placed on the stretcher, unless his injury is so slight as to allow of his walking to the collecting station, where he will be placed in the ambulance wagon for transport to the dressing station.

Accoutrements to be utilized.

The equipment and accoutrements of the patient should be used, as far as possible, to supplement the splints and bandages carried by the No. 4.

FIG. 63. PLAN OF DRESSING STATION.

FIELD TRAINING—continued.

Work at the dressing station.

While the collecting station party has been at work the dressing station party will have pitched the operating tent and prepared the dressing station as follows :—

Arrangement of wagons.

The second line of Ambulance wagons, if so ordered, the general service wagons, carts and water cart, will form line at close interval, horses' heads to the rear.

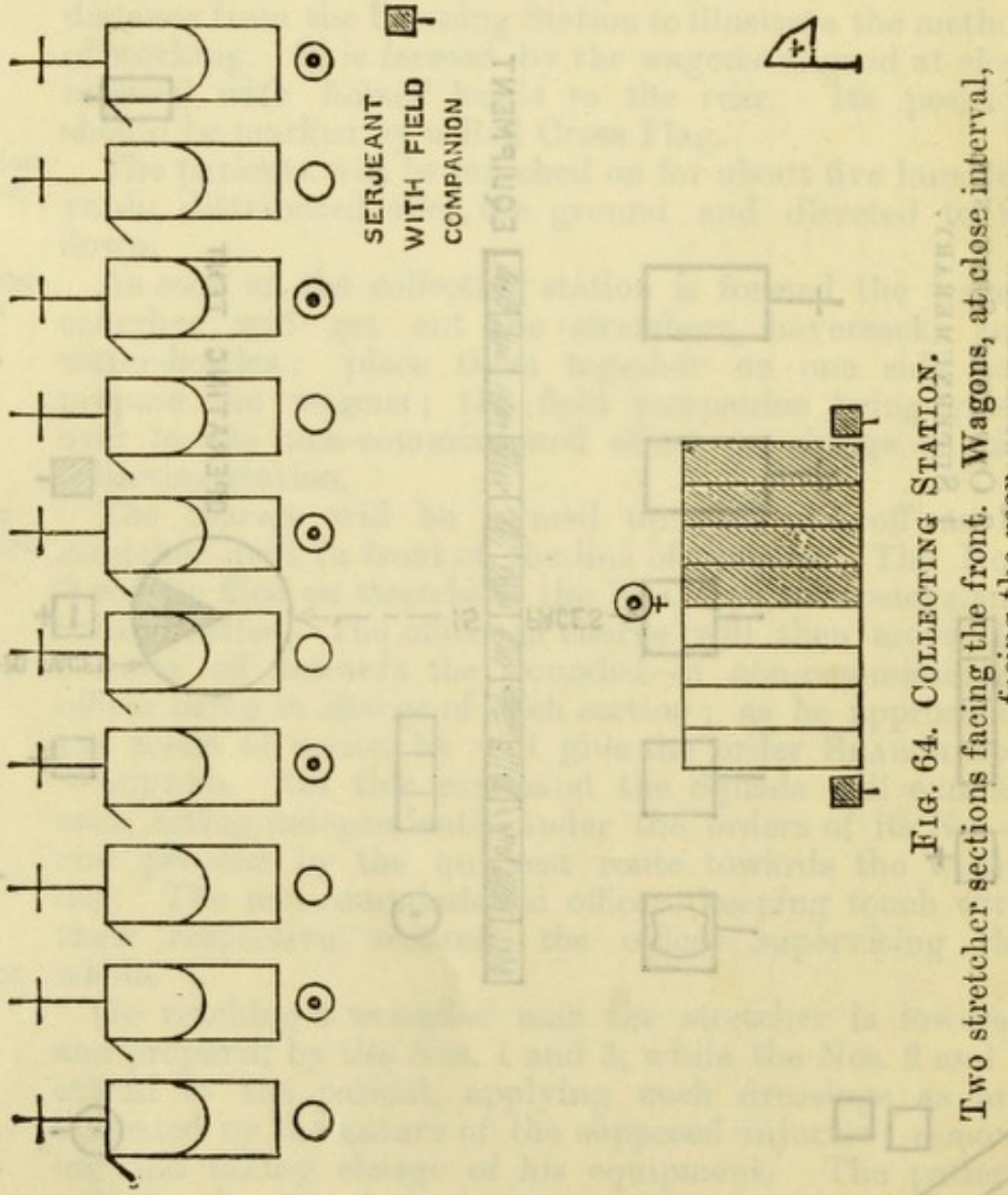


FIG. 64. COLLECTING STATION.
Two stretcher sections facing the front. Wagons, at close interval, facing the rear.

Operating tent.

The operating tent will be taken out of the wagon and pitched opposite the centre of the line of wagons, fifteen paces in front, the door facing the front.

Directing flags.

Two directing flags will be placed in the ground ten paces in front of the doorway and ten paces from each other ; two other flags will also be placed in a line with

these, one on each side, twenty paces from them ; marking the front of the dressing station.

Preparation of surgical equipment.

The wagons and carts will be unpacked and the two medical field panniers brought into the operating tent and the dressings, instruments, &c., taken out and arranged ready for use. The panniers are then opened out, and covered with a blanket and waterproof sheet to form an operating table. The remainder of the equipment will be placed on the ground between the tent and the wagons, so as to be at hand when required.

Trench kitchen.

Trench kitchens will be dug in a suitable spot in rear or to one side of the dressing station, fires will be lighted and water boiled ready to provide the wounded with hot drinks on arrival.

Arrival of wounded.

As each ambulance wagon arrives at the dressing station from the front, it will halt and reverse opposite the space between the two flags in front of the tent. The dressing-station party, assisted by the wagon orderly, will then unload it. The slightly wounded will fall in between the two flags on the left. The severely wounded will be conveyed on their stretchers to the space between the two flags on the right where the wounded will be lifted and laid on the ground. In both instances the rifle and accoutrements of each man will be laid on the ground at his feet. The stretchers will now be placed in the wagons, which will immediately return to the collecting station for a fresh load of wounded.

Examination of work done.

The wounded having been all brought in, and roughly distributed in this way into two groups, the ambulance wagons will be retired in rear of the dressing station, the dressing-station party will fall in two deep in front of the tent, and the company on its return from the front will be halted ten paces in front of the directing flags, and be ordered to stand at ease. The officer in charge of the Dressing Station will now examine all the wounded, explaining to the men any mistakes that may have been made. This accomplished, the order will be given to take off the dressings. The equipment of the bearer company and the arrangements of the Dressing Station will then be shewn and explained. The dressing-station party will strike the tent, and the stretchers, tent, surgical haversacks, water-bottles, &c., will be put away in the wagons, and the company formed up and marched home.

FIELD TRAINING—continued.

With Pack Transport.

Mountain equipment not carried beyond the dressing station.

On the line of march the pack animals in half-sections will follow the Medical Staff Corps. As mountain equipment is not employed nearer the field of action than the dressing station, the mules will be halted wherever it is ordered to be formed, and the bearers will be sent forward to bring in the wounded either on stretchers or by one of the improvised methods. The equipment will be unpacked and the dressing station formed as for wheeled transport. The wounded having arrived at the dressing station, they will be placed in the cacolets and litters for conveyance to the Field Hospital. Subsequently they will be unloaded, and the company formed up and marched home.

42. EXERCISE IN FORMING BEARER COMPANY AND FIELD HOSPITAL ENCAMPMENTS.

Choice of site.

The site having been chosen and the base line decided upon, the camp will be marked out as follows :—

Marking out camp.

Mark the base point with a flag ; measure off the distance required for the front of the camp, viz. : for a Bearer Company 60 yards, or 72 paces ; for a Field Hospital 70 yards, or 84 paces ; mark this with a second flag. The front of the camp being thus laid down, the rear of the ground will now be determined. Place a flag, or man, on the front alignment 6 feet from the base point ; another flag, or man, 8 feet from the base point, towards the rear and 10 feet diagonally from the other flag, or man ; the angle thus formed will be a right angle. Place the third camp colour in the same straight line as the 8 feet side of the triangle and distant from the base point 100 yards, or 120 paces, for the Bearer Company, and 160 yards, or 192 paces, for the Field Hospital. The rear line of the camp will be equal in length and parallel to the base line, and will be marked by the fourth camp colour.

Pitching Tents.

The several rows of tents will now be pitched in the manner described in para. 45. Each row of tents will be accurately dressed from the front as well as from the flank. The distances between tents, &c., to be in accordance with the plans given in the Encampment Regulations, as follows :—

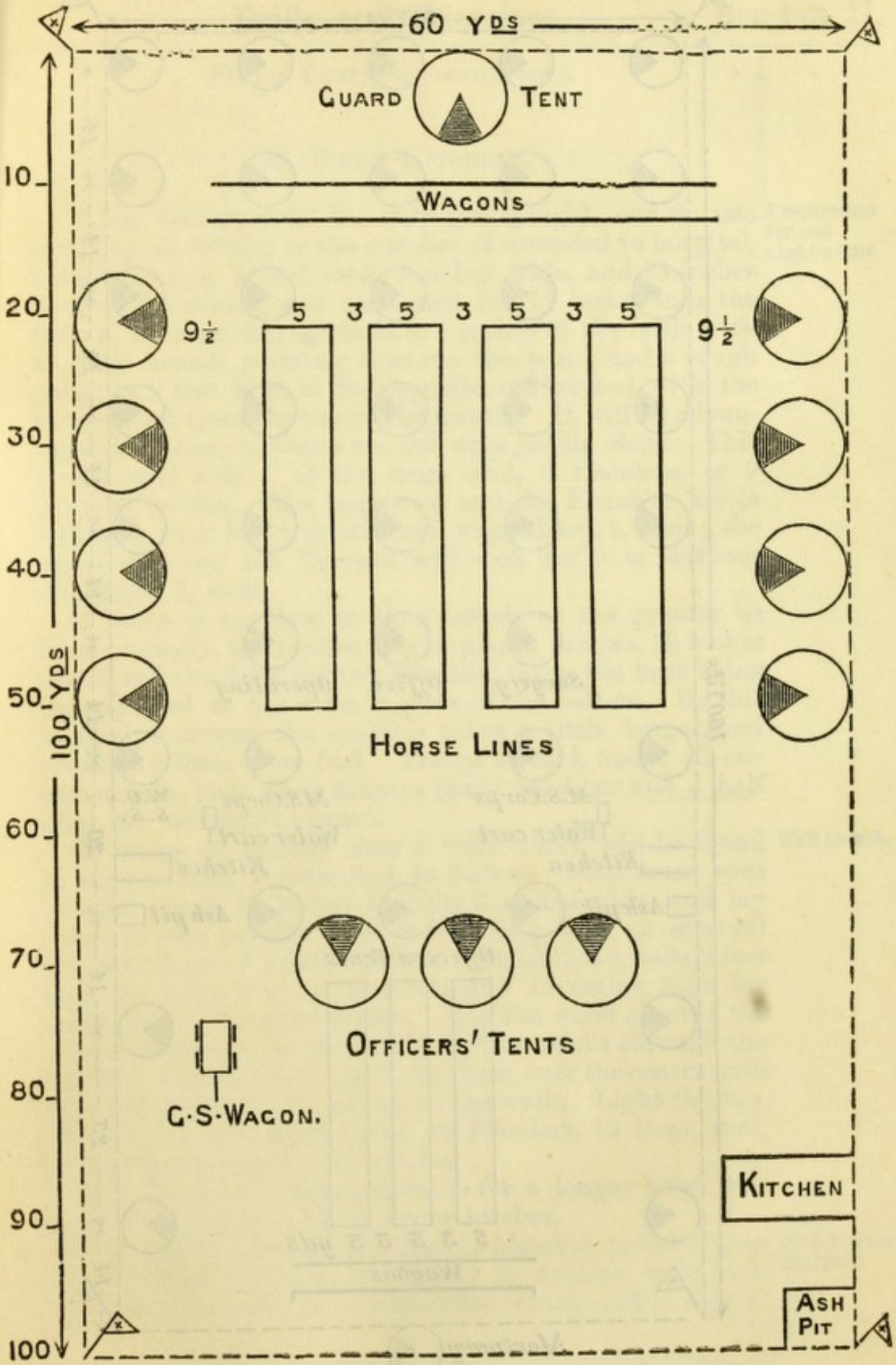


FIG. 65. BEARER COMPANY CAMP.

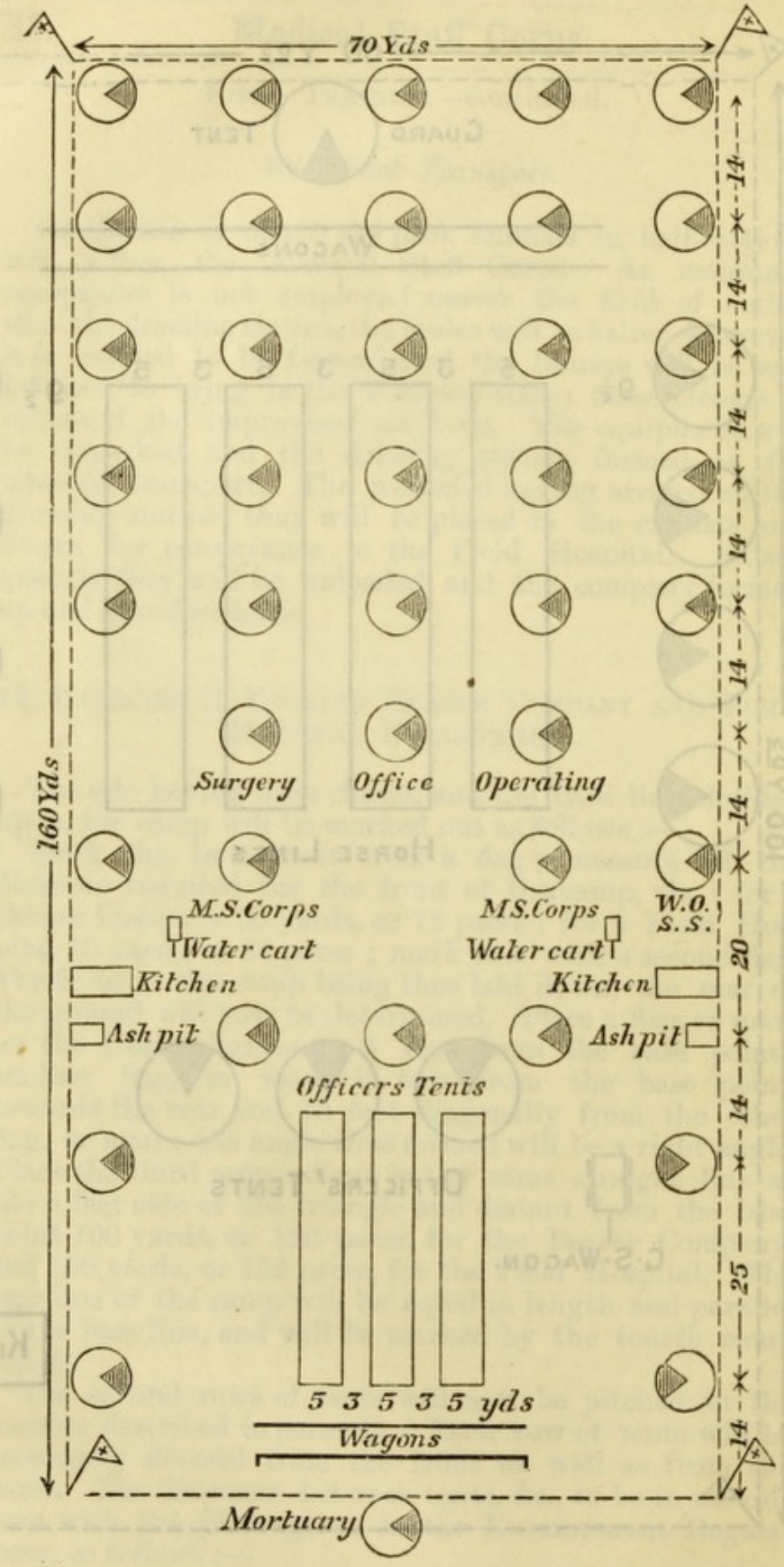


FIG. 66. FIELD HOSPITAL CAMP.
(Scale 30 yards to 1 inch.)

FIELD TRAINING—continued.

43. FIELD KITCHENS.

Preparation for one night's halt.

If the encampment be only for a night, one or two trenches, according to the number of wounded in hospital, should be dug 6 feet long, 9 inches wide, and 18 inches deep at the mouth, and continued for 18 inches into the trench, then sloping upwards to 4 inches at the back, with a splay mouth pointing towards the wind, and a rough chimney 2 feet high at the opposite end formed with the sods cut off from the top of the trench. It will be advantageous if these trenches are cut on a gentle slope. This trench will hold 7 of the large oval, 6 Flanders, or 9 Torrens' kettles. The large oval and the Flanders' kettle will each cook for 8, or without vegetables 15, men; the small oval and the Torrens will cook for 5 or without vegetables 8, men.

If there is no time to dig a trench, or the ground be hard or sandy, the kettles may be placed in rows, 10 inches apart, and the fires lighted between them, the heat being thus applied to the sides in place of the bottom. By this method, however, the cooking takes a little longer, and requires a little more fuel. Troops should, under all circumstances, have their dinners ready one hour and a half after the rations are issued.

Wall trench.

On damp or marshy sites a wall trench will be found to answer best, constructed as follows:—Cut some sods of turf about 18 inches long by 9 inches wide, and lay them in two parallel lines 6 feet long with an interval between them of 2 feet 6 inches. Build these walls 2 feet high for large oval or Flanders and 18 inches high for small oval or Torrens' kettles. Lay the wood all over the bottom between the two walls. Place sticks through the handles of the kettles, and hang them over the centre with the ends of the sticks resting on the walls. Light the fire. This trench will hold about 10 Flanders, 12 large oval, 20 Torrens' or small oval kettles.

If, however, the encampment is for a longer time, it is advisable to make a broad arrow kitchen.

Broad Arrow Kitchen.

* The Broad Arrow Kitchen (Aldershot pattern) consists of three trenches converging to a point, with their mouths connected by a transverse trench and a flue 14

* The following is taken from the "Regulations and Instructions for Encampments, 1889."

FIG. 67. TRENCH KITCHEN.

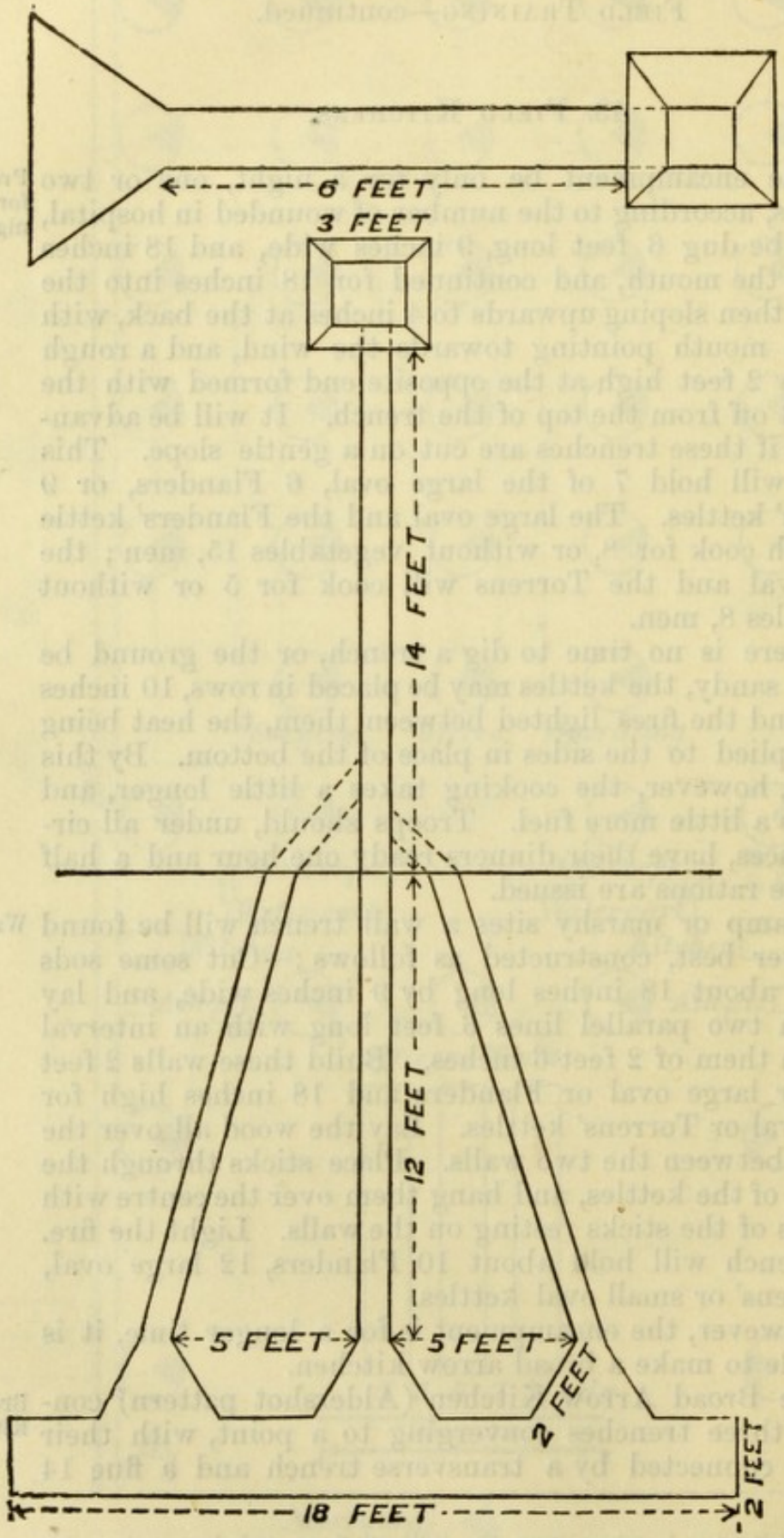


FIG. 68. BROAD-ARROW KITCHEN.

feet long connecting these trenches, with a chimney 5 or 6 feet high, formed from the turf cut from the top of the trenches and other sods obtained for this purpose.

This kitchen is constructed as follows :—The site having been selected, a picket is driven to mark the centre of the chimney, and a square of 3 feet marked off on the ground, with the picket as a centre, for the base of the chimney.

The main trench, 26 feet long, is next traced, and a picket driven at a distance of 14 feet from the centre of the chimney to mark the head of the centre trench, which is 12 feet long and 9 inches wide. Two other trenches are traced of similar dimensions, one on either side, converging on the head of the centre trench, with their outer ends at a distance each of 5 feet from the central one. Each trench has a splay mouth, 2 feet wide and 2 feet long. A transverse trench, 18 feet long, 2 feet wide, and 21 inches deep, connects their outer ends.

One man excavates each trench, commencing from the ends nearest the chimney, the outer trenches from points 18 inches on each side of the central picket (marking the head of the central trench). Each trench is 18 inches deep at the mouth, this depth carried for 18 inches inwards, gradually diminishing to 6 inches where it enters the flue. Another man cuts out the bottom of the chimney and builds it up with the sods cut in construction of the trenches. The third man excavates the draught or flue, which is 14 feet long, 9 inches wide, and 6 inches deep ; and, as soon as the trenches are dug, he bores a tunnel from the head of each into the flue, taking care that the openings from the outer tunnels do not face one another (which would interfere with the proper working of the draught), then covers the flue with turf or sods from the top of the trenches to the chimney. The other two men excavate the transverse trench and provide turf for the construction of the chimney. The men, on the completion of the trenches, are employed respectively in providing and mixing clay, carrying water, and covering the trenches for the reception of the kettles. Great care must be taken in the construction of the chimney ; all holes and interstices must be plastered up with clay.

The inside of the trenches may be plastered with clay if it be plentiful. If this is done the dimensions should be slightly increased. If clay is scarce the trenches should be cut smooth.

Each trench will accommodate about 11 Oval kettles, 9 Flanders, 12 Torrens' or 12 small Oval kettles, the

FIELD TRAINING—continued.

holes for which should be modelled in clay, using the base of a kettle as a mould. The intervals across the trench should be covered by sods placed grass side downwards, or stones, hoop-irons, sticks plastered with clay, and all interstices closed with clay or sods.

This kitchen will last a fortnight, even if not plastered with clay. In using Torrens' kettles a greater number of men's dinners can be cooked by placing them close together without intervals, and banking it with sods and clay. By this arrangement a trench 12 feet long will accommodate 16 kettles.

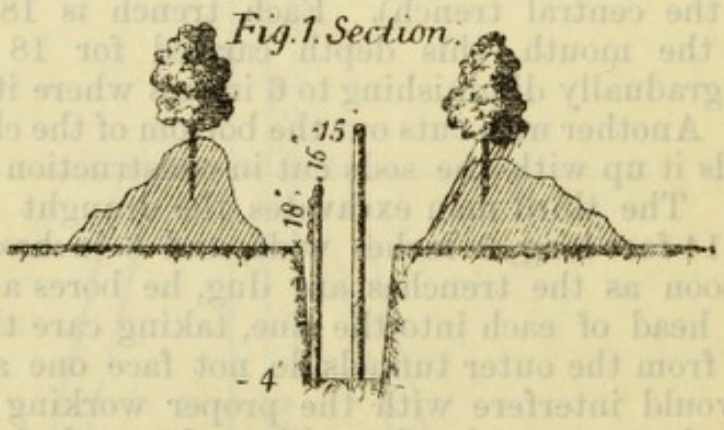
Tools required are: Axes, pick, 3; Hook, bill, 1; Kettles camp, 3; pickets, bundle of, 1; Spades, 4.

Time to construct with 1 non-commissioned officer and 5 men, 4 hours; and time to cook, 1 hour.

44. LATRINES.*

Selection of situation.

Latrines should be made as soon as the troops arrive on the ground.



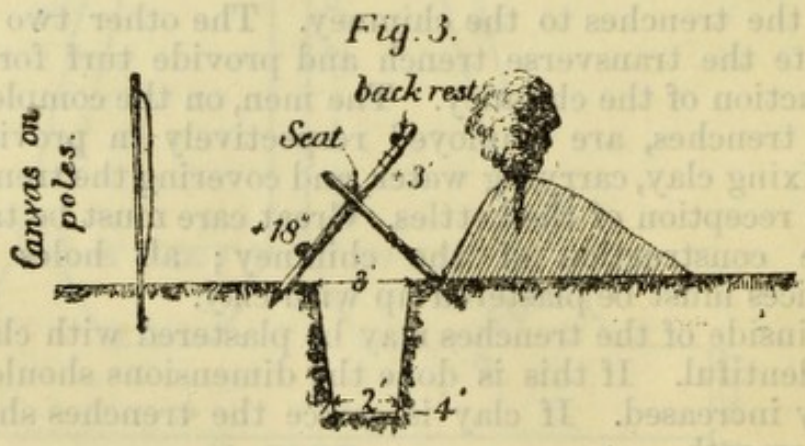


FIG. 69.—LATRINES.

* Extract from the "Regulations and Instructions for Encampments, 1889."

FIELD TRAINING—continued.

A small shallow trench will suffice for one night, and should be invariably filled in in the morning, before the troops march off. In standing camps latrines may be made with seats, as shown in Fig. 69. Preparation for one night's halt.

The seat being a simple rough pole, the trench should be made as narrow as possible, and from 3 to 4 feet deep. A fatigue party should throw a couple of inches of earth over the soil every day. This, if carefully done, will prevent all smell. For a longer stay.

In a standing camp urinals should be established. Urinals.

45. TENT PITCHING EXERCISE.

The latest patterns of circular single tents are Mark III. and Mark IV. These tents are intended to accommodate 15 soldiers or 4 patients. They are made of duck, are provided with 6-inch eaves to carry off water clear of the walls, and have three ventilators covered with bibs. Mark III. weighs, without appurtenances, 41½ lbs., has an internal capacity of 623 cubic feet, and its diameter is 13 feet. It has 23 bracing lines, 21 looping lines, and 44 pins are supplied with each tent, 42 being actually required to pitch it. Mark IV. weighs 44½ lbs., has an internal capacity of 672 cubic feet, and its diameter is 13 feet 6 inches. It has 24 bracing lines, 22 looping lines, and 47 pins are supplied with each tent, 44 being actually required to pitch it. The height of the walls of both patterns is 2 feet 2 inches, and the pole, suitable for both patterns, is in two parts and is 9 feet 9 inches long. (See List of Changes in War Materiél, 5355, January, 1888, and 6240 and 6241, February, 1891.) Patterns of circular tents.

COMPANY ATTENTION—NUMBER BY THREES FROM THE RIGHT—TENT SQUADS RIGHT FORM—QUICK MARCH—LEFT TURN—ON THE LEFT CLOSE—QUICK MARCH.

The Company will be drawn up two deep upon the ground which the tents are to occupy. The tent squads, each consisting of three files, will be told off by numbering off by threes from the right. Pitching tents.

The front rank are pole men, second rank are packers, and the third rank are peg men. A pole man and packer from each squad will then fetch a pole and tent respectively and return to their places.

FIELD TRAINING—continued.

TENT SQUADS—FROM THE RIGHT—TO — PACES EXTEND.

The six men on the right stand fast; the remainder turn to the left and step off in quick time, the valises being carried on the shoulder and the poles at "the shoulder." Each tent squad upon completing the required number of paces halts and turns to the front.

The valises areplaced on the ground; the jointed poles fitted together and held upright between the feet; the pole man holding it looks to the right for his dressing. STEADY is given when this has been effected. In the meantime the packers open the valise, remove the tent and peg bag, and adjust the mallets, being assisted by the peg men. The second pole man drives in a peg (flat surface facing the direction in which the tent is to be raised) between the heels of the other pole man. Open out the tent; lower the pole and insert it into the cup at the head of the tent; the base of the pole is placed against the peg; the fly of the doorway fastened over the pole as this lies upon the ground. The two pole men get inside the tent, the four other men each take a peg and a red runner; all being ready, at a given signal the tents are raised simultaneously by the pole men acting in concert with the others. The four pegs for the red runners are at once driven in and the runners placed upon them; the pegs for the other runners and for the tent walls are then placed, care being taken that the former are in a straight line with the seams and at such a distance as will insure the runners being midway between the tent and the peg.

A small trench and drain will then be dug around the tent. The mallets, valises, &c., are placed inside the tent; the doorway laced up, and the squad falls in before its tent.

Striking tents.

To Strike the Tent.—Unlace the doorway, leaving the fly fastened; remove the valise and mallets; roll up and secure with a hitch the bracing lines, except those attached to the red runners. Detach the walls from the pegs.

Pole men enter the tent and grasp the pole; remainder of squad stand by the four red runners; the signal being given the tent is lowered to the ground, pole withdrawn, and pole men come from under tent; remaining bracing lines rolled up and secured; tent dragged clear; peg men collect the pegs; pole men lash poles together; packers

FIELD TRAINING—continued.

proceed to fold up tent as follows :—Spread it out neatly in this form ⅄ and fold the sides over to meet in the centre ; fold right over again until breadth required for depth of tent bag is obtained ; fold down the head about half-way towards the base ; roll up tightly from head to base ; replace in valise, bag being placed on top. The squads are then closed.

46. HOSPITAL MARQUEE PITCHING EXERCISE.

A hospital marquee, weighing 512 lbs. complete, consists of— [Description of marquee.]

1 inside linen roof	Packed in a canvas valise, laced up the centre, and marked on the outside "Hospital Marquee."
1 outside ditto	
8 walls (4 inside and 4 outside)	
82 bracing lines (40 inside and 42 outside), with wood runner and button to each	
2 wooden vases, painted red	
2 weather lines (90 feet long each) with large runners	
180 small tent pegs	Contained in 1 peg bag, marked on the outside with contents and marquee to which it belongs.
4 large ditto (for weather lines)	
2 mallets	
1 set of poles, consisting of 8 pieces, viz., 1 ridge in two pieces, and 3 standard or upright in two pieces	Lashed together in one bundle by two box cords.
1 waterproof bottom, made of painted canvas, in four pieces, each piece measuring 15 by 8 feet	Rolled in a bundle round a thin pole, and tied by three box cords.

Laying out the Ground for Pitching.—Undo and empty the peg bag (keeping the four large pegs for the weather lines by themselves), fit the handles in the mallets, and fix the two pieces of the ridge pole together. This done, proceed to lay out the ground for pitching the marquee as follows :—Lay the ridge pole on the ground selected, and drive in a peg at its centre and at each of its two end holes. These pegs will mark the positions of the standard or upright poles, and will be seven feet apart. With each end peg as centre, in a semi-circle with a radius of six yards, lay thirteen pegs with their points inwards where they are to be driven. This will be easiest done as follows,—step six yards from one of the end pegs, and in a straight line with the three standard pegs lay the centre peg of the semi-circle ; next step six yards to each side of the end peg, and on a line at right angles to the three standard pegs lay a peg for each end of the semi-circle ; then lay at each side [Laying out the ground.]

FIELD TRAINING—continued.

between the centre peg of the semi-circle and the two end pegs, equal distances apart, five pegs, and the semi-circle of thirteen pegs is complete. The other end will be done in the same way.

For the sides of the marquee on a straight line parallel to the three standard pegs, and five yards distant, lay six

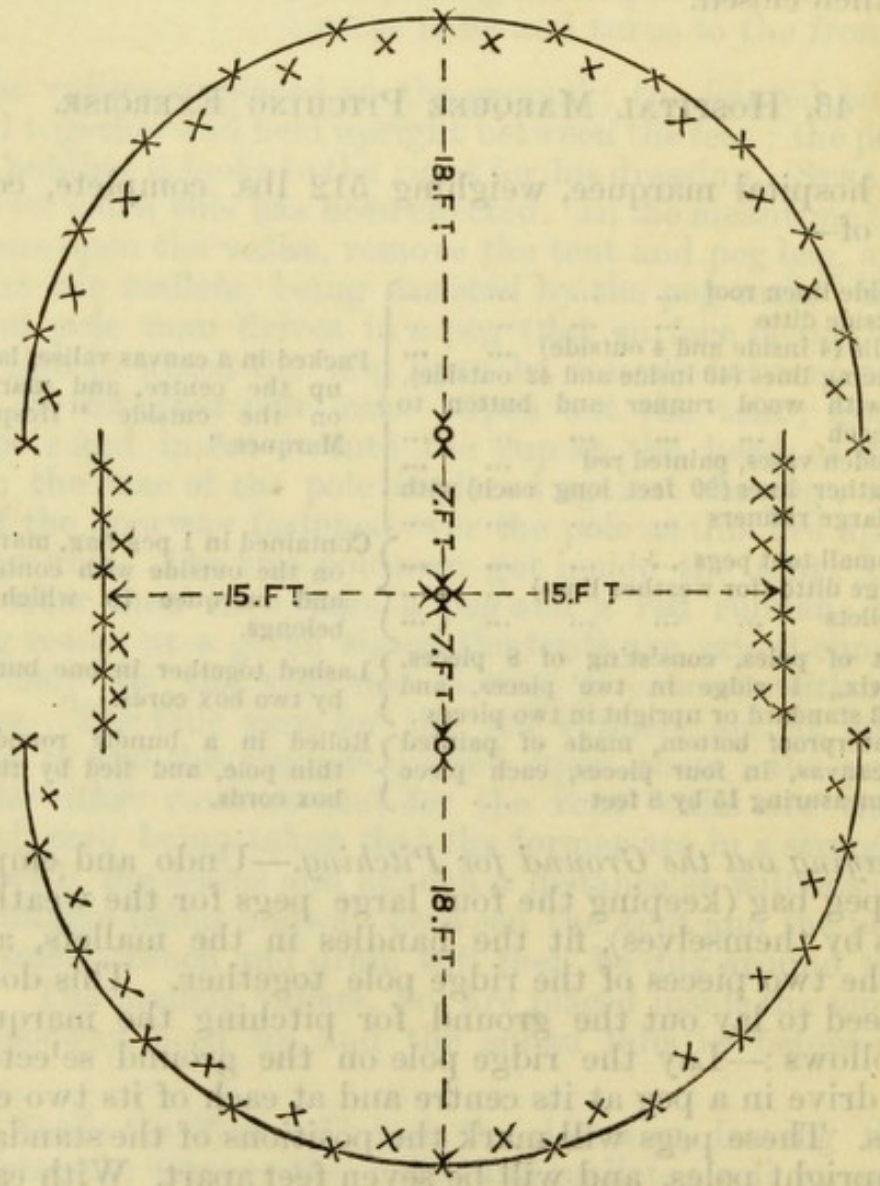


FIG. 70. GROUND PLAN OF THE PEGS OF THE MARQUEE.

pegs, the first and last of which will be eighteen inches distant from the lines formed by each end standard peg and the two end pegs of each semi-circle. Now the pegs for the outer roof are all laid, and should be driven before proceeding further.

For the inner roof, lay a peg between each two pegs of the outer roof, but on a line one foot further in. The

FIELD TRAINING—continued.

space, however, between the third and fourth pegs on each straight line is to be left blank for the doorway. These driven, the pegs are complete for the marquee, except the four weather-line pegs. These are each driven at a corner where two lines would meet to form a right angle if drawn from each end and centre peg of the semi-circle.

Arrangement of marquee.

Arrangement of Marquee before raising.—The ground being laid out, carry the marquee within the line of pegs, unlace the valise, and arrange and spread out the marquee, the roofs one inside the other, in such a manner that the base and ridge will be parallel with the line of the standard pegs, and the former touching them. Roll up the upper side of the outer roof as far as the ridge, so as to expose the web slings of the inner roof, insert the ridge pole, and roll up the upper side of the inner roof in a similar manner.

Fix the two pieces of each standard pole together by their numbers. This done, pass them through the openings in the inner roof, and their pins through the holes in the ridge pole, through the eyelet in the two end web slings and also through the eyelet-holes in the ridge of the outer roof. Now fit the vases on the pins of the end standards, and pass the opening lines of the ventilators through the holes in the ridge of the inner roof by the side of the standards. Next pass the lines for opening and shutting the windows through the corresponding eyelets in the inner roof. Unroll the inner and outer roofs to their proper position, bring the ends of the standard poles so as to prop against the three standard pegs, and square the ridge pole on the three standards thus placed.

Raising marquee.

Raising the Marquee.—To raise the marquee ten men and one non-commissioned officer will be required. These will be styled four weather-line men, six standard men, and one director. One weather-line man will take up a position at each large peg, holding in his right hand the runner, and in his left the line, with a loop ready at any moment to slip on the peg. Two standard men will take up a position at each pole, one at the foot, the other at the top, facing each other. When the instructor sees all are ready he will give the word to raise, when all, working together, should steadily erect the standards, taking care not to raise one before the other. The instructor should now go to the side and dress the standard poles, tightening and slackening the weather-lines as required until the poles are perpendicular. He should next go to the end and dress the poles in a similar manner in that direction.

FIELD TRAINING—continued.

Bracing lines.

Putting on the Bracing Lines.—The weather-line men should not leave their posts until the bracing lines are on. Four of the standard men should put on the bracing lines, while two of them should take mallets to drive any loose pegs there may be. To put on the bracing lines, two men should go to each side of the marquee, commencing with the outer roof ; one should take the line at one side of the window, and the other the line at the other side, which should be put respectively on the third and fourth pegs of the outer straight line, thus working towards the ends until meeting the men from the other side. In tightening the bracing lines the marquee should be pulled towards the pegs so as to slacken the line, otherwise the pegs will be pulled out of the ground. The lines of the inner roof should be put on in a similar manner, beginning at each side of the window and working round to the ends. When two lines are together, they should for the present go on the same pegs, but afterwards be shifted.

Curtains.

Putting on the Curtains.—The curtains are in eight pieces, four for the inner wall and four for the outer wall. The outer curtain should be put on so that the ground flap be inside, and that it can be pegged on the outside. The inner curtain should be put on with the flap out, so that it can be pegged on the inside. Commence with the outer curtain at each side of the doorway and work round towards the ends, taking care to leave enough to overlap and close the doorway. When the curtains are on they should be pegged down both inside and outside.

Trenching.

Trenching the Marquee.—A trench nine inches broad and four to six inches deep should be dug round the curtain, especially on the upper side, if the ground be sloping. The trench should be cut well under the curtain, so as not to leave a ledge, otherwise the water will drip on the ledge and run under.

Points to attend to.

Points to be attended to.—When rain comes on, the ropes, as they become wet, get tight, and, if not attended to, will pull the pegs out of the ground or break the poles. They will also get tight with a heavy dew. Thus it will be necessary to slack them when rain is expected, and also at night if there is a heavy dew. Again, if the ropes have been wet, they will slacken as they dry, and will require to be braced up, otherwise the marquee may flap and draw the pegs. The doorway of the marquee should be on the shelter side. The curtains should be taken off the pegs and raised daily for ventilation. They

can be fastened to the bracing lines by the buttons of the peg loops.

Striking the Marquee.—Unfasten the curtains at the bottom, and unhook them from the roof, beginning with the inner one. Fold each piece into eight parts. The four weather-line men should now stand by the weather-lines, while four men should unfasten and do up into a skein the bracing lines, beginning with the inner roof at each side of the doorways and working round to the ends. The two mallet men should take up the pegs as the lines are taken off them, and put them away in the peg bag. Striking marquee.

Lowering the Marquee.—The men should take up positions as in pitching, one to each weather-line and two to each pole. When all are ready, the non-commissioned officer should give the word to lower. The weather-line men should take the lines off the pegs, but keeping a firm hold, and the standard men should have hold of the poles. All together they should steadily lower the poles, the men at the feet of the poles keeping them from slipping, and the other men lowering them by walking backwards towards the ridge, in the same way as men lowering a ladder. Lowering marquee.

Repacking the Marquee.—Roll up the four weather-lines and take the vases off the pins, leaving them there attached by the ventilating cords. Spread out the roofs and roll up the upper flap so as to expose the ridge pole. Next pull away the standard poles, and remove the ridge pole from the slings. Repacking marquee.

Folding the Marquee.—This done, unroll the upper fold of the roof. Bring over each end to the centre, across the middle of the window, and fold the square thus made from the ridge to the base into three equal parts. Place the eight pieces of curtain on the roofs, lengthwise, overlapping in the centre, and the flaps towards the thick end. Roll up the whole, thus placed, evenly, commencing with the thick end, taking care not to have the roll too wide or too narrow for the valise. Folding marquee.

Putting Marquee in Valise.—Spread out the valise, and shoving one of the side flaps under the marquee, roll it in. Having arranged the flaps, lace them, commencing with the ends. Stowing marquee.

Section II. Medical Staff Corps

X. CEREMONIAL.

47. Inspection or Review.

Formation.—The Medical Staff Corps for inspection will be drawn up at open order, as detailed in Infantry Drill. Swords will be sloped.

Receiving an Inspecting Officer.

GENERAL SALUTE—CARRY SWORDS. When the Inspecting Officer arrives in front of the centre, at a distance of about 60 paces, he will be received with a salute, the men carrying swords, the officers saluting with the right hand, taking the time from the Commanding Officer, and the bugler sounding the general salute.

Inspection in Line.—The Commanding Officer, who will ride on the side furthest from the troops, accompanies the Inspecting Officer as he passes down the front of the line, from right to left, returning along the rear, the other officers remaining steady, and the men standing with swords at the carry. The Commanding Officer then takes the orders of the Inspecting Officer as to the movements to be performed.

RETURN SWORDS. CLOSE ORDER—MARCH. Swords will be returned and close order taken as the Inspecting Officer is going to the front of the line.

Inspection in Column.—When companies in column are required to take open order for inspection, the surgeon-captain of each company will receive the Inspecting Officer with a salute, and follow him during the inspection of his company.

Inspection of a Bearer Company or Field Hospital.—When parading as a Bearer Company or Field Hospital, the Army Service Corps attached will be formed up for inspection 31 yards in rear, the ambulance wagons in the first two lines, general service and other wagons in the third line, at close interval, the flank wagons correctly covering the flanks of the Medical Staff Corps. If the bearer company is provided with mountain equipment, the mules will be drawn up for inspection in rear of the Medical Staff Corps.

CEREMONIAL—continued.

48. MARCHING PAST.

As laid down in Infantry Drill.

When one or more bearer companies or field hospitals are ordered to march past, each will do so as a separate unit, followed at a distance of 31 paces by its wagons in two or more ranks ; or mountain equipment, if provided with the latter.

In the case of bearer companies, the ambulance wagons will lead, the tail-boards lowered, and the wagon orderlies will be seated on the hind seats in rear of the near compartments. The directing flank of each rank of wagons will correctly cover the directing flank of the company.

Under no circumstances will stretchers be carried in the hand by bearers in marching past.

XI. LANCASTER SWORD-BAYONET EXERCISE.

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49. DRAWING, CARRYING, SLOPING AND RETURNING SWORDS.

FOR SWORD EXERCISE FALL IN TWO DEEP.

DRAW SWORDS.—Grasp the hilt with the right hand and the scabbard just below the frog with the left.

Two.—On the word *two* draw out smartly to the front, come to the "recover," the sword perpendicular, edge to the left, hilt in line with the chin, elbow close to the body ; the left hand resumes the position of attention directly the sword is drawn.

Three.—On the word *three* bring the sword smartly down to the position of "carry," hand level with the elbow, blade perpendicular, edge to the front.

SLOPE SWORDS.—Relax the grip of the third and fourth fingers, and allow the blade to fall on the right shoulder.

RETURN SWORDS.—From any position. Grasp the scabbard with the left hand, and enter the point about one inch.

SWORD BAYONET EXERCISE—continued.

Two.—On the word *two* return the sword smartly, and drop the hands to the sides.

DRAW SWORDS.—As before.

SLOPE SWORDS.—As before.

STAND AT EASE.—When at the slope. Draw back the right foot 6 inches, and bend the left knee.

Except at the SLOPE, when the fingers may be slightly relaxed, the same grasp of the sword is to be retained throughout the exercise, the middle knuckles in the line of the edge, the thumb and fingers clasped round the handle.

Staff-serjeants being equipped with the long sword will perform these movements according to the instructions laid down in Infantry Sword and Carbine Sword-Bayonet Exercises.

Compliments to Officers.

Non-commissioned officers and men on duty with drawn swords will CARRY SWORDS to all officers.

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SECTION III.

STANDING ORDERS FOR THE WARRANT OFFICERS, NON-COMMISSIONED OFFICERS AND MEN OF THE MEDICAL STAFF CORPS.

I. SPECIAL DUTIES OF WARRANT OFFICERS, NON-COMMISSIONED OFFICERS AND MEN EMPLOYED IN HOSPITALS.

I. WARRANT OFFICER OR NON-COMMISSIONED OFFICER EMPLOYED AS WARDMASTER.

1. General Duties.

Responsibility of wardmaster.

1. The wardmaster, who will invariably be the senior warrant officer or non-commissioned officer employed in the hospital, will supervise the duties of the whole hospital establishment under him. He will be responsible to the officer in charge for the careful tending of the sick as well as for the good order of the wards and the discipline of both patients and attendants, and he will be careful that patients on admission are made acquainted with the orders for their guidance (Appendix I.).

Relation to superintendent and nursing sisters.

2. In hospitals where a lady superintendent or acting superintendent and nursing sisters are employed, he will in no way be relieved of full responsibility for discipline, but will be careful not to interfere with the duties assigned to the lady or acting superintendent, or with the orders she may give to the nursing sisters.

To attend medical officer's visits to wards.

3. He will attend the officer in his visits to the wards, and carefully note his instructions and orders.

Section III. Standing Orders for the

WARDMASTERS' DUTIES—continued.

Admission and discharge book and heading of diet sheets.

4. When a patient is admitted into hospital he will enter his name and all particulars regarding him from the company sick report, in the Admission and Discharge Book (Army Book 27), and fill in the heading of the Diet Sheet (Army Form I 1202).

To send for officer in case of emergency.

5. When any case of illness or accident is brought to hospital, or in the event of any accident, emergent illness, or attempted suicide resulting in personal injury, occurring in the hospital, he will cause a medical officer to be at once informed, and, pending his arrival, will take such steps within the limits of his training as may appear to him to be necessary to meet the requirements of the case.

Distribution of wine, spirits, and malt liquor.

6. He will daily receive from the steward the wines, spirits, or malt liquor ordered for the patients, and be responsible for their correct distribution in accordance with the orders of the officers. When nursing sisters are doing duty in the hospital, he will hand over to them such of these extras as are ordered for patients in their wards.

Care of serious cases.

7. If any case of a serious nature is in hospital, and not under the charge of a nursing sister, he will be careful to visit such patient at intervals, to see that he is being properly cared for, and that nourishment and medicine are administered according to the instructions of the officer.

To visit wards at mealtimes.

8. He will go round the wards at breakfast, dinner, and tea, and see that the diets are properly distributed and served, and that the patients conduct themselves in an orderly manner.

Non-commissioned officers when patients to wear chevrons.

9. He will see that non-commissioned officers, while patients in hospital, wear chevrons denoting their rank on their blue serge waistcoats or gowns. When confined to bed the chevrons will be placed over the bed-head board of the patient.

Bedtime and lights out.

10. He will see that every patient is in bed by 9 o'clock p.m. in winter and 10 o'clock p.m. in summer, and that no conversation is permitted after these hours. He will see that lights are put out, or gas lowered at the proper time ; and will make his report (according to instructions received) to the orderly or other officer.

To report a death and have the body taken to the mortuary.

11. When a death takes place he will report it to the orderly officer at once, or where there is no orderly officer, to the officer in charge as soon as possible. He will take the necessary steps for the removal of the body to the mortuary, and be responsible for its being placed there with the utmost decorum and propriety.

Inspecti n

12. When men are discharged from hospital he will

WARDMASTERS' DUTIES—continued.

parade them at the proper hour for inspection by the orderly officer, before handing them over to the non-commissioned officer whose duty it is to march them to barracks. (*See* paragraph 37.) — of patients discharged.

13. He will accompany through the wards the officer on garrison duty authorised to visit the hospital. — To accompany officer on garrison duty.

14. He will not leave the hospital without formally placing the next senior present in charge of his duties, after receiving permission to do so from the officer in charge or orderly officer. — To delegate his duty when leaving hospital.

15. When the daily diets and extras have been entered on the diet sheets by the officers, he will transmit them to the steward, who will return them to him with the Hospital Diet Account (Army Form F 735) and the Provision Ticket (Army Form I 1218). He will check pages 2 and 3 of the former by the latter, which he will then pass to the cook, retaining Army Form F 735 for the signature, on the following day, of the officer in charge. (*See* paragraph 71.) — Diet sheets and accounts.

16. He will take over from the steward the equipment shown on the ward inventories (which will not include bedding or patients' personal equipment), and he will be responsible for the same to the quartermaster or to the officer in charge if there is no quartermaster. — Charge of ward equipment.

17. He will take over from the steward the regulated quantity of bedding for each ward, and will keep a bedding book (Army Book 54), in which all bedding drawn from or returned to the steward will be accounted for. (*See* paragraph 77.) All transactions must be entered and signed in this book as they occur, and he will be responsible for the balance of bedding shown therein. — Charge of bedding.

18. He will, in a book to be kept by him for that purpose, obtain the signature of ward orderlies to the correctness of the equipment and bedding on their assuming charge of wards. (*See* paragraph 92.) He will frequently inspect the equipment and bedding to ascertain whether any damage has been done thereto, and will check them with the inventories every week and on every occasion of an orderly being relieved or becoming non-effective. — To hand over ward equipment and bedding to ward orderlies, and to check them weekly.

19. He will, on the admission of each patient, draw from the steward, the personal equipment required for his use, and will be responsible that it is returned into store on the patient's discharge or death. A list of these articles is given in Appendix No. 2. — Issue and return into store of patient's personal equipment.

20. When patients are able, he will obtain their — Patient or

WARDMASTERS' DUTIES—continued.

ward orderly to sign for personal equipment.

signature on the counterfoil in Army Book 42, as an acknowledgment of having received these articles, but when patients are so ill as to be unable to look after their equipment he will cause the ward orderly to endorse the book. (*See* paragraph 93.)

To report damages.

21. He will immediately report to the officer in charge, or to the quartermaster in a hospital in which one is doing duty, all damages or deficiencies chargeable against patients and others, as well as breakages of crockery or table glass, which when shown to be caused by accident are, in accordance with Regulations for Army Service Corps Duties, chargeable to the public. (See paragraph 41.)

Library books.

22. He will have charge of books issued to patients from hospital or garrison libraries, and will prevent any improper use of them. He will at once notify any damage to them to the quartermaster, or to the officer in charge of a hospital in which no quartermaster is doing duty, in order that the amount may be assessed and recovered by means of the Personal Charge Book, as laid down in Regulations for Army Medical Services.

Patients' writing paper and letters.

23. He will submit all applications from patients for writing materials, tobacco, &c., to the officer in charge of the ward for approval, and will take such requisitions and letters to be stamped, to the officer in charge of the hospital for transmission to the patient's commanding officer. Requisitions for these articles will be made on Army Book 30. He will deliver all letters to patients in hospital.

Unauthorised arttcles in wards.

24. He will take care that no money, articles of diet or extras, books, tracts, pictures, or unauthorised articles of equipment are introduced into the wards without the previous sanction of the officer in charge.

2. Duties as Compounder of Medicines.

Responsibility for medical stores.

25. If qualified as a compounder of medicines he will be responsible for the care of the surgery and its contents, and for all medical stores, surgical instruments, and other appliances entrusted to his custody.

Arrangement and issue of medicines.

26. He will be responsible for the methodical arrangement of all drugs and for their economical use, and the regularity and punctuality of all details in the issue of medicines.

Poisons to be locked up.

27. He will keep the following poisonous drugs in a separate cupboard under lock and key as well as such other drugs as the officer in charge may order to be so kept :—

Arsenic and its preparations.
Aconite and its preparations.

WARDMASTERS' DUTIES—continued.

Alkaloids, all poisonous vegetable.
Atropine and its preparations.
Belladonna and its preparations.
Cantharides and its liquid preparations.
Chloroform.
Chloral hydrate and its preparations.
Corrosive sublimate and its preparations.
Creasote.
Croton oil.
Elaterium.
Emetic tartar.
Ergot of rye and its preparations.
Morphia, preparations of.
Nux vomica and its preparations.
Opium and its preparations.
Prussic acid and its preparations.
Strychnine and its preparations.

28. He will himself dispense all prescriptions, and under no pretence will he delegate this important duty. Medicines dispensed at the surgery will be carefully labelled with the name of the patient for whose use the medicine is intended, the directions for use, and the date of prescription. To dispense prescriptions.

29. Medicines intended for external use will be so labelled, will be dispensed in fluted bottles, and when necessary will have the additional label "Poison." Poisons and medicines for external use.

30. If at any time the compounder is in doubt as to the nature of a prescription, he will before dispensing it refer for instructions to the nearest medical officer. Cases of doubt.

31. He will copy in a book (Army Book 39) all prescriptions received from out patients, and will keep the originals filed ready for inspection. He will not repeat medicines or make up private prescriptions without the authority of a medical officer. Copying and repeating prescriptions.

32. He will keep and prepare all returns and forms required for the receipt, expenditure and supply of medical stores, surgical instruments, appliances and medicines. Returns.

3. Delegation of certain Duties.

33. In hospitals where the employment of an Assistant Wardmaster is specially authorised, he will act under the wardmaster, and will perform such of the foregoing Assistant wardmaster.

duties as may be delegated to him by the officer in charge.

Compounder.

34. In hospitals where the employment of a Compounder is authorised, he will act under the wardmaster, and perform the duties laid down in paragraphs 25 to 32, together with such other duties as the officer in charge may allot to him. Where the employment of two compounders is authorised, the senior in rank is placed in charge of the surgery, and serjeants, corporals, and privates at the hospital, who are qualified compounders, are employed under him from time to time in turn as assistant compounders.

Non-commissioned officers employed in rotation as assistant compounder.

Orderly wardmaster.

35. In hospitals where an Orderly Wardmaster is detailed, the officer in charge will delegate to him such of the duties mentioned in paragraphs 1 to 24, as he may deem advisable, such orders being invariably given in writing for the guidance of non-commissioned officers so employed.

Clerk to officer in charge.

36. In hospitals where the employment of a Clerk is authorised, the officer in charge will delegate to him such clerical and other duties as he may deem advisable.

4. Additional duties in a Hospital in which there is no Quartermaster.

Responsibility for patients' kits.

37. Where no quartermaster is doing duty in the hospital, the wardmaster will keep the cheques for the patients' kits. (*See* paragraph 81.) When a patient is discharged from hospital he will return the cheque and will see that his kit is correctly re-issued to him. (*See* paragraph 87.) In the event of a patient's death he will not authorise the removal of the kit from the pack store without instructions from the officer in charge.

Charge of valuables handed over by patients.

38. He will receive and be responsible for the safe custody of all medals, money, or trinkets handed over by a patient or found in a patient's kit. He will at once give the patient a receipt for such articles and give a duplicate receipt to the officer in charge for transmission in accordance with Regulations for Army Medical Services, to the patient's commanding officer. On the patient's discharge from hospital he will return the valuables to the patient, who will hand back his receipt for the same. In the event of a patient's death he will not hand over these valuables to anyone without instructions from the officer in charge.

Monthly.

39. He will prepare the monthly Account of Hospital

WARDMASTERS' DUTIES—continued.

Stoppages (Army Form O 1643) for each corps by squadrons, batteries, or companies, according to instructions laid down in Regulations for Army Medical Services. account of hospital stoppages.

40. He will be responsible that the wards are properly ventilated, lighted, and warmed according to the orders of the officers. Warming, lighting, and ventilation of wards.

41. He will be responsible for the correct keeping of the Personal Charge Book (Army Book 51), and will prepare for the signature of the officer in charge, all charges against patients or others for damages and deficiencies immediately they are discovered, in order that the amounts chargeable may be recovered. (*See* paragraphs 21 and 74.) Personal charges against patients or attendants.

5. Duties in a Lunatic Hospital.

42. The wardmaster will be guided by the orders contained in paragraphs 18 to 51. General duties.

43. In the absence of an officer he is the only person authorised to seclude, when necessary, a violent or unruly patient, recording every such occurrence in the book kept for that purpose. When it is necessary to restrain by force a violent patient, sufficient assistance should first be obtained so that he may be at once overpowered, and irritation and perhaps injury thus prevented both to the patient and attendants. Authority to seclude violent patients.

44. In his general intercourse with the patients, his manner should be kind and conciliatory; he should be ready to soothe and encourage the timid, desponding, or melancholy, and to repress the audacious and refractory; but the harmless irregularities of patients should never be interfered with, nor any open resistance made to their errors or inclinations. To cultivate a conciliatory manner.

45. He should in his demeanour exhibit strict propriety of conduct and perfect self-control, remembering that insane patients are more likely to imitate example than follow instructions. The force of example.

46. He should endeavour to make himself thoroughly acquainted with the habits, dispositions, and conduct of all the patients, marking particularly the changes that may from time to time occur in their condition, faithfully reporting the same to his officer. He should cultivate an interest in those placed under his charge, and make every endeavour to promote their comfort. To acquire a knowledge of the patients.

Section III. Standing Orders for the

WARDMASTERS' DUTIES—continued.

Journal.

47. He will keep a journal of daily occurrences for the information of the officer in charge.

Detail and inspection of attendants.

48. He will, under instructions from the officer in charge, arrange the detail of duties, visit the hospital at uncertain hours, and assure himself that the attendants are at their respective posts, that the patients are properly cared for, and that the routine of the establishment is being carried out.

Night visit.

49. He will visit every part of the hospital after the patients retire to bed, satisfy himself that the instructions contained in paragraph 118 are carefully complied with, ascertain that everything is correct, and give his final instructions to the night watch. The following morning he will make a report to his officer.

To observe if a patient refuses food.

50. He will, at his visits during meals (*see* paragraph 8), particularly observe whether any patient refuses his food, and should this occur he will at once report the circumstance.

To frequently visit patients.

51. He will frequently visit the patients whether in the hospital, airing grounds, or outbuildings.

To see patients have baths.

52. He will be responsible that every patient, unless exempted by order of an officer, has a warm bath immediately after admission, and once a week afterwards.

To personally superintend bathing of patients.

53. He will superintend the bathing of all patients, will particularly notice any bruises, wounds, sores, or evidence of disease of any kind complained of by them, or noticed by the attendants, and will at once report the same to an officer. Should he or the attendants have the slightest doubt as to the advisability of bathing any patient, owing to sickness, feebleness, or excitement, reference will be made to an officer. He will regularly report the name of every patient not having the customary bath to the officer in charge of the case.

Preparation of baths.

54. He will see that in preparing a bath, the instructions contained in Section I., paragraph 143, are strictly adhered to. In case of the thermometer in use being out of order all bathing operations will be stopped pending reference to his officer for instructions.

Precautions to be taken during bathing.

55. He will see that not more than one patient is bathed in the same water; and under no circumstances are two patients to occupy a bath at the same time. During the time the bath is being used the room will never be left without an attendant; at all other times the door is to remain locked, and the key will be kept in the attendant's room. Under no pretence is the patient's

WARDMASTERS' DUTIES—continued.

head to be put under water. In the bath the body of each patient is to be well cleansed with soap: after coming out of the bath especial care must be taken to dry those patients who are feeble and helpless, and to clothe them as rapidly as possible.

Care of keys of bath taps.

56. He will be careful that the keys are never left on the bath taps, and that they are not used by patients. When not in use they are to be locked up.

Baths for cleanliness not remedial.

57. He will bear in mind that, except when specially ordered, baths are to be used solely for purposes of cleanliness and not as remedial agents. Neither the cold nor the shower bath is ever to be used, unless expressly ordered.

6. Delegation of certain duties in a Lunatic Hospital.

Assistant wardmaster.

58. In Lunatic Hospitals where the employment of an Assistant Wardmaster is authorised, he will act under the chief wardmaster, and perform such of the foregoing duties as may be delegated to him by the officer in charge, but he will not be allowed to seclude an unruly patient on his own authority.

II. NON-COMMISSIONED OFFICER EMPLOYED AS STEWARD.

1. General Duties.

Division of duties between quarter-master and steward.

59. Where a quartermaster is doing duty in a hospital the steward will, under him, perform such of the following duties as may be delegated to him by the officer in charge, but in a hospital in which there is no quartermaster they will all be performed by the steward.

Responsibility for buildings.

60. He will be responsible for the custody and care of the hospital buildings, out-offices, and enclosures, and will at once bring to the notice of the officer in charge any defect or damage he may at any time discover.

Equipment and stores.

61. He will be responsible for the furniture, equipment, bedding, and stores of all kinds received over from the Officer in charge of Barracks (as laid down in Regulations for Army Medical Services), except the personal equipment of patients, and the bedding and equip-

ment of occupied wards which he has handed over to the ward-master in accordance with paragraphs 16, 17, and 19. He may, if he so wish, make out a third copy of the Inventory on Army Book 126B for his own use.

Provision, wine, and malt liquor stores.

62. He will have charge of the provision, wine, and malt liquor stores of the hospital; will be responsible that they are kept well supplied with everything required for the sick, but that no undue accumulation takes place; that the supplies first received are all expended before any subsequent supplies are issued; that no loss takes place from neglect or carelessness on the part of the issuers employed in the store, and that the store and its appurtenances are kept clean and in good order; also that all weights and measures are correct.

Correctness of weights and measures.

Smoking prohibited.

63. He will not allow smoking in any of the stores under his charge.

Requisitions, receipts, and counterfoils for current supplies.

64. He will prepare and sign requisitions for current hospital supplies on the Officer in charge of Supplies or on contractors, and submit them for the counter-signature of the officer in charge. The steward's signature, with rank and appointment, will invariably be attached to requisitions, receipts, and counterfoils, the details on which must strictly agree with those on the requisitions.

Regulation for drawing diets and extras.

65. He will draw perishable articles of diet and extras daily. Articles not perishable will be drawn in quantities calculated to last a week or longer, according to circumstances.

Receipts on delivery of stores.

66. When supplies of any kind are delivered, he will sign on the back of the requisition in acknowledgment of their receipt. Without such acknowledgment the requisition will not be accepted as a voucher in support of the contractor's account.

Examination of supplies and report on inferior quality.

67. He will examine all articles of diet and extras on their receipt into store, and should he find anything deficient or not equal to contract sample, will at once report to the officer in charge. He will similarly report any inferior quality of provisions which may be brought to his notice by the cook. (See paragraph 136 (1).

Requisitions and return of fuel and light.

68. He will, according to the regulated scale, draw fuel and light from the Officer in Charge of Barracks on requisition (Army Book 30) for wards, offices, quarters, kitchens, and all purposes connected with the hospital. He will be responsible for their custody and issue, and will account for the same monthly on Army Form F 727.

Diet account and daily record of diets.

69. He will keep the Hospital Diet Account on Army Form F 735, in which the number and description of all

STEWARDS' DUTIES—continued.

diets and extras, and all supplies received and issued, will be carefully entered from day to day, to enable the state of the provision account to be inspected, and its correctness ascertained at any moment. This account will be retained and filed in the hospital as an office record.

Returns sent to officer in charge of supplies.

70. On the last day of each month, or more frequently if required, he will prepare the War Office copy of the Hospital Diet Account on Army Form F 736 and the Return of Hospital Stoppages (Army Form P 1941) for signature and transmission by the Officer in charge of the Hospital to the Officer in charge of Supplies.

Provision ticket.

71. He will prepare the Provision Ticket (Army Form I 1218) from the Diet Sheets (Army Form I 1202) sent to him by the wardmaster, and will pass it to the wardmaster with Army Form F 735. (*See* paragraph 15.)

Issues to cook and wardmaster.

72. He will issue daily to the cook all articles of diet and extras, except wines, spirits, and malt liquors, which he will issue to the wardmaster on receipt of the diet sheets. (*See* paragraphs 6 and 132.)

Cleaning articles.

73. He will, according to the regulated scale, draw soap, soda, and other articles required for cleaning purposes from the officer in charge of barracks, on requisition (Army Book 49), and will keep an account of all issues.

Inspection of bedding, clothing and personal equipment.

74. He will carefully inspect all articles of bedding, linen, clothing and patient's personal equipment brought for exchange. If any article be found injured or stained, apparently in consequence of neglect, he will at once draw the attention of the wardmaster and the person delivering the same to the fact, and will thereupon mark and lay it aside for the inspection of the officer in charge, with a view to the investigation of the case and assessment of the amount of damage. (*See* paragraph 41.)

Periodical exchanges, and washing of bedding, linen, &c.

75. He will prepare for signature of the officer in charge the lists (Army Book 200) for the necessary periodical exchanges of hospital bedding, linen, and clothing. He will see that these articles have been properly washed when they are received for issue, and will at once report any complaint on this matter to the officer in charge. It is calculated that the average number of articles thus supplied to be washed, is for each sick man (or for thirty diets issued) every month, from sixty to sixty-five; and to be repaired for the same period, from eight to ten. In the event of this estimate being exceeded, a certificate as to the necessity must be obtained from the officer in charge.

Estimate of number of articles to be washed.

Section III. Standing Orders for the

STEWARDS' DUTIES—continued.

Linen to be aired.

76. He will be careful that personal and bed linen is properly aired before it is issued to patients.

Account of bedding issued to wardmaster.

77. He will keep a bedding book, Army Book 54, in which all bedding issued to, or received from, the wardmaster will be accounted for. All transactions must be entered in this book, and signed, as they occur. (*See* paragraph 17.)

Attendance at inspection of buildings and equipment.

78. He will be present at all inspections of buildings and equipment by the Royal Engineers and Officer in charge of Barracks.

2. Instructions as to Diets and Extras.

Extracts from Allowance Regulations.

79. The following extract from the Allowance Regulations 1892 is reprinted for the information and guidance of the steward in issuing articles of diet and extras :—

Diets on ordinary service.

"46. Issues will be made to patients in accordance with the following scales, according to the diet upon which each patient may be placed :—

Article.	Class of Diet.						
	Convalescent.	Varied.	Roast.	Chicken.	Beef Tea.	Milk.	Tea.
Meat (beef or mutton) without bone... ... oz.	8	12	8 (steak)	half a fowl.	8 (beef)	...	...
Ditto, with bone ... ,,	10	15	10 (chop or joint)		10 (beef)	...	...
Bread ... ... ,,	16	18	18	16	14	12	12
Salt ... ... ,,	½	½	½	½	½	...	...
Tea ... ... ,,	¼	¼	¼	¼	¼	...	½
Sugar ... ... ,,	1½	1½	1½	1½	1½	1	2½
Milk ... ... ,,	6	6	6	6	6	3 pints	6
Butter ... ... ,,	1	1	1	1	1	...	...
Potatoes ... ... ,,	8	16	8	8	...	...	...
Vegetables ... ... ,,	4	4	4	...	...	...	...
Flour ... ... ,,	¼	...	...	...	...	...	...
Barley ... ... ,,	1½	...	...	...	...	...	...
Rice ... ... ,,	...	...	...	...	...	2	...
Pepper (every 100 diets) ,,	2	2	2	2	2	...	...
Mustard (every 20 beef diets) ... ... ,,	1	1	1	...	...	...	...

STEWARDS' DUTIES—continued.

"47. The following extras are authorised, and may be ordered when considered necessary for the treatment of the case :— Extras.

Extras.	Class of Diet upon which Admissible.
Butter. Bread. Eggs. Arrowroot. Milk. Sago. Tea. Oatmeal. Sugar. Rice } Pudding. Beef-tea. Sago } Pudding. Egg-flip. Custard } Pudding. And the customary fruits in season.	All diets, except varied.
Soda water. Lemonade, bottled. Calves' foot jelly.	May be given under very special circumstances, when approved by the Senior Medical Officer.
White fish, 8 ozs. Butter, 2 ozs.	Upon Convalescent, Beef-tea and Milk diets.
Potatoes, 8 ozs., or Vegetables, 4 ozs.	Upon Beef-tea diet when it is found necessary to keep a patient on this diet for any lengthened period, or where there is a tendency to scorbutic taint.
Wines* (sherry, port, tarragona, claret). Spirits* (brandy, whisky, gin). Malt liquors (porter, ale). Diet drinks { Barley water. Rice water. Gruel. Lemonade.	Upon all diets, including varied.
Other articles, in addition to above.	For Officers' diets, as considered necessary by Senior Medical Officer.

* "Milk, wines, and spirits are to be calculated at 20 ozs. the imperial pint.

"The reputed quart bottle should contain $5\frac{1}{3}$ gills, or $26\frac{2}{3}$ ozs.

"48. When any of the extras specified in paragraph 47 are ordered, they will be made and charged according to the following proportions :— Ingredients.

Barley-water.—Barley, 2 ozs. ; sugar, 2 ozs } For every 5 pints of each.
Rice-water.—Rice, 2 ozs. ; sugar, 2 ozs. } For every 5 pints of each.

Lemonade.—Two large lemons and $1\frac{1}{2}$ ozs. of sugar } To every 2 pints.
Gruel.—Oatmeal, 2 ozs. and $1\frac{1}{2}$ ozs. of sugar } To every 2 pints.

Rice pudding.—Rice, 2 ozs. ; milk, $\frac{3}{4}$ pint ; sugar, $\frac{1}{2}$ oz. ; egg, 1.

Sago pudding.—Sago, $1\frac{1}{2}$ ozs. ; milk, $\frac{2}{3}$ pint ; sugar, $\frac{1}{2}$ oz. ; egg, 1.

Section III. Standing Orders for the

STEWARDS' DUTIES—continued.

Custard pudding.—Milk, 1 pint; sugar, 1 oz.; eggs, 2. Cinnamon, ½ oz., may be issued for 15 puddings, or lemon to 12 puddings.
Oatmeal, 4 ozs.; with milk, 8 ozs.
Arrowroot, 2 ozs.; with sugar, 1 oz.
Sago, 2 ozs.; with sugar 1 oz.
Egg flip.—2 eggs with ½ oz. sugar.
Tea, per pint, ⅛ oz. tea; ¾ oz. sugar; 3 ozs. milk.
Beef tea per pint { 10⅔ ozs. meat without bone. / 13⅓ ozs. meat with bone. / ½ oz. extractum carnis. / 4 ozs. essence of beef.

Substitutes.

"49. The following rates will be allowed for substitutes:—

2 ozs. lime juice = 1 lemon.
3 ozs. rice, or / 3 „ flour, or / 8 „ bread } = 16 ozs. potatoes.
1 oz. preserved potatoes = 5 ozs. fresh potatoes.
1 oz. „ vegetables = 10 ozs. fresh vegetables.
½ oz. coffee = ⅙ oz. tea."

3. Duties in connection with the Pack Store.

Kits of patients on admission to be put in pack store.

80. He will, when patients are admitted, receive over the whole of their kits, with the exception of forage cap, one pair boots, pocket ledger, devotional books, razor, set of blacking brushes and tin of blacking, and enter a list of the articles in both the cheque and counterfoil of the Pack Store Cheque Book (Army Book 182). He will be careful to enter correctly each patient's name, regimental number, and corps, and will indicate the condition of the patient's uniform clothing and necessaries on the inventory by initial letters, thus:—

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Clothing.
25

N, for new. G, for good.
B, „ bad. W, „ worn.

Great care will be observed in registering the articles correctly, so that no dispute may arise on the discharge of a patient from hospital.

Cheque for kit to be handed to quarter-master or wardmaster.

81. He will, after completing the inventory of a kit, tear out the cheque, and hand the same—duly signed by himself, and endorsed by the patient (if able), or (if unable) by the ward orderly—to the quartermaster, if one

is attached to the hospital, otherwise to the wardmaster. (*See* paragraph 37.)

82. He will at once give over to the quartermaster, if one is doing duty in the hospital, otherwise to the wardmaster, medals, money, or other valuables handed over by a patient, or which he may find in his kit or clothing, noting in the Pack Store Cheque Book the property thus transferred. **Disposal of valuables belonging to patients.**

83. He will at once send to be washed the underclothing worn by a patient on admission, as also any soiled article which he may find in his kit. He will enter in a book kept for the purpose, a list of these articles, the corps number, and name of the patient to whom they belong, and the number of the pack in the Pack Store Cheque Book. The soiled articles belonging to each patient will be tied in separate bundles, to each of which a list of contents will be attached. The person to whom they are handed over for the purpose of being washed will initial the book, as an acknowledgment of having received the articles. On the bundles being sent back the clean clothes will be replaced in their respective packs. **Separation and washing of soiled linen.**

84. He will brush and clean the clothing belonging to the kits, which will then be carefully put up and arranged, not too closely, on the shelves of the pack store, each pack having attached to it the number of the page in the Pack Store Cheque Book in which the inventory is recorded. It is a convenient plan to fasten the strap of the haversack round each pack. **Arrangement of kits.**

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Clothing.
25

85. He will be responsible that the pack store is at all times dry and well aired, and that the clothing and necessaries are also frequently aired and kept free from moth and damp. Any damage arising from neglect of these precautions will be made good by him. **Pack Store to be aired.**

86. He will not allow access to the packs, nor deliver any articles to patients except under proper sanction. **Access to packs not allowed.**

87. He will, on the discharge of a patient, issue the kit from the pack store, on the production of the cheque (mentioned in paragraphs 37 and 81). The patient will endorse the counterfoil on taking over his kit. On the death of a patient, the kit will not be issued from the pack store except under orders which he will receive through the quartermaster, if one is doing duty in the hospital, otherwise, through the wardmaster. (*See* paragraph 37.) **Issu on discharg[e] or death of patient.**

STEWARDS' DUTIES—continued.

4. Delegation of Certain Duties.

Duties of Pack Store Keeper when specially authorised.

88. In hospitals where the employment of a non-commissioned officer as pack store keeper is specially authorised, he will act under the steward, and perform the duties laid down in paragraphs 80 to 87, together with such other duties as the officer in charge may allot to him. Under no circumstances will these duties be delegated to a private.

III. PRIVATES EMPLOYED AS WARD ORDERLIES.

1. General Duties.

Responsibility in regard to patients.

89. Ward orderlies will act under the immediate orders of the wardmaster, and will be responsible under him for the care, cleanliness, and nursing of the sick, and attention to their wants.

To assist nursing sisters.

90. They will, in hospitals where nursing sisters are employed, give ready and efficient assistance to them in all matters connected with the nursing of the sick.

Demeanour, personal cleanliness, and discipline.

91. They will carry out their duties in a quiet manner. They will observe the greatest personal cleanliness, and when performing nursing duties will be particularly careful that their hands and nails are kept perfectly clean by frequent washing and the use of the nail-brush. They will preserve good order in their wards, be punctual and exact in obeying the orders they receive, and in dealing with the sick, exercise patience, gentleness, and at the same time firmness.

Responsibility for ward equipment and bedding.

92. They will be responsible to the wardmaster for all ward equipment and bedding in the wards under their charge, the correctness of which they will attest by their signatures on assuming charge. (*See* paragraph 18.)

Personal equipment of patients seriously ill.

93. They will, when patients are too ill to look after their personal equipment, be responsible for the same, and endorse the counterfoil in Army Book 42. (*See* paragraph 20.)

Cleanliness of wards, &c.

94. They will (guided by the instructions contained in Section I paragraphs 184 to 195) keep the wards, passages, ablution and bath-rooms, water-closets, &c., placed under their charge, clean and in good order, sweeping and dry rubbing the passages and wards, and thoroughly cleaning the furniture and utensils every day, but they will not wash the floors of occupied wards except under orders from the officer in charge of the ward. They will be held responsible for any damage to drains which may occur owing to poultices, dressings, &c., being improperly thrown into slop-closets or water-closets.

Damage to drains.

WARD ORDERLIES' DUTIES—continued.

95. They will at once remove from their wards and exchange all soiled linen, bedding, and clothing, and will return to the surgery all empty medicine bottles and all medicines ordered to be discontinued. To remove soiled linen and empty medicine bottles.

96. They will rise at reveillé, clean and air the wards, and see that all urinals are emptied and cleaned; that every species of dirt is removed from the wards; and that the bedding is freely exposed to the air for at least one hour before the bed is remade. (*See* paragraphs 196 and 197.) Duties in the morning.

97. They will make themselves thoroughly acquainted with the Orders for Patients (Appendix I.), and will see that these orders, a copy of which (Army Form C, 345) is hung up in a conspicuous position in every ward, are understood and obeyed by the patients. Patients to obey rules.

98. They will see that every patient is supplied with a clean towel, shirt, and pair of socks twice a week, and with clean sheets once a week, or more frequently if necessary. The round towels, which are intended to be used only for drying table utensils, will be changed twice a week, or more frequently if necessary. Change of patients' linen and of towels.

99. They will bring the diets from the kitchen at the proper hours and distribute them to the patients according to the orders on the Diet Sheets, and will see that no patient gives any portion of his diet or extras to other patients. After every meal, all utensils which have been used will be washed and put in their proper places. Distribution of diets and cleaning of table utensils.

100. They will, in the event of a patient being seized with sudden illness, or his symptoms becoming alarming, immediately report the same to the wardmaster. To report sudden illness.

101. They will report immediately to the wardmaster any irregularity which may occur in the wards under their charge, and also all loss or damage to articles of hospital or personal equipment. To report irregularities and damage.

102. They will not permit smoking in any of the wards, passages, or rooms without the authority of their officer. Smoking prohibited.

103. They will perform such minor dressings as the officers may delegate to them, and when no nursing sisters are doing duty in the ward they will administer at the proper intervals the medicines ordered. Performance of minor dressings and administration of medicines.

104. They are, when posted in charge of a patient or patients and regularly relieved, "soldiers acting as sentinels," and are liable to punishment under Section 6 of the Army Act for sleeping or being drunk on their post, or leaving it before being relieved. Responsibility of special orderlies and night guard.

2. Duties in a Lunatic Hospital.

General duties.

105. Ward orderlies employed as lunatic attendants will be guided by the orders in paragraphs 89 to 104.

Lunatics not to ramble about.

106. They will not permit patients to enter their rooms for any purpose; the doors of these rooms will be invariably kept shut, and the observation windows properly fastened; no patient will be allowed in the kitchen, scullery, or store rooms, except on express authority.

Care of lunatics outside hospital.

107. They will allow no patient to go beyond the hospital precincts, except parties specially detailed, for which the attendants in charge will be responsible.

Demeanour towards lunatics.

108. They will abstain from handling the patients roughly or using harsh language to them, and studiously avoid doing anything likely to create excitement amongst them. Every consideration should be shown for harmless irregularities. A violent or noisy patient should not be interfered with except to prevent harm to himself or others, or damage to property. When interference is necessary, assistance should be obtained unless the attendant is perfectly satisfied that he is able to deal with the case himself.

Attention to clothing and cleanliness of lunatics.

109. They will see that the patients are properly clothed, and will encourage habits of cleanliness and tidiness amongst them. All articles of clothing are to be frequently examined by the attendants and changed when requisite.

No authority to seclude a patient.

110. The attendants have no authority to seclude a patient, but when he appears in such a state of excitement as to require seclusion they are to report the matter to the chief wardmaster.

To repress quarrels.

111. They will repress all quarrels among the patients and report to the chief wardmaster all accidents, quarrels, attempt at escape, or bodily or mental change in individuals that may have occurred during their period of duty.

Articles with which they may do hurt to be kept from lunatics.

112. They will take every precaution to prevent the patients becoming possessed of knives, or other weapons, pieces of cord, lucifer-matches, or any article likely to prove dangerous to themselves or others; and with this view razors or knives belonging to the attendants are not to be kept in their packs, but will be locked up in the cupboards of their respective rooms. They will also take

WARD ORDERLIES' DUTIES—continued.

care that brooms, utensils, &c., used in cleaning are put out of reach after the work is done.

Cutting hair and nails.

113. They will, as directed, cut the hair and nails of patients, being careful to permit only one patient to be present at a time, and not to allow the scissors or knives out of their own possession.

To examine fastenings of doors and windows.

114. They will daily examine the fastenings of windows and doors to see that they are secure, and have not been tampered with.

To shut doors.

115. They will, in passing to and from the hospital, be careful to properly close and secure all doors behind them to prevent the escape of the patients.

To hold no communication with persons outside as to any patient.

116. They will hold no communication with any persons outside respecting any of the patients, or convey any letters or messages to or from them ; all correspondence received is to be taken to the chief wardmaster for transmission.

To frequently visit bath-rooms and water-closets.

117. They will frequently visit the bath-rooms, water-closets, latrines, &c., which are often resorted to by suicidal patients, and those addicted to vicious practices.

Duties at patients' bed-time.

118. They will be present in their respective wards at bed-time, see that the patients are all present, that their clothing is neatly folded up and placed outside the wards ; that they have no matches, pieces of iron, cord, or other article with which they might do mischief or inflict injury on themselves or others in their possession, or secreted in their bedding.

To examine for bruises.

119. They will frequently examine the patients to ascertain if they suffer from bruises or injuries of any kind, and any such discovered will be at once reported.

Precautions against fire.

120. They will exercise extreme vigilance against fire. In the event of a gas bracket being pulled down, or any escape of gas occurring, the hole should, if possible, be at once plugged, and the gas turned off from the entire landing if necessary, but this should be done quietly to prevent alarm amongst the patients.

Extract from Lunacy Act, 1890 (53 Vict., c. 57).

121. The following extracts from an Act of Parliament are published for the guidance of all persons employed in attendance on lunatics :—

Ill-treatment.

"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 imprison-

ment, or to both fine and imprisonment at the discretion of the court, or be liable on summary conviction for every offence to a penalty not exceeding 20*l.* nor less than 2*l.*

Penalties for permitting escape and for rescue.

"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 20*l.* nor less than 2*l.*"

Duties of night-guard.

122. The attendants detailed for night-guard will take over charge from the time of the patients retiring to bed until they are relieved in the morning by the ordinary attendants, and during that time they will be responsible for the care of the patients, and especially bear in mind that as soon as they have been posted they are sentries. (*See* paragraph 104.)

Ditto.

123. The night-guard will visit every ward at least each hour during the night, or oftener when necessary; paying particular attention to the sick, and to those special cases which may require extra watching, and to which their attention may have been directed by the chief wardmaster. These visits should be quietly made, to avoid, as far as possible, disturbing the patients.

Ditto.

124. Should anything of a special nature occur during the night, the matter will be at once reported to the chief wardmaster.

Ditto.

125. The names of patients noisy, talking much to themselves, frequently out of bed, &c., will be noted, and the circumstances reported to the chief wardmaster for the information of the officer in charge; and whether anything of a special nature has occurred during the night or not, the attendants will make a report to the chief wardmaster the following morning.

IV. NON-COMMISSIONED OFFICER OR PRIVATE EMPLOYED AS COOK.

1. General Duties.

Cleanliness and tidiness of kitchen.

126. The cook will be responsible that the kitchen is always clean and tidy, that everything is in its right place, that the tables are scrubbed with soap and water daily, the

Cooks' Duties—continued.

floor washed frequently, and the chopping-block scraped, the ranges kept clean and in good order, and, if required, a sufficient supply of hot water is kept ready for bath and other purposes.

Cooking vessels to be kept clean and carefully wiped.

127. Before leaving the kitchen for the day he will be careful that every pot, saucepan, or other cooking vessel in his charge is emptied, thoroughly cleaned, and carefully wiped, as damp will soon rust tin vessels, and vegetables, if kept in a metal saucepan, will turn sour and corrode the metal.

Care to be taken to prevent burning of saucepans.

128. He will not allow saucepans, stewpans, or other cooking vessels to remain on the fire without a sufficient quantity of water or other liquid in them to prevent burning. When a pan is injured in this way it becomes quite unfit for cooking purposes. A *bain-marie*, or hot-water pan, is to be placed on the hot plate or hob of the stove, or over gas, filled with water, into which will be placed the block-tin saucepans: these saucepans must never be placed by themselves directly on the fire or gas; the hot-water pan, after the work of the day is over, must be emptied and dried.

Copper boilers to be retinned.

129. He will at once report when copper boilers require re-tinning, as they are then very hurtful and even poisonous for cooking purposes.

Protection of glazed ironware from acid.

130. He will not leave anything acid, or liable to turn sour, such as vegetables, in vessels of glazed ironware, as the glazing being of a metallic nature may mix with and injure such food.

Strainers.

131. He will use a different strainer for beef-tea, and all greasy liquids from that used for lemonade, barley-water, and similar drinks. For the former, wire strainers may be used, but not for the latter.

Cook to satisfy himself he gets full weight.

132. He will attend at the provision store to receive from the steward the articles required for the preparation of the diets and extras prescribed, as shown by the Provision Ticket (Army Form I, 1218). These articles will be weighed in his presence so that he may satisfy himself that the proper quantities are issued. These quantities will be entered on the slate furnished to him for that purpose. (*See* paragraphs 15 and 72.)

Diet tables to be the guide as to quantities.

133. In preparing diets or drinks, he will be guided as to the quantities of the ingredients by the Diet Table (Army Form I, 1203), a copy of which, in accordance with Regulations for Army Medical Services, is hung up in every ward and kitchen; as well as by the instructions to the steward in paragraph 79. In apportioning the

the quantities he will invariably use weights and measures.

Meals to be served hot.

134. He will be particularly careful that the meals are sent to the wards hot; for however well in other respects the cook may succeed in his task, if the diets are received by patients in a cold or lukewarm condition, much of the benefit of good cookery will be lost.

Management of fuel and ranges.

135. He will exercise great care in the management of the stove or fireplace, so as not to exceed the allowance of coals. Except when specially ordered, the fires will be extinguished every evening at 9 P.M. The old open grate is now mostly replaced by either a kitchen range with oven and boiler, or a Flavell's kitchener, or a Captain Marsh's range. Those with the oven and boiler, which are generally of the B.O. or W.D. pattern, require the back part of the grate to be kept free from dust or soot in order that the oven may be properly heated. Flavell's kitchener also requires the flues to be kept clean, without which no oven will bake well; this, as well as all close fireplaces, stoves, and boilers, should have the ashpit made to hold water, so that the cinders may drop into the water and thus keep the bars from burning out; it also adds to the heat of the fire. Captain Marsh's stove, when fitted with hot-water cistern for baths, must never be left without water. When a fire is lighted in the hot-water grate, a warm bath may be had within 30 minutes, if the flues are kept clean.

2. Instructions.

Instructions for cook.

136. The cook will be further guided by the following instructions:—

To report inferior quality of provisions to the steward.

(1) As very great difference exists in the quality of beef, mutton, fowl, and fish, it is essential that he should be able to form a correct opinion as to the quality of these articles, and at once, when the quality is inferior, report the same to the steward. (*See* paragraph 67.)

Quality of mutton.

(2) The mutton for broth should be, if possible, four years old; 30 per cent. more of two-year-old mutton is required to make the same quantity and quality of broth as four-year-old. Ram mutton, if lean, can be used. As mutton differs in quality and flavour in almost every county of the United Kingdom, it is impossible to describe that which distinguishes the best in each variety, but fine white fat, flesh close grained and of a bright red colour, the inside of the leg well formed and plump, indicates good mutton.

Cooks' Duties—continued.

(3) In carving a leg of mutton, hold the knuckle or shank-bone in the left hand, the inside of the leg turned upwards. The first slice should be cut slantways, close to the knuckle; and continue cutting in slices down to the thigh bone, passing the knife round it. The fat from the broad end should be cut away in the first instance, and distributed as required. Carving a leg of mutton.

(4) In a shoulder of mutton, the meat, before being cut up into diet portions, should be removed from the bone in the following way:—Cut the meat off in one piece from the under part of the bladebone by running the knife close to the bone; then turn it over, and cut down on each side of the ridge bone; then run the knife up under the meat close to the bladebone, there will only remain a few pieces round the shank-bone, which should be cut up and distributed among the diet portions. The meat should be cut in slices across the grain. Carving a shoulder of mutton.

(5) If a neck of mutton is roasted, it should be trimmed, and a great part of the fat removed. The *scrag end* should be boned, rolled, and tied round, the bones being put into the soup. For broth, the neck of mutton should be divided into chops; for Convalescent Diet, they should be skewered and tied up, and boiled in the broth. Neck of mutton.

(6) Four-year-old beef is the best for hospital use. Ox beef will make the highest flavoured beef-tea. Younger meat may be more tender, and make apparently stronger soup, but, like veal broth, it is merely more gelatinous. The lean of ox beef is of a bright red colour, cow beef of a pale red; a very dark beef indicates bull beef, which requires longer cooking. The colour of the fat, if yellow, indicates that the animal has been fed upon oil-cake, the meat of which is not so good for hospital use as that of cattle fed on roots or pasture. Quality of beef.

(7) In small hospitals the parts sent for roasting are generally the middle and chuck ribs (the middle has four, and the chuck three, ribs), or part of them. In this description of joint, the bones should be cut out, broken, and placed in the soup, and the meat then rolled, skewered and tied with a strong string. If baked, the meat should have a piece of greased paper placed over it. In carving for distribution the meat should be cut in slices; if, however, the joint is roasted with the bone, the meat should be removed in one piece from the bone, by inserting the knife under it, close to the bone; the bones should be used for soup. Roast and baked beef.

(8) When the buttock and mouse buttock is supplied Buttock and

mouse buttock. for roasting, the meat should be cut when raw from the bone and then cut across in pieces two inches thick. The French make a hole in the meat half an inch square, with a skewer, and fill it with fat. The pieces should then be cooked very slowly, and carved for distribution in slices of half an inch thick across the grain. The same plan should be adopted when the meat is stewed or boiled in soup.

Chops and steaks. (9) When chops or steaks cannot be broiled in frying-pans they should be cooked in a very hot oven. With frying-pans the following mode should be adopted : Place the frying-pan on the fire, clean it well, rub some salt on it to make it quite dry and clean ; then put the chop or steak in the pan inclining one side of it downwards, so that none of the melted fat touches the meat ; turn it often to retain the gravy in it. Chops should always be trimmed before they are cooked.

Roast and baked fowl. (10) A fowl to produce 1 lb. of meat (or two diets) should weigh not less than 1¼ lb. ; it should be roasted whole, and afterwards divided. But if one portion of a fowl is required, it should be cut from the raw fowl, covered with paper, and either baked or roasted. In baking fowls the oven must be made much hotter than for meat. If a fowl has been once cooked, to make it hot again it should be placed on a plate in a basin, with very little water under the plate ; it should then be covered over with another plate, placed in the oven, and kept there for 20 minutes.

Chicken soup or broth. (11) In cooking old fowls for chicken soup or broth, place bones and all, with very little water, in a wide-mouthed bottle, and then put in a stewpan of boiling water. After boiling for two hours, strain off, and serve ; the broth being diluted if deemed too strong ; chickens only, should, if possible, be used for chicken broth.

Filleted fish. (12) Fish should, if possible, be filleted from the bone ; a plain sauce may be made of the skins, bones, and cuttings, boiled in a little water, with a sprig of parsley and salt, and strained. A sole is filleted by removing both skins, cutting off the head, making a cut down on each side of the backbone, and inserting the knife under the flesh close to the bone. Each sole will make four fillets, which should be placed in a baking dish, slightly greased, with a piece of paper over it, and kept in the oven from 10 to 15 minutes. Small haddocks and large whiting are best filleted and done as soles.

Boiled fish. (13) When cod, haddock, ling, &c., are to be boiled,

Cooks' Duties—continued.

they should be cut in slices when raw, and each slice rolled and tied round with string, to be removed when the fish is dished up.

Fried fish.

(14) Fish to be broiled should, in the first place, be thoroughly dried; the frying-pan should then be made ready with the bottom well covered with fat, not too hot, which may be ascertained by throwing in a few bread-crumbs or a drop of water; immerse the fish in it and cook gently; when taken out it should be placed on a clean napkin.

Difference in qualities of flour and rice.

(15) The cook should be fully acquainted with the different qualities of flour, arrowroot, rice, &c. For instance: some samples of flour will never thicken soup; and to ascertain whether it is suitable for that purpose, a teaspoonful should be tried to see whether it can be made into tough paste. Rice also varies much; it is not always the finest and whitest that is the most nourishing or makes the best puddings; the common Bengal cargo rice in these respects is generally superior even to the best Carolina.

Potatoes.

(16) Potatoes in damp weather, or those grown in a damp locality, are better steamed or baked in their skins; they are liable to fall to pieces if boiled.

Milk and rice milk.

(17) Milk, rice-milk, &c., are best boiled in one sauce-pan within another, as in the *bain-marie;* milk, &c., should also always be kept hot in this way.

Soup on convalescent diet.

(18) The meat on Convalescent Diet is to be boiled with the vegetables, barley, and flour, so as to allow to each patient the quantity of soup specified in the diet table.

Vegetables in diets with no soup.

(19) In the diets, where no soup is given, the vegetables are to be cooked in bulk, and served up to each patient in the proportion specified.

Cooking preserved provisions.

(20) In cooking preserved provisions, such as essence of beef, mutton broth, boiled chicken, mutton and beef, they are as a rule too much done. In most cases it is necessary only to remove the lid of the tin, and to place it in a stew-pan of boiling water; the pan should be kept on the fire, or in the oven, until the contents are warmed through; the fat on the top then removed, and the food served. The contents may also be emptied out of the tin into a stewpan, with a little water, and warmed; then seasoned or flavoured according to taste or direction; and the broth strained from the meat and served; the meat will make an excellent panada. Essence of beef added to this broth makes it stronger. Preserved vegetables, as carrots, parsnips, onions, potatoes, &c., as well as dried parsley

and other herbs, can all be introduced into these broths or soups, at discretion.

Stews made of tinned beef or mutton.

(21) For stews, the tins of beef and mutton (fresh or corned) may be used in any form; an Irish stew may be made either with fresh or preserved onions and potatoes; if fresh, the onions should be sliced thin, placed in a stew-pan with a little fat, and allowed to get warm through, not browned; then add the potatoes with a very little water; when the potatoes are nearly done, add the seasoning, and empty the contents of the tin carefully on the top; when the potatoes are done, the meat will be sufficiently warmed through, and may then be served.

Tinned soup.

(22) Soup and bouilli in tins will always admit of more water being added, and if raw vegetables are added they should be first boiled and mixed with the contents of the tin, five minutes before serving.

Salt beef or pork.

(23) Salt beef or pork should be soaked for at least thirty-six hours in water, changing the water three or four times. When being cooked, the water should also be changed the moment it begins to boil, and cold water added; in this way, salted meat may be used almost like fresh; but in making soup from salted meat a large amount of vegetables should be added. Salt beef will also make an excellent panada, adding herbs and spice, and weight for weight of bread and eggs; then formed into balls and baked; it may also be served plain, or with any kind of sauce; or it may be put into pudding paste and made into dumplings. In stewing salt meat a little sugar should always be added, and in frying, a little vinegar, or lime juice, or sour wine.

Frozen provisions.

(24) Frozen meat or vegetables should be placed in cold water in a warm room until thawed. Bread should be treated in the same way, and then dried or re-baked, which makes it taste like new bread.

Maize porridge.

(25) When porridge of Indian meal or maize flour is ordered the meal or flour should first be soaked in cold water in a cold place for twelve hours, and whatever floats on the top removed; it should then be boiled slowly for five or six hours.

II. RULES REGARDING COMPOUNDERS OF MEDICINES AND THE GRADING OF ORDERLIES AND COOKS.

1. Compounders of Medicines.

Training and examination of compounders.

137. No non-commissioned officer or private is eligible for training (*see* Section I., paragraph 223) or examination as a compounder of medicines unless he has qualified in accordance with paragraph 144.

2. Grading of Privates as 1st, 2nd, and 3rd Class Orderlies.

Advancement and reduction.

138. Privates of the Corps are graded as 1st, 2nd, and 3rd Class Orderlies, according to length of service, conduct, ability, and efficiency. They will, according to qualifications displayed, be advanced from one class to another by the Principal Medical Officer of the district or command, on the recommendation of the officer under whom they are serving; and will, for misconduct, negligence, or inefficiency, be liable to summary reduction from a higher to a lower class by their commanding officer, subject to confirmation by the Principal Medical Officer. (*See* paragraph 140.)

Grounds of advancement.

139. As the chief duty of privates is the direct personal attendance on and care of the sick, their advancement will mainly depend upon their efficiency as nursing attendants, their ability in preparing and administering food and extras in serious cases, and their general attention to ward duties; together with which qualifications their general good conduct and length of service will be duly considered.

3. Grading of non-commissioned officers and men as Cooks.

Instruction in cooking and grading as cooks.

140. Classes for instruction in cooking are established in certain hospitals at home, and a non-commissioned officer or man who has attended a class will, according to the knowledge and ability he displays, on examination be registered at Head Quarters as

(*a*) Superintending Cook in a Military Hospital,
(*b*) Cook in a Military Hospital.

RULES AS TO GRADING OF COOKS—continued.

A Superintending Cook is one who is able to impart instruction to others, and when two or more cooks of equal rank are employed in a kitchen, the Superintending Cook will invariably be placed in charge. A private who has qualified either as a Superintending Cook in a Military Hospital, or as a Cook in a Military Hospital, and who is of good character, will, if actually employed as a cook and found efficient, be graded as 1st class orderly, on a vacancy occurring in that grade, subject to his continued good behaviour and efficiency. (See paragraph 138.)

III. RULES REGARDING PROMOTION.

1. General Rules.

Seniority alone gives no claim.

141. Promotion is given by selection from those who are eligible, and seniority alone gives a non-commissioned officer or man no claim to promotion. Should a soldier be found inefficient or negligent in the discharge of his duty he can never expect advancement.

Special promotion.

142. The following are the rules governing promotion to the various ranks, but in exceptional circumstances the rules regarding the examination tests may be departed from in the case of non-commissioned officers or men who specially distinguish themselves, or who display exceptional proficiency as cooks, clerks, or drill instructors, provided no promotion is given above the rank of serjeant.

2. Appointment as Lance Corporal and Promotion to the rank of Corporal.

All first-class orderlies not suitable for non-commissioned rank.

143. The position of a private as a first-class orderly, of itself, gives him no claim to promotion to the rank of a non-commissioned officer, as there are many excellent nurses and cooks who are quite unsuited for such rank. The circumstance of a man being a first-class orderly will, however, be an additional reason for his advancement, if otherwise eligible.

Qualifications required for promotion to corporal or appointment as

144. A private of any grade is not eligible for appointment as lance corporal or promotion to corporal's rank unless—

(*a*) He has been at least 12 months clear of an entry in the regimental, and six months clear of an

RULES AS TO PROMOTION—continued.

entry in the company defaulter book, and at least two years have elapsed from date of conviction, or expiration of sentence awarded by court-martial. lance-corporal.

(*b*) He is in possession of a second-class certificate of education.

(*c*) He has satisfactorily passed through a class of instruction in the training school of the corps.

(*d*) He is certified by an officer to have been practically tested and found qualified to give instruction in Stretcher Drill and Infantry Squad Drill.

(*e*) He has passed a satisfactory written and oral examination on the following subjects :—

*(1) Discipline, duties in barracks, guards and picquets, and duties in camp and on the march, as laid down for lance corporals of infantry, in Sect. IX., Sub-section IX., Queen's Regulations.

(2) The duties of ward orderlies, as laid down in Standing Orders.

(3) The mode of carrying wounded men off the field, especially with reference to the nature and position of their injuries.

(4) The preparation and application of fomentations, poultices, and the mode of applying plasters, blisters, leeches, injections, liniments, &c.

(5) The nursing of helpless patients as laid down in Section I., paragraphs 201 to 209.

(6) The names and appearance of the surgical instruments and appliances in general use.

(7) The immediate treatment of cases of emergency as laid down in Section I., paragraphs 154–183.

(8) The practical use of the clinical, bath and ward thermometers.

(9) The method of regulating the ventilation of wards, and the object of such ventilation.

(10) The observation of the sick as laid down in Section I., paragraphs 210 to 222, with a view of testing his ability to give an intelligible account of a patient's condition between the officer's visits.

(11) The preparation of the various diet drinks used in military hospitals.

* Examination in this subject will not be compulsory until after 31st July, 1893.

RULES AS TO PROMOTION—continued.

3. Promotion above the Rank of Corporal.

Eligibility for promotion.

145. A non-commissioned officer of any rank to be eligible for further advancement must have been at least two years clear of an entry in the court-martial and six months clear of an entry in the company defaulter book.

4. Promotion to the Rank of Serjeant.

Qualifications required for promotion to serjeant and appointment as lance-serjeant.

146. A corporal is not eligible for further promotion unless—

(*a*) He is a compounder of medicines.

*(*b*) He has passed a satisfactory examination on the following subjects :—

(1) Squad drill and the rudiments of company drill.

(2) Ambulance wagon and hand seat drill.

(3) Discipline, duties in barracks, guards and picquets, and duties in camp, and on the march, as laid down for corporals of infantry in Section IX., Sub-section IX., Queen's Regulations.

(4) Duties of wardmasters and stewards as laid down in Standing Orders.

The examination in subjects (1) and (2) will be written and practical, that in (3) and (4) will be written and oral.

5. Promotion to the Rank of Second-Class Staff-Serjeant.

Qualifications for promotion to second class staff-serjeant.

147. Promotions from the rank of serjeant to that of second-class staff-serjeant are given by selection, on account of ability and merit.

6. Promotion to the Rank of First-Class Staff-Serjeant.

Qualifications for promotion to first class staff serjeant.

148. Promotions from the rank of second-class staff-serjeant to that of first-class staff-serjeant are given by selection on account of ability and merit. A second-class staff-serjeant promoted to that rank after 1st January, 1889, is not eligible for selection unless—

(*a*) He is in possession of a first-class certificate of education.

(*b*) He is certified to have a competent knowledge of pay duties.

†(*c*) He has passed a satisfactory examination in the following subjects :—

* This examination will not be compulsory until after 31st July, 1893.

† This examination will not be compulsory in the case of Second Class Staff Serjeants promoted to that rank previous to the issue of these Regulations.

RULES AS TO PROMOTION—continued.

(1) Corps drill and exercises.
(2) The duties of warrant officers and non-commissioned officers in general, station and field hospitals, and in bearer companies.
(3) Regulations bearing on the clothing and equipment of the corps.
(4) Regulations, contained in the Royal Pay Warrant and Financial Instructions, bearing on the payment of the corps.
(5) The mode of recording soldiers' services and the preparation of transfer and discharge documents, as laid down in Sections XIX. and XXII., Queen's Regulations.

The examination in subject (1) will be written and practical, that in the remaining subjects will be written and oral.

7. Promotion to the Rank of Warrant Officer.

Qualifications for promotion to rank of serjeant-major.

149. Promotions from the rank of first-class staff-serjeant to that of serjeant-major are given by selection on account of ability and merit. First-class staff-serjeants who were promoted to that rank without having passed the examination laid down in para. 148 will be required to pass a satisfactory examination in the following subjects:—

(1) The duties of warrant officers and non-commissioned officers in general, station and field hospitals, and in bearer companies.
(2) Company drill (written and practical).
(3) Corps drill (written and practical).
(4) Clothing and equipment of the corps.
(5) Payment of the corps.
(6) Duties in connection with general medical stores and the charge of medicines and instruments.

8. Promotion to the Rank of Quartermaster Army Medical Staff.

Selection from warrant officers.

150. In accordance with Article 338 of the Royal Warrant for pay and promotion, all promotions to the rank of quartermaster Army Medical Staff are made by selection from the warrant officers of the corps.

APPENDICES.

I. Orders for patients in military hospitals.

II. List of articles of personal equipment supplied to each patient in hospital.

III. Orders for non-commissioned officers and men employed on special duties at the Depôt.

IV. Rules for the guidance of young soldiers of the Medical Staff Corps.

V. Method of arranging bed, bedding, &c., in a barrack room.

VI. Method of laying out kit in a barrack room.

VII. Method of showing field kit.

VIII. Marching order.—Front view.

IX. Marching order.—Rear view.

X. Medical Staff bugle calls.

APPENDIX I.

Orders for Patients in Military Hospitals.

(Referred to in Standing Orders 1 and 97 and published separately as Army Form C, 345.)

I. Patients on admission will, if able, accompany the ward-master to the store and draw their personal hospital equipment. They will sign the ward-master's cheque-book for the same and be responsible, while in hospital, for any deficiencies or damage to the equipment. If too ill to do this, the patient's personal equipment will be drawn by the ward orderly, who will be responsible for the same.

II. Patients on admission will also, if able, hand to the pack store keeper all money or other valuables in their possession and the whole of their regimental kit, with the exception of forage cap, pair of boots, pocket ledger, devotional books, razor, set of blacking brushes and tin of blacking. They will sign the cheques taken from the pack store book certifying to the correctness of the list of articles given in, and they will receive from the quartermaster or wardmaster a receipt for their money and valuables. If too ill to do this the patient's kit will be handed into the pack store and the pack store book cheque signed by the ward orderly.

III. Patients will obey the instructions of the ward-master and the ward orderly, and if they consider they have any cause of complaint will report to the officer in charge of the ward.

IV.—Patients marked "up" and "up, bed down" will rise at the appointed hour, shave, wash and dress before breakfast.

Patients marked "up from to " will get up only for the period named and those marked "bed" will remain in bed. Patients will understand that entries marked on their diet sheets on this subject, are orders to be strictly obeyed.

V. Patients marked "up" and "up, bed down" will be responsible for the tidiness of their beds and bedside tables and will carefully fold up and put away their clothes before going to bed. Those marked "up" will assist the ward orderly in cleaning the ward, lavatory &c., and in any other duty for which they may be detailed by the wardmaster.

VI. Patients will not smoke in any part of the hospital buildings except where specially allowed, and under no circumstances is smoking before breakfast permitted.

VII. Patients will be responsible for any damage they may do to library books.

VIII. Patients will not leave their wards before the termination of the morning visit.

IX. Patients will be in bed at 9 p.m. in winter and 10 p.m. in summer, and will not carry on any conversation after these hours, neither will they leave their beds, nor turn up the gas, except for unavoidable causes.

X. Patients will wear slippers in the hospital buildings and boots if going into the grounds, and will wear gowns as ordered.

XI. Patients will make as little noise as possible while in hospital, so that they may not disturb or annoy their sick comrades.

XII. Patients will give the ward orderly the names of any friends or relations for whom they may wish passes to visit them in hospital.

XIII. Patients will inform the ward orderly if they desire requisitions made out for tobacco, stationery &c., or the stamping of letters, for transmission to their regiment or corps.

XIV. Patients will not have in their possession while in hospital any money or valuables, nor will they, without the permission of the officer in charge of the ward, receive any articles of food or drink brought or sent to hospital.

XV. Patients will under no circumstances give any portion of their diet or extras to other patients, as each patient is ordered the diet most suitable for his disease.

XVI. Patients will, on being discharged from hospital, obtain from the ward-master the counterfoil from the Pack Store Cheque Book, containing the list of their kit, which they will draw from the Pack Store, and their money or other valuables will be returned to them by the quartermaster or ward-master. They will then hand into store their personal hospital equipment.

XVII. Patients who are non-commissioned officers will assist the ward orderlies in maintaining good order and discipline. In the absence of the ward orderlies they will be held responsible for any irregularities. They will, if up, wear their chevrons, and if confined to bed their chevrons will be hung over their bed-head boards.

APPENDIX II.

List of Articles of Personal Equipment Supplied to Each Patient in Hospital, Referred to in Standing Orders 16, 19, 20, 61, 93, 98, and 101, and in Appendix I., Paragraphs 1 and 16.

Basin, soup.
Brush, hair.
Comb, dressing.
Crock, earthenware, bread.
Fork, dinner.
Knife, „
Mug, drinking.
Plate, dinner, earthenware.
Pot, butter.
„ chamber, earthen.
Spoon, table.
Towel, hand.
Case, slip pillow, large.
Sheets, cotton, pair of.
Cap, day.
Drawers, cotton (only when necessary).
Drawers, flannel (only when necessary).
Gown, blue serge.
Neckerchief.
Pockethandkerchief.
Shirt, cotton.
„ flannel, (only when necessary).
Slippers, pair of.
Socks „
Trowsers, blue serge, pair of.
Waistcoat „

In addition when ordered by the Medical Officer.

Basin, sores, earthen.
Comb, small-tooth.
Cup, spitting, earthen.
Pan, bed, earthen.
Urinal, earthen.

NOTE.—This list is extracted from Schedule No. 1 of the Revised Schedules of Hospital Equipment issued with Army Order 292 of 1889.

APPENDIX III.

Orders for the Non-Commissioned Officers and Men Employed on Special Duties at the Depot.

(Subject to alteration under local orders.)

Orders for the Barrack Orderly Serjeant.

1. He will see that the barrack windows are opened immediately after reveille, and ascertain that the urine tubs are filled with clean water, chained, and in their proper place.

2. He will take over the orderly men from the orderly serjeants on the parade ground, at the prescribed hours, and march them to the provision stores for rations, and remain there till the rations are issued. He will similarly march the men of the old guard to the canteen for groceries. He will march the orderly men from the ration-stand to the cook-house and will not allow the meat to be taken into the barrack-room.

3. He will take over from the orderly serjeants, and march the orderly men detailed to carry meals to the guard, prisoners and sick.

4. He will report himself to the Orderly Officer and accompany him during his tour of duty. On occasions, when the Orderly Officer does not go round during meals, the barrack orderly serjeant will visit the huts to ascertain whether there are any complaints.

5. He will attend at the orderly room at the office hour.

6. He will attend at the Cambridge Hospital for sick reports at 12 noon, and after taking them to the Staff-Serjeants to be initialed, leave them in the orderly room He will also go to the Cambridge Hospital at 5 p.m., to receive men discharged from hospital and hand them over to the orderly serjeant of their company.

7. He will, after taking his own meals, relieve the non-commissioned officer on canteen duty to allow him to go to his.

8. He will parade men for school and hand them over to the schoolmaster at the Garrison School.

9. He will show orders to the Commanding Officer Instructor, and Quartermaster, and report at tattoo that he has done so.

10. He will see that all fires and lights are extinguished in barrack-rooms and married quarters at "lights out" (except those for which special permission is given) and report the same to the Orderly Officer.

11. He will visit the cook-house, wash-houses and ablution-room, after the men's teas and before 6 p.m., and will see that the taps are properly closed.

12. He will furnish a report at the termination of his tour of duty in the following terms :—

1. I certify that the barrack windows were opened immediately after reveille.
2. I inspected the urine tubs in number at a.m. and found them in the place allotted for them, filled with clean water, chained and locked.
3. I paraded the orderly non-commissioned officers and men of companies, on the parade ground, at a.m. and marched the orderly men to the stores, and I was present while rations were issued. I also marched the orderly men to the canteen to receive groceries.
4. I marched the orderly men carrying the meals of the guard, prisoners and sick.
5. I reported myself to the Orderly Officer and accompanied him during his tour of duty.
6. I attended the orderly room at the office hour.
7. I attended at the Cambridge Hospital for sick reports at 12 noon, and at 5 p.m. took over the men discharged from hospital and handed them over to the orderly serjeants of companies.
8. I paraded the men for school and handed them over to the Schoolmaster.
9. I showed orders to the Commanding Officer, Instructor, and Quartermaster.
10. I saw that the fires and lights were extinguished in the barrack-rooms and married quarters at 10.15 p.m. (except those allowed by the Commanding Officer) and reported the same to the Orderly Officer.
11. I have further to report

(Signature).
(Rank).

(Date).

Appendix III.

Orders for the Orderly Serjeant of — Company.

1. He will see that the men rise and go to bed at the prescribed hours and, if weather permit, that the cots and bedding are put out to air on Saturday mornings.

2. He will see the urine tubs removed at reveille, emptied, filled with clean water and locked up in the place allotted for them, and at retreat, will parade the orderly men, who will unlock them and empty the water into the urinal.

3. He will ascertain at reveille what men wish to report sick and will make out the usual reports (on Army Form B 256) in duplicate, and hand them over to the non-commissioned officer marching sick.

4. He will make out daily a report of casualties, and prepare a medical inspection report (Army Form B 256) for men joining.

5. He will visit the guard room at reveille and occasionally during the day, to ascertain from the commander of the guard what men are in confinement and the hour of return of absentees.

6. He will parade orderly men at the prescribed hours for rations, and with the meals of the guard, prisoners and sick, and hand them over to the barrack orderly serjeant.

7. He will see that the prisoners get their cleaning bags and great coats, and men remanded for trial or who are over 48 hours in the guard room, their bedding, at the proper hours and see that they are taken away again.

8. He will attend at the orderly room daily while prisoners are being dealt with and will be responsible that the witnesses are present.

9. He will warn all non-commissioned officers and men for their various duties and inspect them before handing them over to the Serjeant-Major. When warning a man for duty he will call him to the front, be sure of his identity, and be careful to give him his orders distinctly and satisfy himself that they are understood.

10. He will see that each man gets a mark on the daily duty roster for guards and piquets performed.

11. He will daily take over from the Serjeant-Major, the detail of duties which concern his company.

12. He will attend all parades and note down the names of any men of his company who are checked, at the same time warning them to attend company office the next morning.

13. He will collect the tattoo reports of huts and see that the roll is called by the senior soldier present in each.

He will attend the Staff Parade and hand over the reports to the Serjeant-Major.

14. He will attend at the orderly room when "orders" are sounded, and after he has copied them, show them to the Staff-Serjeant and Company Officers.

15. He will furnish a return of men on pass to the commander of the guard by tattoo.

16. He will hand over to the non-commissioned officer relieving him a list of defaulters and men undergoing punishment.

17. He will at all times, except in his hut, wear side arms.

18. He will attend company office daily.

19. He will render daily by 7 a.m. to the bread and meat stores, a copy of the company's sick reports with the number of each man's hut entered in the column of remarks.

20. He will see that all recruits joining have a bath before medical inspection.

21. He will hand over to the non-commissioned officer of each hut a list of the pioneers for the following morning: these he will parade at the hour detailed and hand over to the pioneer corporal.

Orders for the Non-Commissioned Officer on Canteen Duty and Marching Sick to Hospital.

1. The canteen is open for the sale of groceries from 6.30 a.m. till 7.45 a.m. and from 9 a.m. till 12 noon, and for the sale of liquor also, from 12 noon till first post.

The canteen is open on Sunday from 12.30 p.m. if Divine Service is over, till first post, except from 2.30 till 6 p.m.

2. The non-commissioned officer on canteen duty will be present during the sale of liquor; he will not sit in the canteen but remain in front of the bar.

3. He will not allow defaulters in the canteen, except between 7 and 8 p.m.

4. He will confine any man he sees drunk or committing a nuisance outside the canteen.

5. He will not allow any civilians (except officers' servants) to drink or purchase any article in the canteen, or to receive any drink or article purchased by a soldier.

6. He will prevent gambling, quarrelling, fighting, obscene language, or any irregular conduct in or near the canteen.

7. He will prevent canteen pots being taken from the canteen.

8. He will not allow liquor to be taken from the canteen except by married soldiers and their families for consumption at dinner and supper, or dinner beer for men at the depôt, under supervision of the orderly serjeants of companies.

9. He will not allow boys or buglers under 18 years of age into the canteen.

10. He will cause all music to cease at 9.25 p.m.

11. He will at first post see the canteen cleared and closed, and will so report at Staff Parade.

12. In addition to these duties he will march the sick to the medical inspection room at 8.50 a.m. and afterwards to hospital.

13. He will take the sick reports after the men have been seen by the Medical Officer and draw the rations of meat and half ration of bread for those marked "Hospital," take them with the sick to hospital and obtain the necessary receipt. Men sent to hospital will take their kits with them.

Orders for the Non-Commissioned Officer Commanding Piquet.

1. The piquet will mount at retreat daily, will be considered "on duty," and be liable to be called out until reveille the following morning.

2. The non-commissioned officer in charge will march the piquet to the guard-room and remain there till 9 p.m., when he will patrol his piquet in the lines till the canteen is closed and the men have gone to their huts.

3. He will see that no man quits his piquet without his permission, which he will only give for special reasons, and then for not more than 5 minutes.

4. He will hand over to the provost serjeant any men he may require for duty on the lines, who will be guided by the Orders for Policemen on Duty.

5. He will march the piquet to staff parade at last post, and report "all correct" (or otherwise).

Orders for the Non-Commissioned Officer in Charge of Police.

1. He will send a policeman daily, immediately after reveille, to see if any men of the corps or probationers are confined in the brigade guard-room.

2. He will, when necessary, march prisoners for medical inspection.

3. He will attend orderly room daily, and he will be responsible that prisoners are shaved and properly dressed before being taken in front of the Commanding Officer.

4. He will enter in his record of defaulters, after orderly room, the names of all defaulters from the guard and minor offence reports.

5. He will parade defaulters at 12.15 p.m. daily, march them to the canteen, hand over a list to the non-commissioned officer on canteen duty, and conduct them back to the lines.

6. He will march off under proper escort, prisoners for the North Camp Prison at 1.30 p.m., and similarly despatch an escort for men discharged therefrom. All court-martial prisoners and men awarded imprisonment in "days" are discharged at 7 a.m., except when their punishment expires on Sunday when they are discharged at 2 p.m. on Saturday, and will be kept in the guard-room till 7 the next morning. Men awarded punishment in "hours" are discharged at 2 p.m.

7. He will order the bugler on guard to sound defaulters' call once during every hour from reveille to retreat, call the roll and inspect them. If any are not accounted for, he will report to the serjeant-major.

8. He will hand over a list of defaulters to the commander of the guard at retreat.

9. Defaulters will be employed on fatigue for an hour before retreat, when there is no defaulters' drill.

10. Defaulters' drill will be in marching order at the following hours (Sundays excepted) :—

WINTER.

12.15 to 12.45 p.m. and 3.15 to 3.45 p.m.

SUMMER.

12.15 to 12.45 p.m. and 5 to 6 p.m.

Kits will be inspected at the end of each drill, which will consist of marching in quick time only, on the parade ground.

11. He will take over from the commander of the piquet, men detailed as extra police between retreat and tattoo.

12. He will acquaint the serjeant-major when he or any of his police wish to put in passes or to leave barracks so that the duty may be arranged.

Appendix III.

13. When the fire-alarm sounds the non-commissioned officer of police will despatch a man to ascertain where the fire is, reporting the result to the serjeant-major for the adjutant's and orderly officer's information. If it is in the vicinity of the lines a policeman is to be despatched with particulars to the provost-marshal, and the Superintendent Fire Brigade.

14. He will frequently visit the police on duty, and see that they understand and carry out their orders.

15. He will attend for orders at the provost-marshal's office and report the same to the Adjutant.

16. He will report all irregularities to the sergeant-major, to whom he will daily show these orders.

17. He will not, unless specially ordered, keep his police on duty after 10.30 p.m.

Orders for the Policemen on Duty.

1. To allow no hawkers, &c., to the lines without a pass. (List of those allowed will be furnished from the orderly-room, through the non-commissioned officer in charge of police.)

2. To prevent children and others from damaging the plantations in the vicinity.

3. To keep dogs from straying about the lines and parade ground.

4. To keep the parade ground clear during drill.

5. To keep off all suspicious persons and improper characters from the lines.

6. Special policemen to be on the barrack rooms during parade hours.

7. To prevent men loitering about the roads during a funeral, or going to the cemetery, unless properly dressed.

8. To note and report immediately, any irregularity, fire, &c., they may observe.

9. To prevent men quitting barracks before the prescribed hours, improperly dressed, or carrying bundles.

10. Not to converse or loiter on their beat or quit it unless properly relieved.

11. To report any person making an improper use of the foul drains.

12. One policeman to extend his beat to the Hospital for Soldiers' Wives and Children, around which he will frequently patrol.

Orders for the Regimental Quarter Guard.

1. The commander of the guard will make himself thoroughly acquainted with all orders for the guard as

well as those for the sentry. These orders are to be distinctly read and fully explained to the guard as soon as it has mounted.

2. Relieving Guard—On the approach of the new guard the sentry will at once call "guard turn out," the guard will fall in at open order, and the commander will give the commands "draw swords," "slope swords." The new guard will move to their position at the slope, and its commander will give the words of command, "Halt, left dress," "Open order, march." The guards will then salute each other, receiving the following words of command, "Old guard, carry swords." "New guard, carry swords." "Old guard, slope swords—stand at ease." "New guard, slope swords—stand at ease." The commander of the new guard will then take over the guard-room and prisoners, and the sentry will be relieved. The old guard will be marched off, the new guard saluting it by carrying swords, sloping swords after it has passed. The new guard will then form up on the ground left by the old guard, its commander giving the words of command, "right turn," "quick march," "halt," "front," "left dress," "stand at ease." The orders for the guard will then be read and explained, and the guard, having returned swords, will be dismissed.

3. On a relief being paraded the commander of the guard will give the command "draw swords," and the sword will be held at the carry while the sentry is being posted. Each sentry will do one tour of duty in marching order.

4. Sentries will move at the slope and salute by turning to their front and carrying swords.

5. The orderly room key will be handed over to the commander of the guard, who will be responsible that the orderly room is not entered at other than office hours, except by officers, the serjeant-major, or orderly room clerks.

6. The commander of the guard is responsible that his guard is always on the alert and ready to turn out smartly at a moment's notice, that the men do not lounge outside the guard-room and are always properly dressed. He will be particular that no conversation is permitted with outsiders. He will remember that the character of the corps may be compromised by the neglect of one individual.

7. The commander of the guard will visit his sentries at least twice by day and twice by night, and see that they are on the alert and acquainted with their orders.

8. The commander of the guard will on no account leave his guard, or permit any of the men to do so, except as laid down in 9 and 18. He will be careful that the bugler is not longer away than is absolutely necessary for him to sound calls in V lines, or elsewhere not in the immediate vicinity of the guard-room.

9. The guard will wash, &c., one at a time before 8 a.m. When great coats are worn those men who are not actually on sentry may take them off if they prefer so doing.

10. Sentries will be relieved every two hours, but in cold and inclement weather they may be relieved every hour at the discretion of the officer commanding. The commander of the guard will inspect and post each relief personally.

11. The guard will be turned out by the sentry and be inspected by its commander at reveille, retreat, and tattoo.

12. Should a fire break out, or on any other alarm, the guard will immediately turn out, and so remain till ordered to turn in. Notice will be sent at once to the Adjutant, orderly officer, and serjeant-major.

13. The commander of the guard is bound to receive over any prisoner amenable to military law committed to his charge by any officer or non-commissioned officer, who with as little delay as possible and invariably within twenty-four hours, will give him a written crime report duly signed. The names of all prisoners confined will be entered in the guard report.

14. Absentees returning sober who have not broken out of barracks, provided they have not been more than 48 hours absent, may be allowed to go to their barrack rooms. Their names and the exact hour of their return will be noted for the minor offence report if they return before midnight, but if after that hour the crime will be entered in the guard report.

15. Soldiers in a state of drunkenness will be confined alone in the prisoners' room or cells, their boots being removed and clothes loosened. They are to be visited every hour, or oftener if necessary, by the commander of the guard and an escort. If symptoms of a serious nature are noticed, a medical officer will be at once sent for.

16. The commander of the guard will search all prisoners handed over to him, and be responsible for the articles so obtained, which he will hand over to the Adjutant and obtain his receipt. A list of such articles to be furnished with the guard report.

17. Prisoners may be allowed to have their great coats, and those in confinement more than 48 hours or remanded for court-martial will be allowed the use of bedding, from tattoo to reveille. No articles will be allowed in their possession besides their clothes and cleaning articles, except such articles as are used at meals, and those only at meal hours. Razors are only to be given to men who are perfectly sober, and only one prisoner will be allowed to shave at a time, a sentry being present.

18. The commander of the guard with an escort will invariably be present while prisoners are being exercised, or whenever it is necessary that they should leave the guard-room for any purpose. He will carefully secure those left behind and place the oldest soldier in command of the guard. Prisoners will be exercised one at a time as follows:—1st May to 31st October, between reveille and 7 a.m., and between 5 and 6 p.m. 1st November to 30th April, between 8 and 9 a.m. and between 3 and 4 p.m.

19. The commander of the guard will send to the recreation room for coffee, &c., at 9.30 p.m.

20. The commander of the guard will cause supernumeraries to learn carefully, while they are not on sentry, the orders for the sentry. Supernumeraries will be allowed to return to their barrack rooms from 11 p.m., or after "visiting rounds" till one hour after reveille.

21. Should one of the guard be taken ill the commander will at once take steps to relieve him, and will report the case to the serjeant-major, who will inform the Adjutant.

22. The sentry will in challenging call "Halt! who comes there?" and on receiving the reply, "Friend," will answer "Pass friend, all's well," if the reply be "Visiting rounds," the sentry will call "Guard turn out," and the commander of the guard, after it has fallen in and drawn swords, will answer, "Advance visiting rounds—all's well."

23. The guard will cloak at retreat or last post, according to the season.

24. The urine tub will be kept outside the guard-room.

25. The commander of the guard will furnish a guard report on Army Form B. 160 in duplicate, duly completed on his being relieved. He will be responsible for all articles which are on inventory in the guard-room.

26. He will order the bugler to sound defaulters' call every half hour from retreat to quarter bugle before tattoo, and he will call the roll and inspect them.

Appendix III.

Orders for the Sentry.

1. To take charge of all prisoners confined in the guard-room, and allow nothing to be passed in to them without the sanction of the commander of the guard.

2. To alarm the guard in the event of fire or any extraordinary occurrence.

3. To pay proper compliments to all officers approaching his post.

4. To turn out the guard at all times to members of the Royal Family, whether in uniform or not; to the Surgeon Major-General, and all general officers if in uniform, from "reveille" to "retreat"; to the Commanding Officer in uniform, once by day; to all armed parties, and funerals either civil or military, approaching his post; and to the orderly officer on his order and visiting rounds. Except in case of fire or alarm, the guard will not turn out between the hours of 1 and 2 p.m.

5. To turn out the guard at "reveille," "retreat," and "tattoo."

6. To walk about in quick time in a smart and soldierlike manner, and not lounge, converse, sing, whistle, smoke, or commit any unsoldierlike practice. Not to stand at ease longer than a few minutes.

7. To challenge all persons approaching his post between "tattoo" and "reveille."

8. To direct men returning after "tattoo" to the commander of the guard.

9. To allow no one to enter the guard-room except on duty and properly dressed.

10. To take charge of all Government property in view of his post, and allow no unauthorised person to enter the orderly room or interfere with the wagons or water carts.

11. To report any damage done to the sentry box.

12. To allow no intoxicating or effervescing drink to be taken into the guard-room.

13. To keep a strict watch over the prisoners' window and not allow anyone to communicate with the prisoners or pass anything through the window.

14. On no account to quit his post, or sit down, or even lean against anything, lest he should fall asleep. If taken ill, &c., he must call the commander of the guard.

15. On no pretence permit another man to relieve him, unless in the presence of the non-commissioned officer of the guard. Should he be kept on his post longer than two hours, to report the circumstance.

16. To turn away any civilians loitering about the guard room.

Appendix III.

Orders for the Bugler on Duty.

1. He will report himself to the non-commissioned officer commanding the guard before leaving the guard-room for any purpose.

2. He will be on the parade ground 10 minutes before sounding "fall in" for all parades.

3. He will not go into the barrack rooms during the day, but will sleep in his own room from "lights out" till "reveille."

4. He will sound the "general salute" for all members of the Royal Family, general officers in uniform, and regiments passing with colours uncased.

5. He will be properly dressed from reveille to "lights out."

6. On the guard turning out, he will fall in one pace to the right of the commander of the guard.

7. He will repeat the fire alarm on all occasions when sounded by the bugler of the first brigade guard.

8. He will not sound any calls during office hours near the orderly room.

9. He will sound defaulters' call whenever ordered by the police corporal, and every half-hour from retreat until quarter bugle before first post as ordered by the commander of the guard.

10. He will sound "orderly corporals" for letters.

11. The following are the routine calls :—

No.	Calls.
1.	Reveille.
2.	Defaulters.
3.	Pioneers' call.
4.	Dress.
5.	Quarter.
6.	Fall in.
7.	Rations.
8.	Breakfast.
9.	Sick call.
10.	Dress, C.O.'s parade.
11.	Quarter „ „
12.	Fall in „ „
13.	Commanding Officer's call.
14.	Dress for Guard.
15.	Quarter Guard.
16.	Guard.
17.	Office.
18.	Fall in class.
19.	Defaulters and drill.
20.	Dinner.
21.	Dress.
22.	Quarter.
23.	Fall in.
24.	Rations.
25.	Tea.
26.	Defaulters.
27.	Orders.
28.	School.
29.	Piquet, retreat.
30.	Officers' dinner dress.
31.	„ mess.
32.	Quarter, defaulters.
33.	First post.
34.	Staff parade.
35.	Last post.
36.	Lights out.

APPENDIX IV.

Rules for the Guidance of Young Soldiers of the Medical Staff Corps.

Give a ready and willing obedience to the orders of all superior officers, and never question or hesitate to obey an order.

Perform all duties cheerfully and thoroughly. Afford assistance at all times to non-commissioned officers in the execution of their duty.

Make up your mind to be sober. Without this necessary qualification, however talented or zealous you may prove, you can be of no use in the Medical Staff Corps.

Spare no trouble to fit yourself for the duties of the corps; be patient, willing, and attentive when being instructed.

Observe the greatest cleanliness in your person and dress, and take the greatest care to preserve your equipment and clothing.

Acquire an erect and soldierlike bearing.

Always appear before an officer properly dressed.

When you wish to see an officer connected with your duty, or to make a complaint, get a non-commissioned officer to accompany you.

If you consider yourself ill-used or wronged by a comrade, request to see the staff-serjeant of your company, who will inquire into the circumstances and bring you before your company officer.

Salute all officers whom you know to be such, whether in uniform or not, and whether belonging to the Army, Navy, Militia, Yeomanry, or Volunteers.

If you are standing still when an officer passes, turn towards him, come to attention and salute.

Before you address an officer, or when an officer addresses you, halt two paces from him, and salute; on leaving him again salute.

If you are walking past an officer, commence the salute three paces from him, and lower the hand three paces after passing him. Salute with the hand further away.

If you are sitting when an officer passes, rise, stand to attention, and salute.

If you are with other soldiers take the time for saluting from the man nearest the officer.

Appendix IV.

If you appear in a room before an officer you are to salute him, but not remove your head-dress.

If you are marched up to an officer, or into a room before an officer, you do not salute unless ordered. If you are a prisoner you appear before an officer with your head-dress off.

In a civil court, when a judge or magistrate is present, take off your head-dress, unless you are on duty under arms as an escort.

If a soldier is without his head-dress, or carrying anything that prevents him saluting properly, he will stand at attention until the officer passes, or if walking will turn his head slightly towards the officer.

Never attempt to avoid an officer either in camp or in streets.

Address all officers and warrant officers as "sir."

Men attending hospital, excused duty, or ordered light duty, will attend parades, falling in on the right of their squads or companies, and will be dismissed on answering their names. They are not allowed to leave barracks.

Soldiers are forbidden to bring intoxicating liquor into barracks.

Soldiers affected with venereal disease must at once report sick. Those not doing so are guilty of an offence under Section XI of the Army Act.

Soldiers meeting troops will salute the commanding officer and the colours.

Smoking on the platforms of railway stations is strictly forbidden, and also in the streets before 5 p.m. in winter or 6 p.m. in summer.

A soldier when ordered to perform any duty which may appear to him to be unjust should perform the duty without hesitation or demur, and ask to see the officer commanding his company afterwards.

A good soldier will always avoid trivial complaints either against a comrade or superior, but when a complaint is made the soldier's tone and manner should be respectful. In the first instance a soldier will look to the officer commanding his company, but if then he considers he does not receive redress he can further appeal to the officer commanding and general officer commanding. Anonymous complaints are strictly forbidden.

No soldier is allowed out of bounds or after "tattoo" without a pass. The bounds of the Aldershot district extend to "Tumble Down Dick," Farnborough Road, Hale Church, Tongham Railway Bridge, Ash Wharf Bridge, North Camp Station. Soldiers will not leave the

regimental lines except on duty on week days other than Saturday or on half holidays until after 4 p.m.

A soldier who pawns, sells, or damages his regimental clothing, equipment or necessaries, or purchases any of these articles is liable to trial and imprisonment by court-martial. Soldiers are forbidden to borrow or lend any articles of clothing, equipment or necessaries.

A soldier is bound to obey all orders given by a superior, although that superior officer belongs to another corps. In a barrack room or in quarters, and in absence of a non-commissioned officer, the oldest soldier is responsible for order and must be obeyed as if he were a non-commissioned officer, and if he sees a soldier is drunk or committing a grave offence, should confine him, calling upon his comrades to assist him.

Soldiers are not to borrow or lend money amongst themselves, nor to get into debt with tradesmen or others. Should a well-conducted soldier require an advance of pay, which will be granted as an indulgence only, he may apply to the officer commanding his company.

When requiring advice or help, a soldier should always appeal to the officer commanding his company.

Soldiers are prohibited from taking part in any assembly organised for the purpose of discussing the conduct of their superiors; party, or political meetings, processions, &c.

Soldiers are cautioned to behave with courtesy and civility to civilians on all occasions, and pay proper respect to magistrates and civil authorities.

All soldiers under the rank of sergeant must have seven years' service, be in possession of two good conduct badges, and have £5 in the Regimental Savings' Bank, before he can obtain leave from the Director-General to marry, and a soldier who marries without leave forfeits all advantages accorded to those married with leave. In very exceptional circumstances a soldier married without leave may be granted permission to sleep out of barracks, but when this indulgence is given the soldier must be regular in his duties, orderly and clean in his quarters, and not out after tattoo without a pass for that purpose.

The children of soldiers married with leave must attend the garrison school.

Attendance at school is voluntary, except for soldiers under 18 years of age, but every soldier of the corps is recommended to obtain a second class certificate so as to render himself eligible for promotion.

A soldier when granted a furlough is entitled to his

full pay and 6*d.* a day in lieu of rations, but no corps or extra duty pay ; if he falls sick on furlough he can get free medical attendance at any military station, but civil medical attendance must be at his own expense. If an extension of leave is required on the grounds of sickness (properly certified) it may be granted by the commanding officer, any military officer on the staff of the army, or a justice of the peace.

Soldiers can claim their discharge by paying £10 within three months of their enlistment, but after three months' service they will only be permitted to take their discharge on payment of £18, unless they have over 12 years' service, when they may receive their discharge free.

A soldier's equipment has a number stamped upon each article, which is entered in his pocket ledger. His clothing and necessaries are each marked with his regimental number.

A recruit's plain clothes must be made away with as soon as he is clothed in uniform.

Men detailed for fatigue must wear drill suits or old clothing and not their best uniform.

Soldiers are on no account to wear or have in their possession articles of clothing other than those which are strictly according to Regulation, and they are forbidden to have any alteration made in their clothing without the sanction of their officers.

Flannel shirts and woollen socks are invariably to be worn.

Men on minor offence report, or prisoners at large, are not to leave barracks till their cases are disposed of.

Recruits' undress clothing is required to last for one year from date of issue, during which time it will be shown at all kit inspections. If previously worn out it will be replaced at the recruit's expense. Men leaving the depôt under a year's service will be careful to take their undress clothing with them.

APPENDIX V.

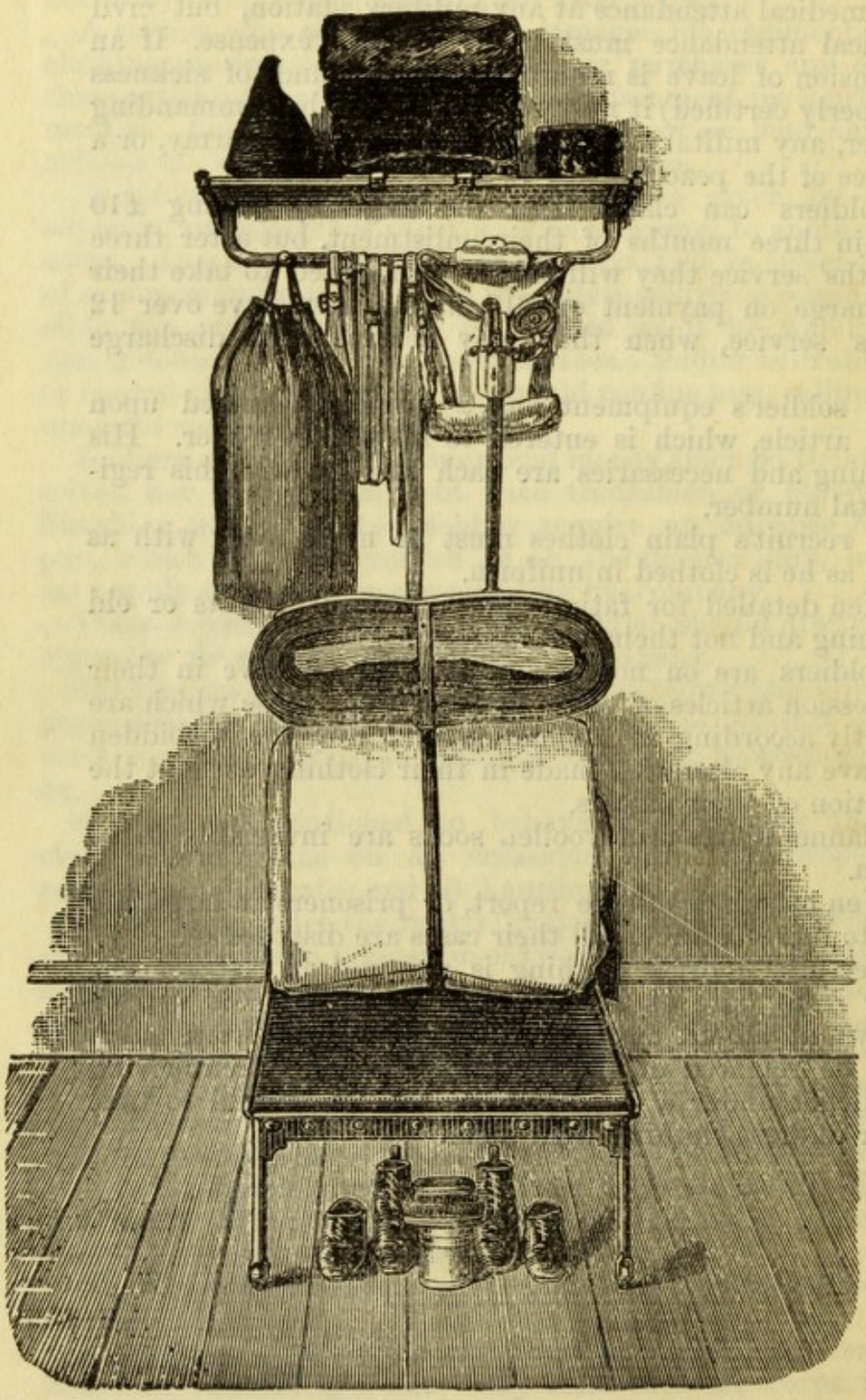


FIG. 69.—METHOD OF ARRANGING BED, BEDDING, &C., IN A BARRACK ROOM.

APPENDIX VI.

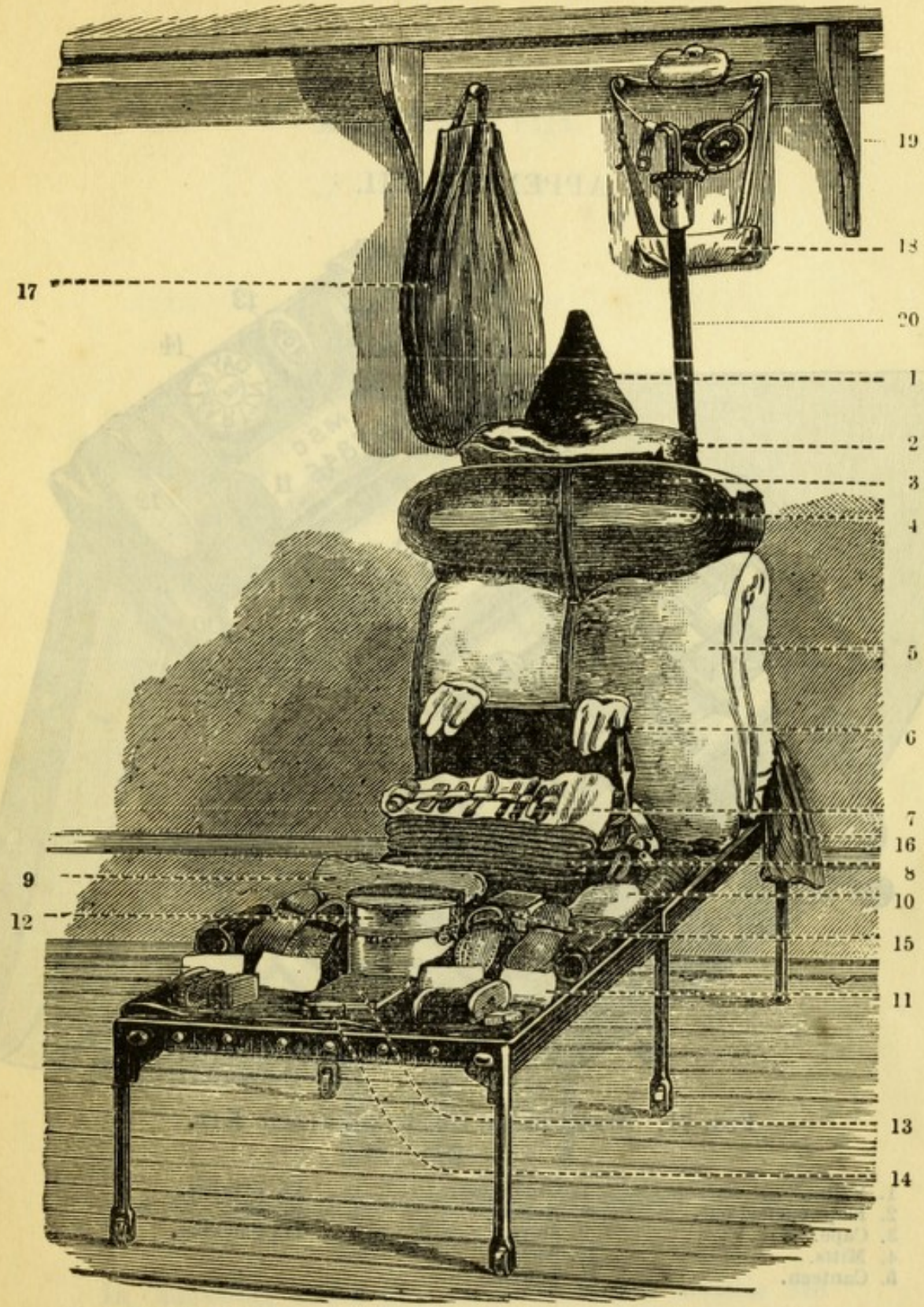


FIG. 70. METHOD OF LAYING OUT KIT IN A BARRACK ROOM.

The bedstead will be drawn out to the full extent and all the kit laid on it; the soldier will stand one pace from the foot, at the right hand side, holding his pocket ledger, open at the last entry in his accounts, in right hand.

1. Helmet and Cover.
2. Tunic folded.
3. 4. Bedding folded.
5. Mattress and Bolster.
6. Valise and gloves.
7. Holdall complete.
8. Trousers and Great-coat.
9. Shirts.
10. Towel.
11. Socks.
12. Canteen, canteen cover, boots, slippers, and leggings.
13. Manual for the Medical Staff Corps.
14. Blacking, Cleaning and Blacking Brushes, Soap and Sponge.
15. Devotional Books.
16. Cleaning Bag.
17. Kit Bag.
18. Haversack.
19. Waterbottle
20. Sword.

APPENDIX VII.

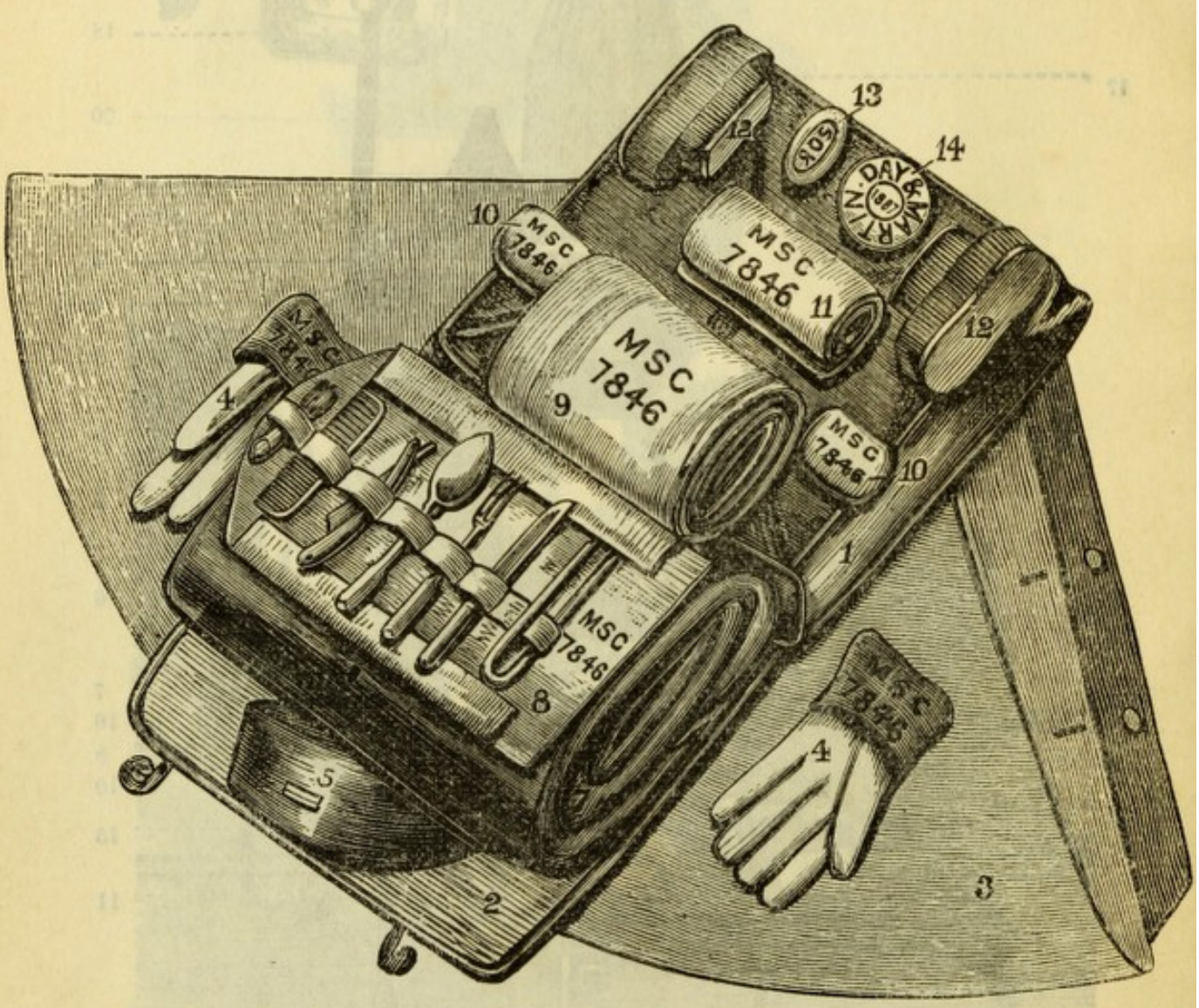


FIG. 71. METHOD OF SHOWING FIELD KIT.

1. Valise.
2. Flaps opened out.
3. Cape.
4. Mitts.
5. Canteen.
7. Great-coat.
8. Holdall.
9. Shirt.
10. Socks.
11. Towel.
12. Brushes.
13. Soap.
14. Blacking.

APPENDIX VIII.

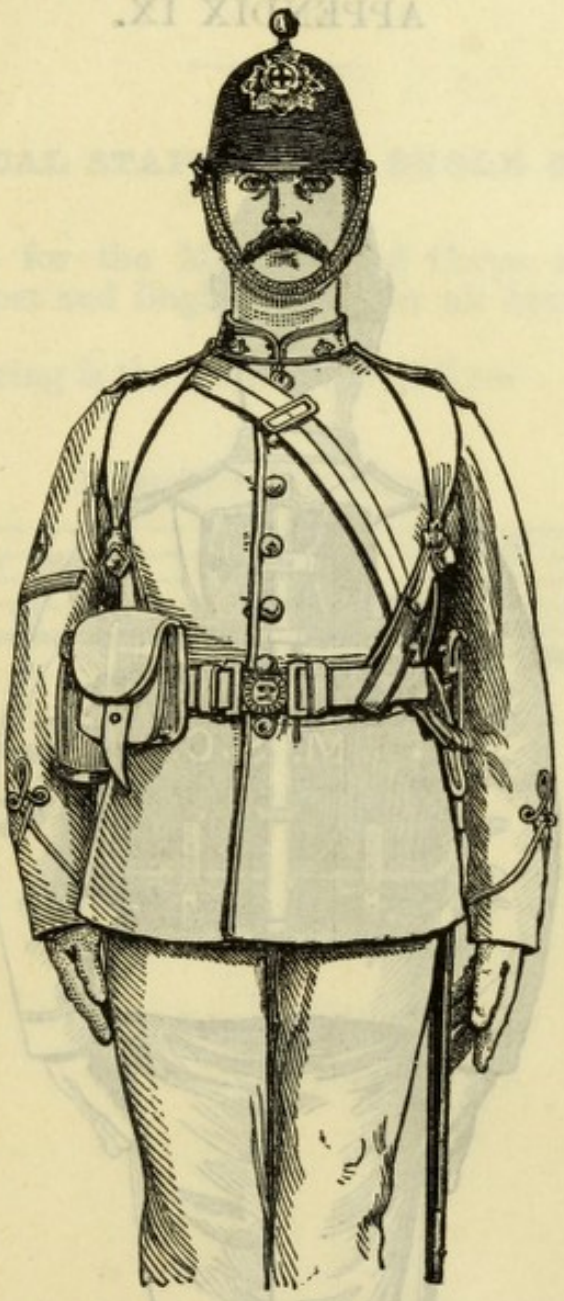


FIG. 72. MEDICAL STAFF CORPS. MARCHING ORDER.
(Front View.)

In marching order the undermentioned articles are worn by the Corps : frock, helmet, valise, mess tin, complete kit and equipment. If parading in marching order for the inspection of the Commander-in-Chief, tunics will be worn instead of frocks (see Queen's Regulations, Section XII, paragraph 41).

APPENDIX IX.

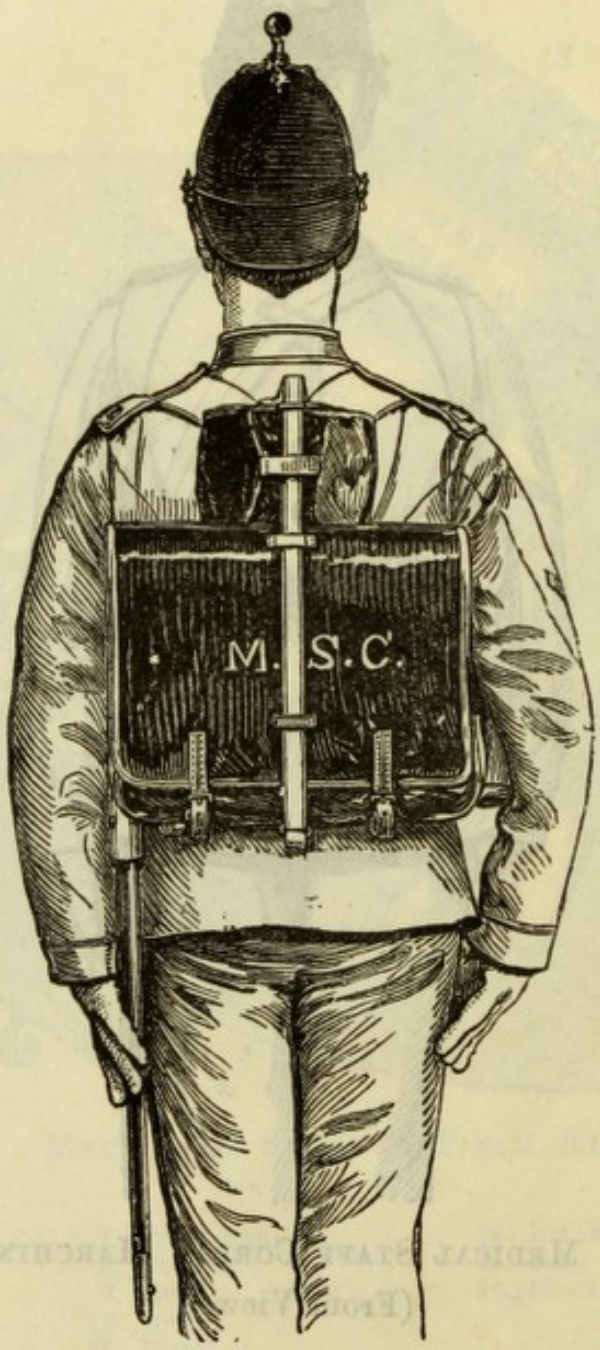


FIG. 73. MEDICAL STAFF CORPS. MARCHING ORDER.

(Rear View.)

APPENDIX X.

MEDICAL STAFF CORPS BUGLE CALLS.

The calls for the Medical Staff Corps are given in "The Trumpet and Bugle sounds for all branches of the Army."

The following is the Regimental Call :—

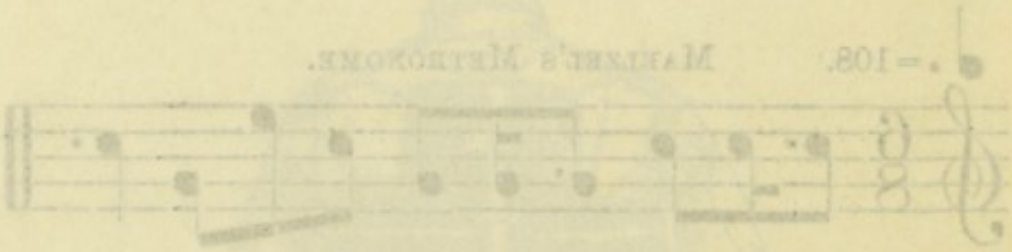


APPENDIX X.

MEDICAL STAFF CORPS BUGLE CALLS.

The calls for the Medical Staff Corps are given in "The Trumpet and Bugle sounds for all branches of the Army."

The following is the Regimental Call:—



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