

# *The Soldier's First Aid*

---

**R. C. WOOD**  
**QUARTER-MASTER SERGEANT**  
**ARMY MEDICAL CORPS**



*Macmillan*



R. C. WOOD  
Quarter-Master Sergeant, Army Medical Corps

# THE SOLDIER'S FIRST AID

A Simple Treatise on How to Treat  
a Sick or Wounded  
Comrade

BY

R. C. WOOD

Q.-M. S., Army Medical Corps

Chief Instructor of "First Aid" to Overseas  
Battalions and Stretcher Bearers of Military  
District No. 2, Toronto, Canada



TORONTO

THE MACMILLAN COMPANY OF CANADA, LIMITED  
LONDON: MACMILLAN & CO., LTD.

1917

COPYRIGHT, CANADA, 1937

By THE MACMILLAN COMPANY OF CANADA, LIMITED



PRINTED AND BOUND BY  
T. H. BEST PRINTING CO., LTD., TORONTO



## PREFACE

No apology is made for the publication of this modest work. The writer is appreciative of the fact that plenty of text-books on "First Aid" are in existence. This book, however, is intended to supply the need for a manual, simple and direct, and written in language which can easily be understood by all. Improvisation is the special feature dwelt upon, showing the best and most efficient use that may be made of the material at hand in the treatment of the patient. A careful study of this book, even at odd times, should make the reader competent to render skilled assistance to his comrades in the hour of need.

I am indebted to Mr. P. Figary, Photographer, 590 Yonge Street, Toronto, for the photographs from which the illustrations are made.

Toronto, March 1st, 1917.

R. C. W.



## CONTENTS

I	INTRODUCTORY	9
II	IMPROVISATION	11
III	FRACTURES AND DISLOCATIONS: General Principles	16
IV	FRACTURES AND DISLOCATIONS: Particular Treatment	20
V	HEMORRHAGE, AND HOW TO STOP IT	35
VI	WOUNDS, AND THEIR TREATMENT	50
VII	MISCELLANEOUS	57
VIII	CARE OF THE FEET	74
IX	TRANSPORTATION OF WOUNDED	76



# THE SOLDIER'S FIRST AID

## CHAPTER I

### INTRODUCTORY

The experience of this Great War has made us realize to a greater extent than ever before the colossal wastage of human life and limb, apart from the terrible suffering involved, on account of those present not knowing what to do at the critical moment. Men have bled to death at the feet of their comrades, who have stood enduring agonies of mind at their inability to help, when even a little knowledge of the general principles of hemorrhage would have saved the dying men. Again, even a smattering knowledge of artificial respiration would have saved many others, who had, through various causes, been suffocated. Further, through improper handling on the part of willing helpers, whose intentions have been of the best, simple fractures and wounds have been made very much worse, resulting in the loss of limb, and in too many cases the loss of life also.

Therefore, it is of the utmost importance that every soldier should equip himself with the know-

ledge of what to do in an emergency, not only because of the assistance he may be able to render to another, but also because it may be the means of saving himself. He should remember, too, that circumstances do not always permit of skilled medical aid being at once procured. Wounded men have lain, not only for hours, but for days, without receiving that professional attention that they have so much needed. Thanks, however, to the efficient, though perhaps rough, work of their comrades, they have been able to endure the shock, until ultimately picked up and restored to health. But what of the rest?

## CHAPTER II .

### IMPROVISATION

It should be understood at the outset that no "First Aider" should take upon himself duties or responsibilities that rightly belong to the Medical Officers. "First Aid" is skilled assistance given in the hour of need to a sick or wounded comrade. This includes arresting bleeding, preventing broken bones from moving, dressing wounds, transporting the patient to a place of safety or to the Dressing Station, keeping the patient warm, and more particularly preventing his injuries becoming worse, and all this by the use of the material which is at hand.

To this end the following can be used as splints—rifles (bolt removed and magazine emptied), bayonets, scabbards, signallers' flags, officers' canes, rolled newspapers, belts, and odd pieces of wood.

To keep the splints in position bandages are necessary. The following make admirable substitutes—handkerchiefs, string, neckties, lanyards, chinstraps, boot-laces, braces, shirts torn in strips, belts, and puttees, the latter being one of the most effective and valuable substitutes available.

The "First Aider" should keep in mind that a wounded comrade must receive every consideration. His equipment is always available to alleviate his suffering, or usable on his behalf in whatever manner that may be necessary. In **Pads** treating hemorrhage, pads play a great part, and, if small stones are not at hand, substitutes in the form of bowls of pipes, watches, match-boxes, folded cigarette cartons, cartridge cases, plugs of tobacco, small knives, whistles, corks, and buttons can be used. Knotted handkerchiefs also can be used with distinct success.

Slings for the arm are very necessary in many cases of injury. Very effective ones can be improvised simply by a puttee being placed around the neck and under the forearm, so that the arm is rested and supported. Again, a sling may be **Arm Slings** improvised by bringing up one side of the tunic, first cutting a small hole in the corner at the bottom in line with the buttons or button-holes, according to which arm it is desired to sling, and buttoning the hole on to the button at the breast-pocket.

The belt can also be put on bandolier fashion, and the arm placed at rest in the sling thus provided. A simple method, too, is putting the hand inside the tunic, unbuttoning a couple of buttons to admit the hand; the addition of a safety pin, attaching the cuff of the sleeve to the flap of the breast-pocket, will prevent the hand from slip-



ping. Also, a handkerchief passed under the wrist and tied to a button-hole, or a chin-strap or lanyard used in the same manner, will answer the purpose. Should the tunic be removed, and a sling for the arm be necessary, and nothing is available for the purpose, unfasten the cuff of the



FIG 1—IMPROVISED ARM SLINGS

shirt-sleeve and one button of the breast of the shirt; then raise the arm and button the cuff-button to the button-hole of the breast, and then the cuff button-hole to the button of the breast,

first placing the hand inside the shirt for additional support.

Improvisation of stretchers is dealt with in Chapter IX.



FIG. 2—IMPROVISED ARM SLINGS

Exposing wounds so that they can be dressed must be done with great care, otherwise they may be greatly aggravated, and the patient needlessly suffer in consequence. With this in view, do not hesitate to use your knife freely in cutting the clothing, regardless of the fact that you are probably ruining the garment. Do this if there is the *slightest risk* that by any other method you

will give the patient unnecessary pain, or make the injury worse. No direction is necessary for cutting off the clothes, except the boots. These

**Removal** should be cut from the top of the heel  
**of** at the back, and the laces cut completely  
**Clothing** through; the boot will then drop off.

Should the boot have to be cut off, cut the sock also. It is not always necessary, however, to cut off the clothing. When you can safely remove it, always, when taking off a coat, remove the sound arm first. Before a rifle is used in any way whatsoever for a patient, it should be pointed upwards, the bolt removed, and the magazine emptied.

## CHAPTER III

### FRACTURES AND DISLOCATIONS

#### *General Treatment*

A fracture means a break; for instance, a fractured leg means that a bone of the leg is broken. Fractures are of three kinds: (1) *simple*, meaning a clean break of the bone and nothing more; (2) *compound*, indicating either that the bone has pierced the skin, or that there is an opening leading down to the seat of fracture, such as would be caused by a bullet, and through which germs could pass and cause blood-poisoning; (3) *complicated*, meaning that arteries, veins, or tissues have been torn, or internal organs lacerated, as happens sometimes in the case of the ribs. It is very essential that care should be exercised to prevent what was a simple fracture at the time of injury from becoming either compound or complicated, a circumstance that, unfortunately, often happens as a result of improper handling by the helpers, or injudicious movement on the part of the patient. Where possible, fractures should be treated on the spot, the object of the treatment being to prevent movement of and to

**Kinds of Fractures**

**Object of Treatment**

give rest and support to the broken parts, thus preventing further injuries.

By careful observation, a fracture can be recognized by the pain and swelling at the seat of the fracture, by movement where there should be none, by unnatural shape, by the grating of bones, which can sometimes be both felt and heard, by loss of power or use, and by a possible shortening of the limb.

**Signs of Fractures**

If you are not sure that a fracture is present, though you suspect that it is, treat the patient for one. Do not take any chances.

A dislocation means that the bones constituting a joint have been displaced, the indications of this being pain, swelling, complete immovability of the part, and irregularity of the joint when compared with the corresponding sound one.

**Signs of Dislocation**

The only treatment a "First Aider" should give for a dislocation is to rest and support the part in the position desired by the patient, and prevent any possible movement. Do not attempt to put the bones back in their proper position. Again, if you are not certain whether the injury is a fracture or a dislocation, treat the patient for a fracture, so as to be on the safe side.

**Dislocation for Treatment**

When two splints are used in the treatment of a fracture, they should be placed opposite each other, the limb being between. To keep the splints

in position, always tie the bandage first above the fracture, then leave a space where the fracture

**Application of Splints** is to avoid pressure upon it, and then tie the bandage below the fracture,

thus effectively preventing any possible movement of the affected parts. Should there be a wound, give treatment accordingly.

*See Chapter VI.*

When applying bandages or dressings, particular care should be exercised not to apply them too tightly, as a constriction is likely to be caused, thus preventing the free circulation of the blood

**How tight to apply Bandages** to the part below the bandages, and thereby causing serious injuries. The bandages should be tied just tight

enough to keep the splints in position, and no more, and it should be borne in mind, too, that further swelling may take place, thus making the bandages tighter than ever. Very considerable trouble and added injury to wounded men has, in the past, been caused by the neglect of this precaution. The result has been the loss of many limbs through mortification setting in.

When through lack of time or suitable material splints cannot be applied to a fractured limb, always tie the limb to the body, if an arm, and if a leg, to the sound one.

In outlining the treatment to be given for the various fractures which follow, the reader must clearly understand that, in addition to the gen-

eral remarks just given. whenever a wound is present, it must be dressed first of all. This means that in a supposed fracture of the arm, with blood spurting from the wound, you would treat the patient in the following order: First, stop the bleeding (Chap. V.); then dress the wound (Chap. VI.); and last of all, treat for the fracture. While the patient is awaiting removal, or is on a stretcher, do not forget to give him a cigarette and to cover him warmly, thus treating for shock.

**What to  
do First**

## CHAPTER IV

### FRACTURES AND DISLOCATIONS

#### *Particular Treatment*

A fractured thigh, besides the usual signs, generally causes the limb to take a very unnatural position. This is especially true of the foot, which having lost its stay, will lie on the ground with the toes pointing outwards, the weight of the boot causing it to take that position. For effective treatment, carefully remove the puttees, unfasten the belt, and loosen the clothing. Then

#### **Fractured Thigh**

tenderly bring the foot over in its proper position, and with one hand supporting the foot at the back, and the other under the calf of the leg, gently draw the limb down to match the length, as far as possible, of the sound one. Get a comrade to kneel at the patient's feet and hold them firm, until you have completed your work; if you are alone, tie the feet together. Then take the patient's empty rifle, placing it to the injured side, the muzzle at the heel and the butt against the side, the barrel being flat on the ground with the trigger-guard up. Secure the butt to the body by fastening the belt over it snugly. Next place a puttee on the



point of a bayonet scabbard and pass it under the hips of the patient, tying it tight over the joint of the hip, placing the knot against the rifle. Cut off the unused puttee. Withdraw the bayonet in its sheath about half its length, securing it with a handkerchief, thus increasing its length, and place it on the inside of the injured thigh from the crotch down. Take the other puttee and tie once around the rifle and bayonet, enclosing the thigh above the fracture; then tie below it, thus placing no pressure on the injury. In all cases,



FIG. 3—FRACTURED THIGH

pass the puttee under the patient at the point of a scabbard or a thin piece of wood. Leave the balance of the puttee remaining for the moment. Next take the remainder of the first puttee, and secure the end of the inside splint, which is just below the knee, snugly to the leg and rifle, by tying once around, and finishing up what is left of the puttee by securing the ankles and feet together. Now return to where the remainder of the second puttee is hanging and pass that under and around both knees, fixing very firmly. Count-

ing the belt, there are now seven bandages used, and the patient's puttees and belt have supplied the whole. The patient is now ready for removal.

A fractured leg, that is, where one of the bones between the knee and the ankle is broken, will show the usual signs, and can be treated as follows: Lay or sit the patient down, and carefully remove his puttees. Take two complete bayonets and scabbards and partly withdraw the blade from its sheath in each, winding a portion of a puttee around the exposed blades for protection, firmness, and extra length. Next place one on each side of the injured limb from the ankle up; they will reach to just above the knee. Pass the end of a puttee under the knee and gently slide it up to secure the "splints" firmly to

**Fractured  
Leg**

the limb, tying the knot on the outside "splint". Without cutting the puttee, pass it again under the knee and slide down a little, securing it firmly just above the fracture. Next pass the puttee under the ankle, slide up a little, securing it below the fracture, taking care to leave vacant the place where the fracture is, and use the rest of the puttee by securing the two splints around the ankle. Complete the work by tying the ankles and feet together, finally the knees. The patient can now be moved.

A fractured knee-cap can usually be readily diagnosed as, in addition to the patient not being able to walk, you can, as a rule, feel the space in

the centre of the two pieces of broken bone. The treatment is simple, and can be promptly carried out. Remove the puttees as before, empty the rifle, kneel on your left knee, raise the injured leg, place the butt of the rifle well up under the buttock, or ham, of the patient, allowing the leg to rest on the rifle, which is now resting on your



FIG. 4.—FRACTURED LEG

right thigh. Roll one puttee as you would for putting on in the usual way, and proceed to wind it round the limb above the kneecap three times; then wind around below the kneecap.

**Fractured  
Kneecap**

applying snugly at both places, using the tape of the puttee both above and below the injury. Take particular care that no

pressure is put on the fracture. Next take half of the remaining puttee and secure the butt to the thigh, tying it well up in the groin. The other half of the puttee is used by placing the centre under

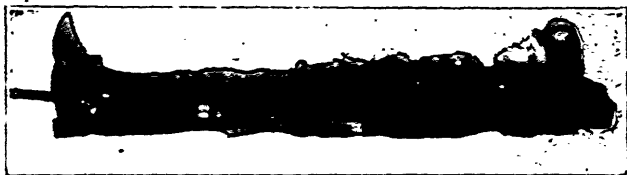


FIG 5 FRACTURED KNEECAP

the waist of the foot, crossing over the instep, passing round and round the ankle, until used up. Complete by placing the injured limb on a raised support. If this cannot be done, rest it on the other leg. The limb must be kept elevated.

A fractured or crushed foot should be treated as follows: Cut off the boot and the sock and remove the puttee. The sole of the boot, the upper being cut off, or an empty scabbard, will do for a splint. If the scabbard is used, bring the limp part up the back of the leg. Pad the splint, if necessary. Gently apply the splint to the bottom of the foot, then wind the puttee twice around the foot, then around the ankle, and proceed with figures of eight around the foot and the ankle until used up. Finish by resting the foot on an improvised cushion.

**Fractured  
Foot**

A fractured spine is very serious and demands

great care. The patient will complain of a lack of feeling and movement in his lower limbs. Proceed as follows: If the patient is huddled up, very carefully straighten him, lay him on his back, and place his cap under his head for a pillow. If you are alone, tie his feet, then his knees, together, cover with greateats, and go for assistance and a stretcher. On returning, unfasten his tunic, emptying all its pockets and placing the contents in his handkerchief, remove his puttees, and roll each

**Fractured  
or Injured  
Spine**

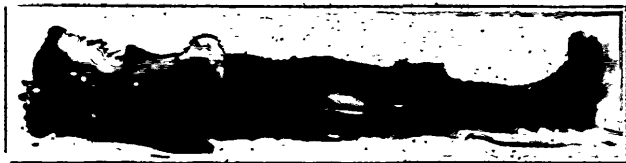


FIG 6—FRACTURED SPINE

front of his tunic around an empty rifle, keeping the muzzles in line with the top of his head. Next pass a puttee twice under the back of his head, securing it to the muzzles, thus making a support for the head. Next pass the remainder of the puttee under the hips, tying very firmly over the joints, unfasten the temporary bandage round the knees, and tie again, this time enclosing the butts of the rifles; the feet are, of course, already tied. When lifted, the patient will be perfectly flat, this being the only way in which he can be safely moved. You and your four comrades take

short side steps over the stretcher and gently lower the patient, leaving on the improvised equipment, so as to facilitate his being lifted off on arrival at the Dressing Station. Care must be taken in lifting the patient to prevent his tunic from slipping; therefore, grasp it firmly.

A fractured hip is also serious, and must be treated with great care. Pass the patient's puttee around the hip, no splint being used. Lift the patient and place him on a stretcher, as in the case of a fractured spine.

A fractured arm, where the injury is close to the shoulder joint, is easily treated. Remove one puttee, cut a small hole in the square end of it, button it to the second button down of the tunic, and wind it around the patient, placing it above, on, and below, the fracture snugly, but not too tightly; twice around will do. Use the small portion of the puttee that is left by passing it around the wrist and hand, and placing the tape around the neck, the forearm being bent at the elbow, thus making an effective sling. Care must be exercised to keep the elbow free from pressure, in order to enable its weight to keep the bones from overlapping. No splint is necessary in this treatment. It would add to the patient's comfort, before applying the puttee, if a pair of mitts or socks were placed under the arm from the armpit to the elbow, thus forming a cushion. See Figure 8.

**Fractured  
Arm at  
Shoulder**

A fractured arm, where the injury is about the centre, between the shoulder and the elbow, can best be treated by the use of two splints, such as



A

B

C

FIG. 7—FRACTURES

A. Arm. B. Forearm. C. Collar-bone.

empty scabbards, or bayonet and scabbard, protecting the blade if it is used. Remove  
**In Centre** the puttee, pass it twice around the arm above the fracture, again below the fracture, tying knots on the outside splint, keeping the elbow free. Use the balance of the puttee around

the wrist and hand, and the tape around the neck, making a sling, the elbow being bent, as in previous fracture. *See Figure 7.*

A fractured forearm can be treated by using two scabbards, or a bayonet and scabbard, the blade being protected if it is used. First bend the elbow, place the forearm between "splints", and tie the puttee twice around above and twice around below the fracture, the balance of the puttee and the tape being wound round the hand. Bring up the front of the tunic around the injured limb, thus providing a sling, as described on page 12. *See Figure 7.*

A fractured or crushed hand calls for a splint. The scabbard may be so used, being placed against the palm of the hand, reaching to the finger-tips. Pass a puttee around the fingers twice, leaving the thumb free, then around the wrist, and make the figure of eight several times. The sling is the same as for the forearm.

A fractured elbow or bone, very close to the joint, either above or below, necessitates a splint shaped like the two sides of a square. A bayonet and scabbard may again be used, the blade, of course, being protected. Use a handkerchief to tie the ends of the "splints" together; then place the splint on the inside of the arm, bending the elbow at right angles, and tying in the usual way, first above, and then below the elbow, not forgetting the hand, and leaving the



thumb free. Use the tunic sling, as in the case of the forearm. *See Figure 8.*

**Double Fracture** An arm fractured above and below the elbow requires the same right-angled splint as the elbow, tying above and below the top fracture first, then above and below the lower fracture, and the hand last. The sling is the same as for the forearm.

A fractured collar-bone means that the arm is helpless, and the fracture can usually be seen as well as felt. For treatment, place a pair of mitts, or other suitable object, under the injured armpit. Then bend the elbow, resting the forearm well up against the breast, the fingers pointing

to the opposite shoulder. Next take **Fractured Collar-bone** a puttee, cutting a small hole in the square end and buttoning it on to the shoulder-strap of the sound shoulder, passing it down the back to the bent elbow, over the point of it, up over the forearm to where you commenced, covering the hand in so doing. Make another circuit with the puttee, using the tape in a similar manner. Then lengthen the patient's belt, and buckle the elbow tight to the body, thus levering the broken ends of the collar-bone apart. *See Figure 7.*

A fractured shoulder-blade can be treated by applying a puttee just snug enough to give support. Proceed by cutting a small hole in the square end and buttoning to the shoulder-strap

of the injured shoulder. Unwind down the back, passing it under the opposite arm-pit, over the breast, and continue until used up. Next bend the arm at the elbow, the forearm resting against the breast.

**Fractured  
Shoulder-  
blade**



A

B

C

FIG. 8—FRACTURES—

- A. Shoulder-blade. B. Arm close to the shoulder.  
C. Elbow.

the fingers pointing upwards and to the opposite shoulder. Attach the other puttee to this shoulder-strap button, and proceed to unwind the put-

are down the back and over the elbow joint and forearm, as is done for a fractured collar-bone, thus resting and supporting the arm and preventing its movement. The puttees will have made an X at the patient's back. *See Figure 8.*

A simple fracture of the ribs is easily recognized, the signs, in addition to the usual ones, being that the patient may incline to the injured side and hold his hand to the part, if in front, and if at the back, may let his arm hang limp, bending over to the side affected. In addition, he may breathe rather quicker, owing to feeling a stab

**Fractured  
Ribs  
(simple)**

of pain when taking a normal breath. Be positive that the fracture is a simple one, and then treat as follows: Empty the breast pockets of the tunic and button the square end of his puttee to the far breast-pocket button. Pass the puttee across the chest well up and under the arms, across the back. Cover up about two-thirds of your first round and use up the puttee, taking care that it is applied only an easy snug. Finally place the arm of the injured side in a sling by bringing up the front of the tunic, as in the case of a fractured forearm.

A complicated fracture of the ribs demands an entirely different treatment to that of a simple fracture. The debris of a trench, burying a man, may cause this injury. The signs of a complicated fracture of the ribs, in addition to those enumerated immediately above, are, that the

patient will cough and spit blood, which will either be bright red and frothy, indicating that the lungs have been pierced, or dark brown, similar to coffee grounds, and possibly mixed with food, indicating that it is coming from the stomach. Promptly lay the patient down, inclining him to the injured side, supporting him at the back with a couple of greatcoats. This will enable him to breathe more freely, and thus ease the pain. Loosen the clothing, unfastening the belt, of course, and see that he is generally in a comfortable and restful position. Place the arm of the injured side in a tunic sling; then cover him up with greatcoats or blankets. Should his condition be serious, by his threatening to collapse, treat him for internal hemorrhage. *See page 47.*

A fractured jaw gives considerable pain, and it can be readily diagnosed by observing that the patient will probably be supporting his chin in his hand, by the teeth being uneven, by his speech being indistinct, and by a little blood issuing from his mouth. Proceed as follows: Take a handkerchief and fold it like you would a muffler for the neck, making it about three inches wide. Next tie a knot about four inches from each end, the space between the knots not to be more than 9 inches, or less than 6 inches. Open the fold between the knot, and you will find that it forms a pocket.

**Fractured  
Ribs**

(complicated)

**Fractured  
Jaw**

Join it to another handkerchief to give additional length to the first, and place the point of the patient's chin in the prepared pocket. Pass the second handkerchief over the top of the head and tie off on the opposite side close to the ear; then spread out as much as possible the part of

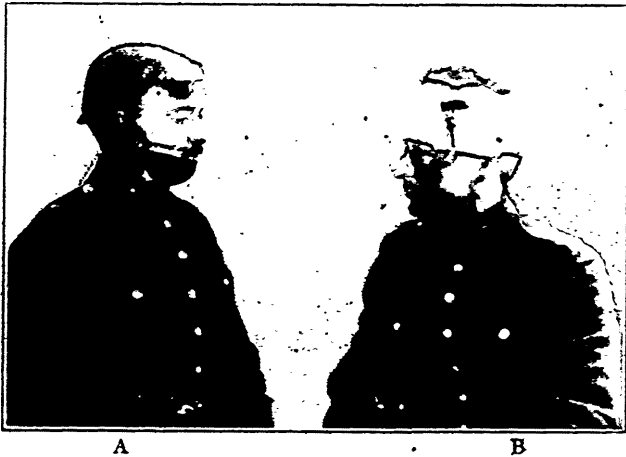


FIG. 9—FRACTURES

A. Fractured jaw. B. Pad and bandage, showing pipe as pad

the handkerchief that is over the top of the head. In applying the handkerchief, see that the knot of the pocket on the injured side of the face does not come near the fracture, otherwise the hard surface will cause unnecessary pain. In the event of only one handkerchief being available, a boot-lace or two chin-straps can be attached to the handkerchief, and tied over the top of the head, and a

second time across the back of the head, one acting as a check to the other. No better support for the jaw has yet been devised. It will prevent movement, and cannot possibly slip if at all reasonably applied.

A fractured skull may cause temporary, and later profound, unconsciousness. If the patient is conscious, lay him down with the head and the shoulders slightly raised, warning him to keep his head still, and cover him up. If he is unconscious, treat him as indicated on page 57.

**Fractured  
Skull**

## CHAPTER V

### HEMORRHAGE, AND HOW TO STOP IT

If one class of "First Aid" knowledge is more important than another, it is that of hemorrhage, or bleeding. Therefore, every soldier should fully acquaint himself with the information contained in this, possibly the most important chapter in the book.

When about to treat a patient, examine him carefully and quickly to find out if he is bleeding from an unseen or unknown wound.

#### **Examine Patient**

This must be attended to immediately, because, no matter what the injury may be, bleeding must be stopped first. At the outset, it should be understood that the blood in the body flows in two directions, that in the arteries flowing from the heart, and that in the veins flowing to the heart. There is an intermediary

#### **Direction of Blood**

bleeding called *capillary hemorrhage*, which is very trifling and not worthy of much space; sufficient to say, that the blood simply oozes from a wound in small quantities and can be readily arrested by the slightest pressure.

To be efficient in rendering "First Aid", the

soldier should know from what source the blood is coming, whether from an artery or from a vein. It is easy to distinguish one from the other,

because each has two characteristics.

**Arteries  
and  
Veins**

Blood from an artery is bright scarlet in colour, and comes from the heart side of the wound in jerks or spurts. Blood from a vein is dark red in colour, tinged with blue or purple, and comes from the far side of the wound in a steady flow. Further, it must be borne in mind always that the heart pumps less blood when

the patient is sitting, and less still

**Position  
of Patient**

when he is lying down. Therefore, if the patient is bleeding, the natural thing to do is, *first*, lay him down; *second*, raise the limb, if it be one, unless it is fractured; *third*,

expose the wound; *fourth*, apply pressure close to the wound with the thumbs (if an artery, on the heart side; if a

**How to  
Stop  
Bleeding**

vein, on the far side); *fifth*, apply iodine to the First Field Dressing, and place the dressing squarely on the wound, passing the ends several times around; *sixth*, tie a knot loosely on top of the wound, placing under it a stone or other hard

substance wrapped in a handkerchief, so forming a pad to assist the direct pressure on the wound. *See page 38; seventh*,

**Pad on  
Bleeding  
Point**

when the hard pad is in position, tie the knot sufficiently tight to stop the bleeding, but no tighter, as there is a danger of the wound swelling



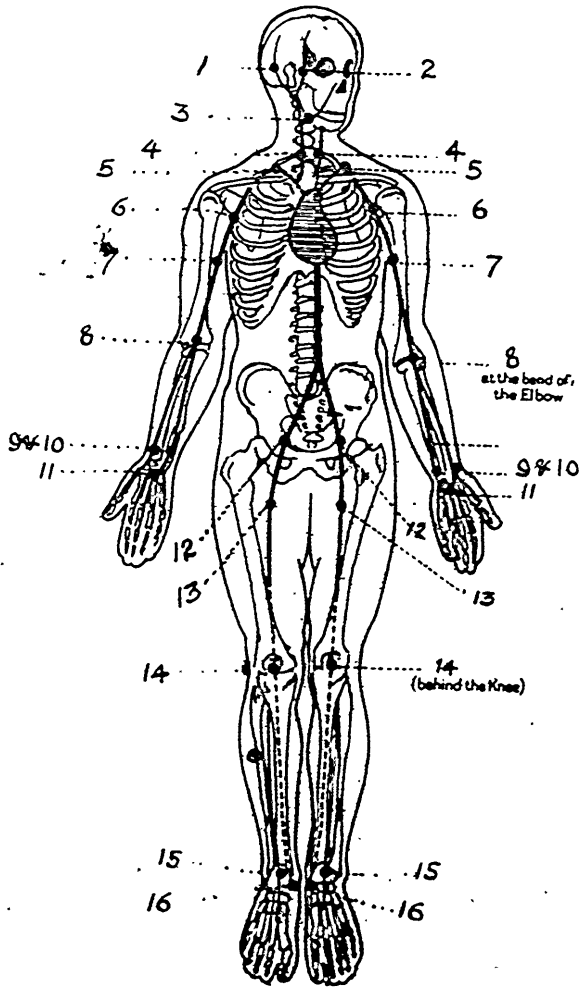


FIG. 10--THE PRESSURE POINTS

and thus causing constriction. This method will stop any hemorrhage that is coming from a wound that is not a large one, or that is not complicated by a fracture, shrapnel, or fragments of shell. This procedure should always be followed when stopping the bleeding from a wound free from the complications already mentioned. *See Figure 9.*

When the bleeding wound is complicated in the manner above indicated, pressure must be placed on what is termed a *pressure point*, that is, a place

where an artery passes close to or over a bone. The arteries are like rubber tubes, and can be readily pressed against some hard substance like a bone; when this is done no blood can pass that particular point. Pressure can be put on these various points by fingers and thumbs, pad and bandage, tourniquet, or by bending the limb, each according to the place located. Further, in most cases the pressure point nearest the wound between the heart and the wound should be used.

The pressure points in the head are six: No. 1, two fingers' breadth behind the ears on each side; No. 2, each side of the forehead, in line with the eyes; No. 3, about the centre of each side of the lower jaw, where the groove can be felt. Excepting No. 1,

**Pressure  
Points  
of the Head**

the blood can be felt passing the spot quite easily. The pressure of the fingers, or the thumbs, will readily stop any wastage of blood from a wound

above those points. If necessary, small pads can be applied and tied on with a handkerchief.

The pressure points of the neck are two, No. 4 being each side of "Adam's Apple", where the



A B C

FIG. 11—HEMORRHAGE

A. Pressure point No. 1. B. Pressure point No. 2.  
C. Pressure point No. 3.

rapid coursing of the blood can be easily felt. For a wound in the neck, or fractured jaw, pressure with the thumb on this point at the side affected will meet with the desired results. In some cases of neck wound pressure may have to be applied above and below,

**Pressure  
Points of  
the Neck**

to stop effectively the wastage. Only thumbs can be used, bandages being impossible. Care must be exercised not to choke the patient.

Pressure point No. 5 is located on each side of the base of the neck. The throbbing can be felt by placing the thumb behind the collar-bone and pressing on the top rib. The most direct pressure can be obtained here by stand-

**Pressure  
Point of the  
Shoulder**

ing at the back or side of the patient and inclining his head to the side injured. This pressure point is vitally important, as the artery here passes across the shoulder and down the arm. Should a badly smashed shoulder or top of the arm be accompanied by bleeding, the flow can be stopped forthwith even by the patient himself. Thumb pressure has to be maintained until either the artery closes up of its own accord, an unlikely event, or medical assistance can be procured. Its application, however, is extremely simple.

Pressure point No. 6 is located under each arm-pit, at which place a hard pad, the size of a billiard-ball, should be placed. Next pass the centre of a puttee tight up against the pad, crossing the ends on the shoulder, bringing sufficient pressure

**Pressure  
Point of  
the Arm-pit**

to bear on the artery to stop the bleeding. Then pass one end across the chest, and the other across the back, tying off under the opposite arm-pit. Ease this every thirty minutes. If the arm affected is

not broken, the forearm should be tied across the body, thus increasing the effectiveness of the pad. The pressure at this point is, of course, to be used only when the arm is bleeding from a "complicated" wound, as already mentioned.



A

B

C

FIG. 12 HEMORRHAGE

A. Bleeding at the nose. B. Pressure point No. 6.

C. Pressure point No. 5.

Pressure point No. 7 is situated in the centre of the arm on the inside, in line with the seam of the tunic sleeve. The passage of blood down the arm can be instantly stopped by grasping the arm at this point, thumb outside and fingers in-

side, gripping firmly, and giving the hand a slight twist away from the patient. This stoppage can be made permanent by the application of a tourniquet, which can be made with a knotted handkerchief, a

**Pressure  
Point of  
the Arm**



FIG. 13 HEMORRHAGE

A. Pressure points Nos. 15 and 16 B. Pressure point No. 7. C. Pressure points Nos. 9 and 10.

stone, or other hard substance for a pad. Tie a handkerchief over the pad, which has been placed in line with the inside seam of the sleeve. Then secure the bolt of a rifle, a bayonet, a scabbard, or a short stick, in the knot on the opposite side of the pad, and twist it around until the art-

ery has been compressed. To keep the stick from flying back and releasing the pressure, tie it to the arm with another handkerchief. Ease every thirty minutes.

Pressure point No. 8 is in the bend of the elbow. Place a hard pad in the joint, or failing a pad, roll up the sleeve, raise the forearm, and tie the puttee around both the arm and the forearm at the wrist, crossing the puttee between the two in the centre. Ease every thirty minutes.

**Pressure  
Point of  
the Elbow**

Pressure points Nos. 9 and 10 are at the wrist, just over the edge, and about an inch and a half from the junction of the hand and the wrist. In the event of a fracture, a crushed hand, the presence of shrapnel, or a hand carried off, pressure can easily be applied at these points with the thumbs, and later by two small pads tied firmly on with a handkerchief. Ease every thirty minutes, unless hand is off.

**Pressure  
Points of  
the Wrist**

Pressure point No. 11 is in the hand. If the wound is free from complications, swab it with iodine; then place the Field Dressing in the patient's hand, first putting some hard substance inside. Get the patient to close his fist over it, and tie firmly with two handkerchiefs, or a puttee. Finally, place the forearm against the breast, the hand reaching to the opposite shoulder, and use the puttee to

**Pressure  
Points of  
the Hand**

keep the arm in position, as in the case of a fractured collar-bone. *See page 29.*

Pressure point No. 12 is in the groin. Pressure



FIG. 14—HEMORRHAGE

- A. Pressure point No. 8. B. Pressure point No. 11.  
C. Pressure point No. 14.

can be applied here only with the thumbs placed one on the other, first elevating the leg unless it is broken. Get relief when fatigued and await the doctor; kneeling on the left knee and resting the injured leg

**Pressure  
Point of  
the Groin**



on your right thigh is a good position to take. The exact spot to press is where you can feel the hip bone in the centre of the crease that is made where the thigh joins the trunk, the bone at this point being like the edge of a thick plate. More blood can be lost in a shorter time from this artery than from any other, excepting the main artery of the body; therefore, great promptitude in treatment is necessary. It may not be advisable even to expose the wound, as less than a minute of bleeding is sufficient for fatal results to ensue.

**Pressure Point of the Thigh**

Pressure point No. 13 is one-third of the distance down from the groin to the knee, on the inside. Place the pad, bandage, and stick for twisting in the same manner as for the arm. *See pressure point No. 7, page 41.* Ease every thirty minutes. Pressure point No. 14 is in the bend of the knee. First place a pad in the joint, or turning up the pants and bending the knee, secure it as in the case of the elbow. *See pressure point No. 8, page 47.* Ease every thirty minutes.

**Pressure Points of the Knee**

Pressure points Nos. 15 and 16 are located at the bottom of the leg, where the second or third lace hole of the boot comes, and under the ankle on the inside. Thumb pressure, then pads and handkerchief, the leg being kept raised, will be sufficient here. In case a limb is blown off, bleeding may not occur

**Pressure Points of the Foot**

at once, but it should be prepared for by applying a constriction with a lanyard, string, or handkerchief, at the stump, and placing a tourniquet in position at the nearest pressure point, to be used if the constriction is not sufficient to check the hemorrhage when it occurs. Keep the stump elevated.

**Limb  
Blown off**



FIG. 15—HEMORRHAGE  
Pressure point No. 13.

Burst varicose veins are extremely dangerous, because the blood pours out from both sides of the wound; on account of the valves ceasing to act.

**Burst  
Varicose  
Veins** Treat as follows: Lay the patient down; raise the limb; expose the wound; apply thumb pressure on each side of the wound; place a pad and a bandage on the wound; then place a bandage tightly around the

leg below the wound and another above the wound. Keep the leg elevated.

Internal hemorrhage is extremely difficult to combat successfully. The signs present in a patient who has lost a good deal of blood through internal injuries, and of which lost blood there is no outward sign, are extreme pallor of the face,



FIG. 16—HEMORRHAGE

Burst varicose veins.

ashen gray lips, cold sweat on the brow, very feeble pulse, yawning, very faint breathing, sighing, complaining of lack of air, and great depression. A man in this condition is bordering on collapse, and may become unconscious before you reach him. In that event his heart might flicker and ulti-

**Internal Hemorrhage**

mately cease to beat. His condition then is very critical, and quick action is necessary, if he is to be saved. Keep the patient, who will, of course, be lying down, perfectly still. Treat as follows: Ease all his clothing, keep his head low, and raise his legs. If he is conscious, give him a little whiskey, or brandy and water, or other stimulant. Remove his boots and puttees and rub his limbs towards the heart, driving the blood from them. Bind the puttees tightly around the



FIG. 17--INTERNAL HEMORRHAGE

limbs from the toes to the groin. The same with the arms. Apply friction and bind from fingers to shoulder. This will enable the trunk and head to circulate what blood remains. Pile greatcoats on him to keep him warm, and apply hot stones or hot water-bottles to his feet, between his legs, and under his armpits. Also a very important point is to speak encouraging words to the patient, as, owing to his concern about his condition, he needs to be stimulated. Do everything in your power to keep up his spirits—that will support

him more than anything. Get him in the hands of the doctor as quickly as possible.

Before leaving the subject of hemorrhage, an added word of caution is necessary. Mention has been made of the serious consequences arising from overtight dressings. This, for reasons al-

**Caution**

as to

**Tourniquets**

ready mentioned, applies with even more force when tourniquets, or "pressure points", have been used.

Remember that such pressure should be *eased*, not removed, every thirty minutes. Then, if the bleeding commences, the pressure can be re-applied. If this pressure is reduced for half a minute only, a good deal of nourishing blood will have been carried to the famishing parts below the bandage, thus keeping alive the affected part and mitigating against the possibility of the dreaded mortification setting in.

## CHAPTER VI

### WOUNDS, AND THEIR TREATMENT

A wound means that the skin and tissues have been injured. It is thus easily possible for the part affected to become poisoned through contact with dirt of some kind, or even with

#### **Sterilizing Wounds**

the air itself. Therefore, in treating such, very special care has to be exercised lest the wound should become contaminated. To this end, then, every wound should be swabbed with *iodine*, using the very valuable phial issued for this purpose. The wound may smart for the time, but the benefits received are incalculable. Experience has shown very clearly that the soil on the Western Front is highly impregnated with germs of disease, which sets up blood-poisoning, when coming in contact with

#### **Cause of Poisoning**

a naked wound. The rich fertilizers and manures used in the soil are responsible for this condition. The iodine is issued to offset that danger; therefore, use it just as soon as you are able after the wound has been received. Lockjaw is a common result of this poisoning. Should the patient be inoculated shortly after receiving his wound, successful treatment as far as poisoning is concerned is almost assured.

Extra care should be exercised in opening the First Field Dressing, not to let anything touch the surface of the dressing that is to be placed on the wound. Unfortunately, considerable numbers of wounds have been dressed with Field Dressings that have been positively filthy, reeking with dirt and filth of every description. In many cases there has been no choice in the matter, but too much emphasis cannot be laid on the necessity for scrupulous cleanliness. If there is no dressing available, use the inside of an envelope, first scorching it, or smearing it with iodine; it is far better than nothing at all. Also do not make the very common error of tying the dressings too tightly. The evil result of this is not computable.

**Cleanliness**

Unfortunately, the general tendency of the average man is to tie the dressing tightly, and he does, and has done this with a vengeance, with the result that men have lost their limbs, and even their lives, through constrictions being caused, the part swelling after treatment. As no blood can pass the point with nourishment to feed the parts and tissues, the wound mortifies, and the surgeon's knife is called into action, in many cases too late.

**Tying Dressings**

A very important point to remember in the treatment of a wounded comrade is to use *his* Field Dressing and equipment first. Do not draw on your own unless

**Care of Field Dressing**

you have to. In the Trenches, take the utmost care of your Field Dressing, and do not use it there, unless you have to. It is a serious offence to lose or misuse this part of your equipment. It

is of vital importance that blood clots should not be removed when dressing a wound on the field. Further, do not attempt to wash the wound in any way. Have your dressing quite dry; only that and iodine should be used. Wounds should never be

probed. If fragments of shell, or pieces of shrapnel are on the top of or protruding from a wound, making it easy to

**Blood  
Clots**

**Dry  
Dressings**

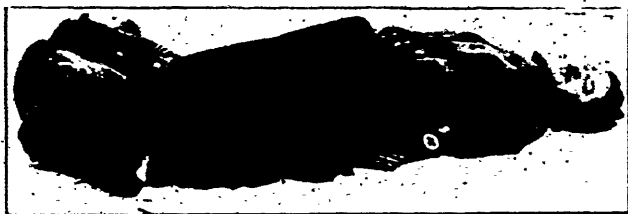


FIG. 18--SHOCK

remove them, do so, except in cases of the eye. Refrain from trying to remove that which is embedded. Simply apply iodine and dress in the usual manner.

An important feature in the treatment of wounds is to remember that shock invariably accompanies the wound, or is experienced shortly afterwards. This means that the patient's vital-



ity is lowered and his powers of resistance are weakened; therefore, your treatment has to be twofold. Treatment for shock is simply to put greatcoats or blankets on the patient, keeping him very warm, and, if necessary, applying artificial heat to his feet, or between his legs, or under his arms, by means of bottles filled with hot water and

covered with an old sock, or by stones heated for that purpose. A hot drink of tea, milk, or bovril, providing his stomach is not injured, is also invaluable. A feature, too, is to permit the patient to lie in the position that gives most comfort, unless by necessity he has to lie in some particular position.

Shock is sometimes followed by complete collapse, and the "First Aider" should closely watch the patient in order to prevent this. Should the patient show signs of collapse, if possible give him a little alcoholic stimulant. This may prevent unconsciousness overcoming him, through the quickening of the heart's action. If your efforts are unavailing, and unconsciousness supervenes, then put extra blankets over him. Should loss of blood be the cause, treat as for internal hemorrhage. *See page 47.*

In addition, do not forget the inevitable "smoke". Give the patient the fragrant weed before going very far with your treatment. It will steady and soothe his nerves, and you will be able to

**Treatment  
for Shock**

**Comfort of  
the Patient**

work more freely upon him by his attention being concentrated on his cigarette.

**Gunshot Wound in the Breast** A gunshot or shrapnel wound in the breast may cause internal hemorrhage. Dress the wound in the usual manner and treat according to his condition. See page 47.

In treating a gunshot or a shrapnel wound in the abdomen, a clean dressing should be applied to the wound in the usual manner, but the iodine should be used sparingly. Lay the patient in a comfortable position, and cover him warmly.

A bayonet, or lacerated wound in the abdomen needs extra care and skill: The patient will possibly be in a condition of collapse, showing signs as in internal hemorrhage. See page 47. Promptly lay the patient on his back; unfasten his braces; cut his pants at the sides from top to hips; carefully pull down the front, and expose the wound. If the wound is vertical, that is, pointing towards the head, dress the wound and lay the patient flat, as in the case of a gunshot wound.

**Bayonet Wound in the Abdomen** Should the wound be across the abdomen, then raise the knees, thus closing the wound; wipe it very tenderly; dress it in the usual way, using the iodine very sparingly; protect the part as much as possible; keep the knees well up by tying a puttee to the ankles (which are tied together), passing it between the

knees and across the shoulders. Should the patient show good vitality, bring up the shoulders, tying the puttee under the arms, and the tape over



FIG. 19—BAYONET WOUND IN ABDOMEN, ACROSS THE ABDOMEN, OR INTESTINES PROTRUDING

the shoulder to the ankles to prevent the bandage from slipping down. Watch him carefully,

in case he should suddenly show signs of collapse. Should this occur, let him lie down, keeping his head low, but his knees up. Do not give the patient anything to eat or drink. Should the

**Intestines  
Protruding** intestines protrude, do not attempt to push them back. Promptly cover the patient up, protecting the wound from the air, and keep his knees up as before. As an added precaution, *do not give the patient anything to eat or drink.* Keep him warm, and remove him to the Dressing Station as soon as possible, where he will have preferential treatment.

Do not attempt to remove shrapnel from the eye. Apply something very soft to the eye, such as cotton wool, if you have it, and keep in position with a handkerchief.

## CHAPTER VII

### MISCELLANEOUS

**Insensibility**—Insensibility, or unconsciousness, may occur through many causes. When you find a man in this condition, it is your business to assist him in every way. In the first place, look for hemorrhage; if it is present, stop it. If the cause is known, endeavour to remove it. If the cause is not known, after the search for bleeding, observe his pulse, breathing, condition of face, whether pale, flushed, or damp and clammy, his eyes, and his mouth. The probabilities, on the battle front, will be hemorrhage, both external and internal, shock, collapse, suffocation, concussion, and compression. The treatment of the first three has already been given on pages 47 and 53. For suffocation, if the patient is not too far gone, try artificial respiration. *See page 66.* For concussion and compression and unknown cause, ease the clothing, keep warm, raise the head and shoulders slightly if the face is flushed, and keep the head low if the face is pale. More than this you will not be able to do, except to remove the patient to the Dressing Station as quickly as possible.

**Sun-stroke**—The condition of a person over-

come by the heat of the sun will be sterterous breathing, quick pulse. skin hot and dry, face sometimes flushed, and a condition of coma or unconsciousness. Treat as follows: Remove the patient to a shady spot, strip him to the waist, and, if possible, lay him in a running stream. If this cannot be done, apply cold water freely to his forehead, the top and back of his head, the neck, spine, and wrists. Fan him vigorously. When he is conscious, give him a little cold water, nothing alcoholic. A good preventative of sun-stroke is to sew red flannel in the crown of the cap, place a handkerchief in the back of the cap to hang down protecting the neck, and face the sun. Never stand with your back to the sun, if you can help it. Also be very sparing in your use of drinking water. Gargle your throat and wash out your mouth, but do not drink, except in very small quantities, when exposed to the heat.

**Frost-bite**—Apply soft snow or cold water to the parts affected, using friction induced by the hands. Do not remove the patient to a warm atmosphere until circulation has been restored. A good preventative of frost-bite is the free application of grease to the parts exposed.

**Epilepsy**—Through the nervous strain undergone as a result of time spent in the Trenches, men sometimes develop epilepsy. The condition of the patient, when in an epileptic fit, is as follows: He will fall to the ground, foam at the

mouth, clench his teeth and fists, have convulsive moments of the head and limbs, and breathe heavily. Treat as follows: Force open his jaw and place some hard substance in it, such as a piece of wood or the handle of a pocket-knife, to keep him from biting his tongue. See that his teeth are in place, as a danger exists of pushing a false set down the throat. Loosen his clothing, raise his head slightly, and keep it still, but do not forcibly restrain the convulsive movements of the arms and legs; if you do, you are apt to tear the muscles. Fan him vigorously, and give him water or tea to drink, *when he is conscious*, but not before, as you might choke an unconscious person by trying to force liquid down his throat. Also do *not* give an alcoholic stimulant.

**Fainting**—If a man feels faint, duck his head between his knees. It causes the blood to rush to his head, thus removing the cause, and preventing, in most cases, the faint from taking place. If the faint has occurred, place the patient in the coolest spot, ease his clothing, and keep his head low. Place a cold water handkerchief on his forehead, sprinkle his face lightly with cold water, and apply smelling salts to the nose. A few minutes should see consciousness return. Then give him a drink of water and make him lie down for a period of fifteen minutes.

**Choking**—Choking is sometimes met with, and needs a prompt treatment, as generally there is

no time to fetch the Medical Officer. The treatment is as follows: Try and hook up the obstruction with your fingers. If you cannot do this, bend the patient forward, at the same time thump-



FIG 20--CHOKING

- A. Trying to remove obstacle by hooking up with finger.  
B. Thumping patient in the back.

ing him hard between the shoulders. Should that fail, stand him on his head and continue to beat him with the flat of your hand. Should non-success attend your efforts, the patient by this time being black and blue in the face, apply artificial respiration without delay. *See page 66.*



**Clothing Afire**—A man may be unfortunate enough to set fire to his clothing. Should this occur, get him on the ground: in case he runs,



A

B

FIG. 21—CHOKING

- A. Patient standing on head, back being thumped. B. Artificial respiration, patient having ceased to breathe.

trip him or knock him down. Remember that flames always rise. If the front of his clothing is burning, lay him on his back, and *vice versa*. Then smother the flames with coats or blankets.

**Scalds and Burns**—Burns and scalds, the former possibly from liquid fire, are very serious, not only because of the local injury, but because of the very great shock they give to the system, often so severe that the patient cannot successfully fight it. Treat as follows: Cut off clothing, leaving on any part that might be stuck to the body. Saturate the parts affected with any animal or vegetable oil, such as olive or sweet oil, if you can get it. Failing that, anything greasy, such as butter, lard, vaseline, or soap will do. Failing that, use flour, either dry or made into a paste. Raw potatoes, scraped, will give relief. Hot water can also be used with success. Should nothing at all be available, cover the burnt parts with dressings in strips, not in one large piece. It should be remembered that it is necessary to keep the air from the parts affected. If blisters are present, do not prick them. Protect them with something soft, leaving the rest to the Medical Staff, as there would be a grave danger of blood-poisoning setting in, if they were pricked on the field in an unskilful manner and without the equipment necessary.

**Bleeding Nose**—A nose that bleeds spontaneously is decidedly troublesome; in the majority of cases it is a complaint developed in childhood. The method of treatment that is usually effective in arresting the flow of blood is as follows: Lay down, or sit, the patient where there is an abun-

dance of fresh air; if he is sitting, place the head well back. Get the patient to open his mouth wide, and to breathe through it, instead of through the nose. Apply handkerchiefs wrung out in cold water, and place one across the bridge of the nose and another at the back of the neck. Get the patient to clasp his hands above his head. If possible, place his feet in hot water. Ease his clothing, and fan him. This should have the desired result. You can also press the finger and thumb each side of the root of the nose. It is frequently beneficial to the patient for this bleeding to occur, as it may prevent something more serious overcoming him, and thus it is really a kind of safety-valve. Remember that the nose should *not be plugged*, unless, after a reasonable test, the foregoing treatment fails. *See Figure 12.*

**Rat Bite**—The bites of rats are not by any means unknown in the Trenches. If you are bitten, do not treat the bite with indifference, but proceed as follows: At once apply a ligature, that is, a piece of string or a handkerchief tied tightly close to and on the heart side of the wound, at the same time encouraging it to bleed freely. This is to prevent the blood passing to and from the wound, as it might be poisoned. Several heads of matches placed on the wound, and then fired, will cauterize it. Next apply iodine freely to the wound. Protect the part with a dressing and get medical attention as soon as possible. This treat-

ment applies also to cat, dog, or snake bites.

**Electric Shock and Attached to "Live" Wire—**

Should a man be caught to a live wire, proceed as follows: Insulate yourself in the best and



FIG. 22. CAUGHT TO "LIVE" ELECTRIC WIRE

quickest manner possible by standing on *dry* clothing, wood, or paper. If you have dry rubbers on, you are immune from shock. A rubber tobacco pouch is also invaluable. After

insulation, that is, after, as far as possible, making yourself safe, take a stout stick for a club and strike the wire smartly, knocking it away from the patient. If this is not practicable, remove your puttee, take an end in each hand, throw the loop over his shoulders, and give a quick pull towards you. Sometimes a "flying" kick, meaning both feet off the ground together, will have the effect desired. If the patient is unconscious, apply artificial respiration. *See page 66.*

**Foreign Bodies in the Eye, Ear, Nose, and Stomach**—A piece of dirt or dust in the eye is very irritating. You can with safety, and usually successfully, treat it as follows: If the dirt is

**Eye** in the upper part of the eye, you may brush the part with the lower lashes. Or you may roll the upper lid over a match and wipe the eye out with the moistened corner of a handkerchief. For the lower part of the eye, pull out the lid and wipe the eye out as already directed.

*Never* rub the affected eye. Sometimes, however, you can make the eyes water by rubbing the sound one a little, and thus wash out the offending particle. Blowing the nose vigorously may cause the eyes to water, thus washing the particle out.

A foreign body in the ear should be let alone, as any attempt at treatment on your part may be disastrous to the patient. It is not urgent;

**Ear** let him see the Medical Officer. Should it be an insect that has crawled into the ear, drop in

a little oil, and failing that, water; this will usually float the insect out. A foreign body in the nose can, as a rule, be removed by causing the patient to sneeze, giving him a little snuff

**Nose**

or pepper for that purpose. You can also

get him to blow his nose violently; this will usually be successful. A foreign body in the stomach can

be treated by-giving the patient lots of pudding, bread soaked in water, or porridge to eat. This will have a tendency to form a coating over the object and prevent internal injury. Do *not* give a purgative.

**Stomach**

be treated by-giving the patient lots of

pudding, bread soaked in water, or porridge to eat. This will have a tendency to form a coating over the object and prevent internal injury. Do *not* give a purgative.

**Artificial Respiration**—Every soldier should know the principles of, and be able to perform, artificial respiration, as its need for use is fairly frequent, and may occur at any time. It may be needed in cases of gassing (though success here is not guaranteed), suffocation, apparent drowning, electric shock, and many other cases. Bearing in mind that *time is of the utmost importance*, do not waste any by attending to matters that are secondary, not even loosening the clothing, wiping out the mouth, or tying the tongue. The clothing can be attended to later by a comrade coming on the scene. Proceed at once to perform over the patient the following very simple movements: Very promptly lay him on his stomach, with his arms outstretched beyond his head. Place the head facing the side on which

you kneel. Or you may straddle the patient. Next place the flat of your hands square on the lower ribs, just where you can feel the "spring"; do not press in the small of the back, or with the



FIG. 23—ARTIFICIAL RESPIRATION  
A. First position. B. Second position.

points of your thumbs, a common method that is quite useless. Spread your hands, the fingers pointing to the ground, with the points of the thumbs nearly touching each other, making

your wrist joints quite flexible. See that you are kneeling well up in line with the patient's hips. Next proceed to swing your body forward, *keeping your arms stiff and not bending the elbows*. As you swing forward, count in this manner, one and two and three; then come back with a jerk counting one and two, relaxing your pressure, but *keeping your hands in position*. Do this until the Medical Officer arrives. Do not despair; success has been attained even after three hours of such work. The counting as above will mean that the movements will be executed about 12 to 18 times a minute. Understand that when your body presses over him—let your weight do the work—you are pressing the air out of the lungs, and when you relax suddenly, fresh air is sucked in by the mouth and nostrils, which by the face being on one side are free from any obstruction. When natural breathing has commenced, get helpers to rub the limbs to encourage the circulation of the blood. Do not permit rubbing until then. In the event of the ribs being fractured, as might happen when buried in debris, thus preventing the method of resuscitation as described, lay the patient on his back, place your tunic under his shoulders as a pillow, take a handkerchief and firmly grasp his tongue and pull it in and out, counting three when out, and two when in, taking care to bring it well out each time.



**Scalded Throat**—Where large bodies of men are congregated, it is to be expected that accidents and injuries will occur. In case a comrade has the misfortune to scald his throat, treat him without delay, as follows: Give a demulcent drink, such as olive oil and cold water, and place a cloth or sock wrung out in very hot water around and well covering the front of the neck.

**Rupture or Hernia**—This is very serious, and no attempt should be made by you to treat the patient, other than to rest him comfortably, with his buttocks and knees raised, and to apply cold water dressings to the affected part. This complaint sometimes comes on suddenly, bringing with it great pain, swelling, and sickness.

**Sprains and Strains**—Briefly, a sprain involves a joint, and a strain a muscle. Cold water, with a bandage around the part for support, is sufficient for a sprained joint, such as the wrist or ankle, unless in the case of the latter you are on the march. In that event do *not* remove the boot, but remove the puttee from the sound leg and pass the centre of it under the waist of the foot, crossing the instep and winding around the ankle, applying it good and snug. If the temperature of the weather permits, saturate the foot in cold water, both for relief and to shrink the puttee to give more support. Give support and assistance. *See page 90.* In the case of strains involving the muscles, if possible treat as follows:

Expose the affected part and apply cloths steeped in hot water, as hot as it is possible to bear. Test the heat with the point of your elbow. Do not let the cloths cool off even slightly; keep changing them every two or three minutes, thus keeping up the heat. Do this for ten minutes; then change suddenly to cold cloths at similar intervals for five minutes. By this time the pain will have been relieved. Finally, place bandages of some kind over the part, in order to avoid chill. If this treatment is not possible, just rest the patient in the easiest way you can and cover him up warmly, giving him a smoke.

**Polsons**—Poisoning is not a frequent occurrence with soldiers, yet one never knows when an accident of this nature may occur, either in the mess in the form of ptomaine poisoning, or by drinking carbolic acid. A very safe procedure for the "First Aider" is to observe whether the patient's mouth or lips are stained or burned. If so, do *not* attempt to make him vomit. On the other hand, if the mouth and lips are *not* stained, administer an emetic for the purpose of making him vomit as quickly as possible. For carbolic acid poisoning, give alcohol with half water, or any kind of spirit, such as whiskey; failing that, a stiff dose of Epsom Salts in milk will neutralize the poison. Then give olive oil, or a similar oil, and either strong tea, coffee, milk, or white of eggs. In phosphorus

**Carbolic  
Acid**

poisoning (rat poisoning) do not give oil. This treatment, excepting alcohol and Epsom Salts, is good for any poison, where the mouth is stained or burned. In ptomaine poisoning, the patient, or patients, will complain of pains in the head or stomach, or both, and may have acute diarrhœa and sickness, possibly at the mess, or shortly afterwards. Promptly make all who may have taken the food vomit, whether they show signs of poisoning or not. This can be done with salt and water, mustard and water, or soapy water, or by putting the finger down the throat. Get the Medical Officer as quickly as possible, and place a guard on the food suspected, thus preventing others partaking of it, and also its being destroyed before it is examined.

Morphine is naturally very largely used at the Front, and the misuse of it may cause poisoning. In this case the pupils of the eyes become very small. Should the patient be conscious, give him an emetic, that is, make him sick, if you can, using mustard and water for the purpose.

**Morphine** Keep him awake by hustling him around, a man supporting him on each side. Flick him in the face with a wet towel and apply strong smelling salts to his nose. Do this for about half an hour; then encourage him to sleep, but watch him in case he should fail to breathe. Should that be the case, apply artificial respiration. *See page 66.*

**Gassing**—The effect of the gas used by the Germans is so well-known that little need be said. There is extremely little that can be done for the victim in the way of "First Aid". It should be remembered that the gas is heavier than air, so that the first thing to do for a suffering comrade is to place him on the most elevated position possible, say, for example, on the top of the trench, provided always that the position is not exposed. Next ease the clothing, and, if the breathing is extremely faint or has ceased, try artificial respiration, though even with this success is not assured. In any event get him to the Dressing Station as quickly as possible.

**Cramps**—Cramps are not uncommon either during or after a long march. On a very hot day when exposed to the heat of the sun men are apt to drink water to excess, thus causing cramps. In the first place, the legs will be effected, then the stomach. A very simple, but efficient, remedy for cramps in the legs is to tie a piece of string or handkerchief *very tightly* over the part. This will usually give instant relief. Cramps in the stomach can be relieved temporarily by pressing the flats of the hands firmly right where the pain is felt, and then giving the patient a hot drink, such as tea, coffee, bovril, or whiskey. The application of hot flannels, if possible to obtain, will also give the relief desired.

**Exhaustion**—A man not in a perfect state of

health is likely to become "all in" and may collapse through sheer exhaustion, when on a long march and heavily equipped. Treat him as follows: Carry him to a warm, dry place and lay him flat on his back. Promptly ease all his clothing, removing his puttees and boots, and cover him up very warmly. Give him, unless he is unconscious, a hot drink.

It is well to remember to rest properly on the march, when the ten-minute halt is called. To do this lie flat on the back, with arms outstretched and legs apart, the feet being raised, if possible.

## CHAPTER VIII

### CARE OF THE FEET

Our feet, to be Irish, are in our own hands, and with care and prudence there is no reason why casualties from foot trouble should not be almost nil. In the first place, every man should report immediately should his boots be ill-fitting or in a bad state of repair, so that the Sergeant-Shoemaker can put them in proper order, or, **Boots** if not, condemn them. New boots should never be worn on a march, only those broken in to the shape of the feet being satisfactory. Also "dress" boots are banned, owing to their being too light; what is perhaps in place in the city streets is taboo as a foot covering for the soldier on the march. The issue boot should in all cases be worn.

The socks should next receive attention; only thick, clean, unended, and unbroken ones should be worn and carried when on an extended march.

Not less than two pairs should be used. **Socks** They should be changed and washed each day, and a clean pair should be put on after washing the feet. This washing should be attended to as soon as convenient after the halt for the day

has been called. It should be remembered that, before commencing a day's "hike", the socks should be removed from the feet, turned inside out, and well soaped at the bottoms, not omitting the back of the heel up to the ankle. Ill-fitting boots and "bad" socks are by far the greatest causes of marching casualties.

As regards the feet, all that need be said is that they should be washed in cold water each night before the march, and the nails should be carefully pared when necessary. This applies, of course, to corns also; only, if possible, still greater care should be taken in the paring of

**Blisters  
and Corns**

corns, in order to avoid cutting too deep. Should blisters occur, and no medical man is available to give treatment, carefully prick the blister, using a clean instrument for the purpose; then protect the part with cotton wool if you have it, first dusting the part with boric powder.

Before concluding this chapter, another matter may with profit be referred to—soreness at the crotch. See, first of all, that your underwear is smooth and free from holes, and your pants also smooth. If the latter are hard and rough at the seams, get the Sergeant-Tailor to sew a piece of soft lining over them. A little boric powder rubbed to the tender part will amply repay the trouble.

**Sore  
Crotch**

## CHAPTER IX

### TRANSPORTATION OF WOUNDED

A matter that causes grave concern at times is the difficulties of transportation of the wounded, after they have been fixed up, to a place of safety, or to the Dressing Station. A careful reading of this chapter will help solve some of these difficulties, and give to the "First Aider" knowledge in plenty to enable him to help his comrades.

Naturally, stretchers play a very large part in the removal of the sick and wounded, but stretchers are not always procurable. Very suitable ones, however, can be improvised as follows: Take **Rifle and Tunic Stretcher** three tunics and turn the sleeves inside out; then button up in the regular way. Next take two prepared rifles with bayonets and scabbards fixed, and pass them through the sleeves, which are inside the tunic. The trigger guards of the rifles should be up, and the buttons of the tunics should be on the underside, the backs of the tunics forming the bed of the stretcher. Spread them evenly the full length of the rifles. Lay a greatcoat, if you have it, on the top for greater strength. Test the efficiency





FIG. 24—IMPROVISED STRETCHERS

A. Rifles and tunics. B. Rifles and blanket.

of the stretcher before using. When ready to lift, two men on each side, do *not* grasp the bayonets, but, very firmly, the muzzles and butts,

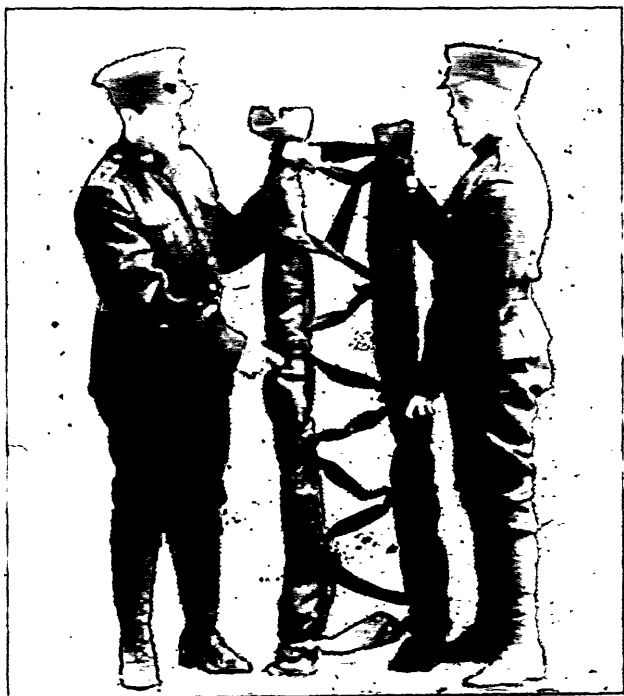


FIG. 25—STRETCHER

Rolled greatcoats with puttees laced across.

holding the hands well apart, and the arms hanging straight down. Step off with the foot nearest to the direction taken, and cross the feet at the next step, and so on.

A very useful stretcher may also be made as follows: Take two rolled greatcoats. Prevent their unrolling by securing them with a puttee at each end, and a half hitch at four points between. Next place them on the ground, the requisite distance apart, wide enough to support a man, and lace the puttees across, the first and last

**Rolled Greatcoats and Puttees** being straight across, the others oblique, securing firmly at each point. Place a greatcoat or blankets on top for added strength, and carry like a rifle stretcher. If greatcoats are not available, rifles may be laced with puttees in the same way. Two rifles and a blanket also make a capital stretcher, made as follows: Spread a blanket on the ground and place the rifles on it a sufficient distance apart to admit of the patient lying between.

**Blanket Stretcher** Then simply fold over one side flush with the rifle; then the other the same, and place the patient on it. His weight will prevent the blanket from slipping. Carry in the same way as the others mentioned. A suitable stretcher for the narrow confines of a trench, or for a sitting case, can be made with two rifles and *one* tunic, prepared as the three-tunic stretcher.

**Trench Stretcher** An extra tunic should be placed across the top for added strength, the patient resting his back against the bearer. A sitting case can also be assisted by two bearers holding a rifle in front of them, the patient sitting in the cen-

tre, his arms around the necks of the bearers.  
Again, two bearers, standing together, can

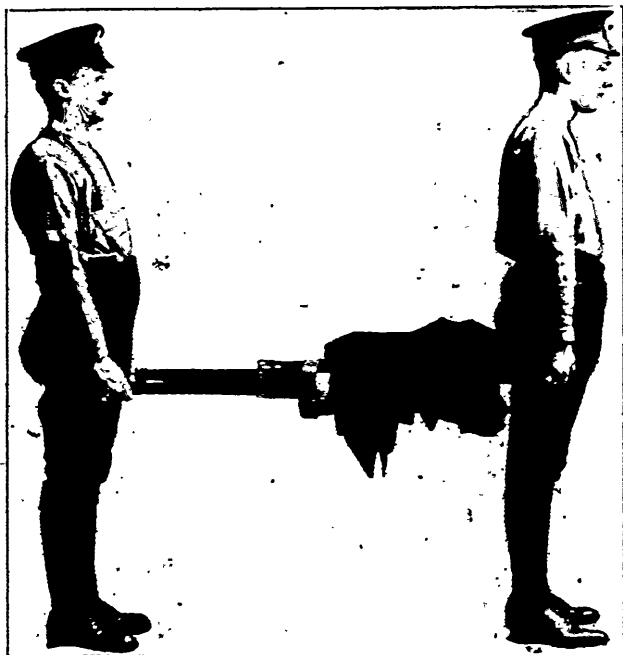


FIG. 26 TRENCH STRETCHER TWO RIFLES AND ONE TUNIC

place puttees over their *far* shoulders, allowing the puttees to dip in the centre to the height of the hips; upon these the patient can sit, with his arms around the necks of the bearers.

A knowledge of how to make hand seats is also very essential, and a little practice will make the



FIG. 27.—A. PUTTER SLING SEAT B. RIFLE SEAT

“First Aider” efficient. To make a two-handed seat, required by an unconscious man, two bearers will face each other, dovetail the right and left hands for a seat, placing the remaining hands on each other's hips or shoulders, according to the height of the

**Two-  
handed  
Seat**



FIG. 28—TWO, THREE, AND FOUR-HANDED SEATS

patient. A three-handed seat, used to carry a patient with an injured lower limb, is made by one bearer clasping his *own* left wrist; at the same time the first bearer grasps his, thus locking the three hands firmly, the backs of the hands being uppermost. The second bearer's free hand is used to support the injured limb, the patient's arms being around the necks

**Three-  
handed  
Seat**

of the bearers. A four-handed seat is more comfortable, and is easily made by each man grasping his *own* left wrist, then locking hands, the patient placing his arms around their necks.

**Four-handed Seat**

A human stretcher, as it is called, can be used for carrying a patient for a short distance only, or for placing him on the stretcher. It is made by the bearers facing each other and dovetailing the right and left hands, each extending the disengaged ones to the right; thus the hips of the patient would rest on the locked hands, the shoulders at one end, and the knees at the other.

**Human Stretcher**

When you are alone, and you have the responsibility of bringing in a patient, you have a variety of methods from which to choose, making your selection in some cases according to his injury. It is well to become proficient in them all. The fireman's lift takes precedence of all of these on account of the great distance a man can be carried, even though his weight may be considerably more than that of the bearer. In addition, a man can be lifted from the ground with comparative ease without the slightest strain. Proceed as follows: Turn the patient on his stomach, placing his arms to his sides. Stoop; put your hands under his armpits and draw or push him up on your knees. Embrace him snugly around the waist, and stand erect; he is now on his feet.



FIG. 29—FIREMAN'S LIFT, SHOWING THE SIX POSITIONS.



Quickly grasp his right wrist with your *left* hand, stoop, pushing your *right* hand between his legs, your *neck* against his *thigh*, at the same time putting his arm over your head; the patient in the meantime has fallen across your shoulders. Rise to the stand-

Fireman's  
Lift



FIG. 30—THE SACK-LIFT

ing position and change his wrist from your left to your right hand. The *key* to the successful use of this lift is in getting your *neck* snug to his *thigh*; there is then no pulling on the shoulder. Should the patient be in such a condition that he cannot

be kept up for the brief period necessary, his knees giving way under him, commence by *kneeling* in front of him and raising him to his knees as described; then bend your body, passing your right arm between his legs, allowing him to fall over your back as before described. By thus getting *under* him, you can with care rise to your feet and move off, grasping his wrist as before.

Another good lift is the sack lift, carrying a man just as you would a sack of flour. Get the man on his feet, as in the fireman's lift, then grasp him firmly by the neck of the tunic squarely in front with the right hand. You are, of course,

**Sack Lift** facing him; now duck your head under your arm, bending your knees in so doing, and quickly turn your back to the patient, whom you are half dragging on your shoulders. If nicely balanced, he can be carried a considerable distance.

The baby lift is very simple and effective for short distances in the case of certain abdominal wounds. Let the patient put his arms

**Baby Lift** around your neck, you placing one arm across his back, and the other under his knees, throwing his weight as much as possible on your chest.

The back to back lift, too, is a fairly good one. Proceed as follows: Place your back against that of the patient; then stoop, placing your hands under his armpits,

**Back to  
Back Lift**



FIG. 31—LIFTS

A. Pick-a-back. B. Back to back. C. Baby. D. and E. Shoulder lift. F. Pick-a-back with rifle seat.

not around the arms, and drag him on your shoulders, the patient keeping his head *well back* to assist in the balance.

The shoulder lift is a capital one when out of danger behind the lines. Get the patient to open his legs. Stoop behind him and place your head between his thighs, permitting him to sit on your shoulders—just the same as you would carry a little child. The patient puts his feet behind your back to keep his balance.

**Shoulder  
Lift**

The pick-a-back lift needs no description. To make it as easy as possible for the bearer, the patient must let his weight hang well forward. If his arms are hanging down, it will make the lifting easier. To enable the bearer to have his arms free, fold a tunic around the centre of a rifle and tie a puttee to each end, passing the puttee over the shoulders similar to carrying a pack. Have the rifle in line with the belt. The patient can then sit on the tunic, his legs being over the rifle, and his arms around the neck of the bearer.

**Pick-a-back  
Lift**

The fore and aft lift is a good one for two bearers, and is also very simple. One bearer places himself behind the patient and clasps him under the armpits across the chest. The other opens his legs and stands between, his back to the patient, and stooping, grasps his legs. The front bearer steps off with

**Fore and  
Aft Lift**

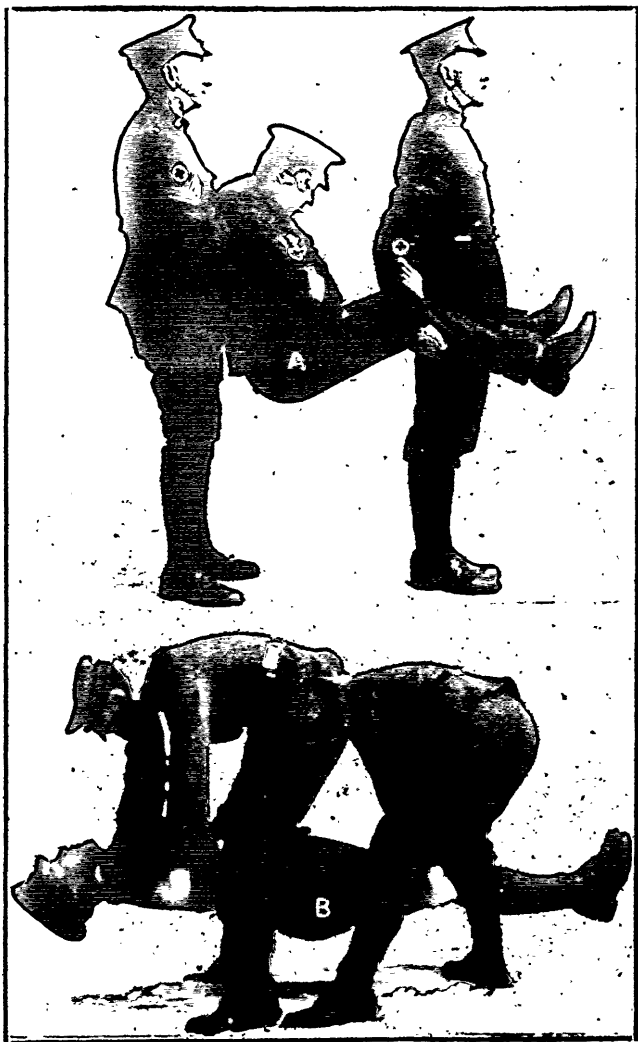


FIG. 32—LIFTS

A. Fore and aft. B. Trench lift.

the left foot, and the rear bearer with the right.

The trench lift is also necessary to know on account of the difficulty experienced in lifting a man in a narrow space. Place the stretcher, if possible, at the patient's head. Both bear-

**Trench  
Lift**

ers step over the patient, one being over his shoulders, the other over his hips.

When so placed, they lock their hands under the patient's back and loins. The rear bearer places his left toe against the front bearer's left heel; he then gives the command to advance, which the front bearer will proceed to do, taking three or four *short* steps. He will then halt, while the rear bearer moves forward and takes up his original position. When over the stretcher, carefully lower the patient.

A rifle crutch is decidedly useful to the man who is suffering from a fractured or crushed foot, or a sprained ankle. Suspend the foot in a puttee sling, hanging from the shoulders, the patient placing the butt of his rifle under the arm, with the muzzle to the ground.

**Rifle  
Crutch**

A man, if no crutch is available, can also assist a comrade with an injured foot to walk or hop to the Dressing Station. The patient should place the arm corresponding to the injured

**Human  
Crutch**

foot over the shoulders of the bearer, who will grasp his wrist. The bearer at the same time should grasp firmly the hip of the patient's pants to get a good hold, thus enabling

him to take off a considerable proportion of the weight of the patient, who, thus assisted, can hop to the desired haven.

Collection of the wounded under fire is a haz-



A

B

FIG. 33 A. RIFLE CRUTCH B. SUPPORT FOR LAME PATIENT

ardous undertaking, especially across the fire-swept "No Man's Land". Naturally the less the exposure the greater the immunity from danger, and the consequent increased chances of success. *Remember*, in case you are called upon to bring



FIG. 34. COLLECTING WOUNDED UNDER FIRE.

A. Patient on back of bearer. B. Patient on trench shovel.

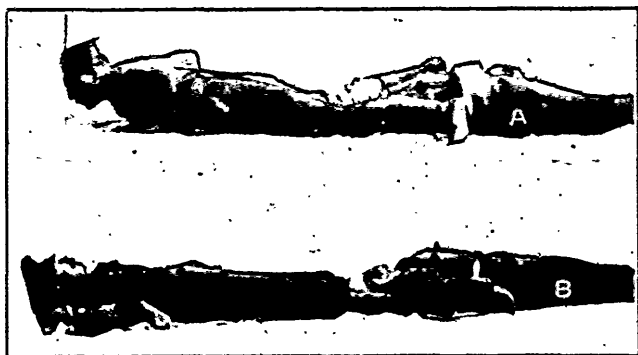


FIG. 35. COLLECTING WOUNDED UNDER FIRE.

A. Puttees fastened to feet of patient. B. Bearer's feet under armpits.



in a wounded man, to keep yourself *flat* on the ground, and move only by crawling on your stomach. After reaching your man, stop any bleeding as quickly as you can and drag him into a shell-hole for further "first aid" treatment that may have to be done on the spot. Do this, even if it is only to tie his legs together or his arm to his body in the event of fractures. You can then place him on your back and crawl in with him, using all the shell-holes possible. Also you can place his hips on a spade, and, grasping the handle, steadily pull him to safety. Again, you can attach puttees to his belt at the back, fastening them to your own belt, or to your shoulders, and drag him in that way. Again, you can unfasten the collar and the first two buttons of the tunic and grip the collar at the back and pull. If a comrade can assist you, get him to hold fast to your ankles, especially when you draw the patient to you, thus easing the strain very considerably. By this method much quicker progress can be made. Again, you can lie on your back, place your feet under his armpits, and work yourself along on your back.

**Collecting  
Wounded  
Under  
Fire**

# PRICE LIST

## Military Books for Officers and Men

Guard Duty, illus	.15	Map Reading, Notes	10	Notes of Visual Training,	
Duties for All Ranks	.15	on, 1915		and Judging Distance in	
Drill and Field		Musketry Regula-		Relation to Musketry, by	
Training	.30	tions, Part I	.25	S M J Bostock	20
Signalling	.30	Part II	20	How to Instruct in	
Field Entrenchments	.30	Military Law, Man-		Aiming and Firing	20
Ceremonial, Camps,	Bil-	ual of	85	Hythe Musketry	
lets and Cooking	.30	Optics, Notes on	20	Course Made Easy	.30
Musketry	.30	Physical Training,		Guide for the 303-in	
Physical Training		Manual of	25	Vickers Machine Gun	.20
(Senior)	.30	Signalling Training		Range Finder and Slope	
Machine Gun	.30	Manual, Part II	25	Card, Capt. Young	75
Otter's Guide	1.00	Training and Manoeuvr		Lectures and Lessons on	
Company Drill, illus	.15	Regulations	15	Musketry Instruc-	
Squad Drill, illus	.15	Telephone Cable		tion, Martian	60
Battalion Drill, illus	.30	Drills, Artillery	.05	Rifle Exercises Made	
Ross Rifle Exercises	.05	Telegraphy and Telephony		Easy (applicable to	
Ross Rifle Handbook	.35	Instructions in—		all Arms)	.20
What Every Soldier		Vol. I., Instruments	50	Musketry Teacher	.30
Ought to Know	.10	Vol. II., Lines	.30	Strategy in a Nutshell,	
The Guide, Otter &		Trumpet and Bugle		Capt. F. F. Boyd	45
Lang	1.50	Sounds for the Army	.25	Signaller's Pocket Book	
Complete Guide to Mil-		Veterinary Manual,		of Practical Hints and	
itary Lectures, Wood	45	War	.05	Notes on Army	
Musketry Instruction, with		Yeomanry and Mounted		Signalling	.20
Ross Rifle Dia-		Rifle Training	.20	Somewhere Simplified, or	
grams, Hewitt	.40	Rapid Training of a Com-		"How to Learn It	
Animal Management	.65	pany for War, by Cap.		in a Few Hours"	.20
Artillery Training,		A. P. Birchall	50	Field Gunners' Catechism,	
Field	.25	Catechism on Field Train-		by Lieut.-Col. A.	
Bayonet Fighting,		ing (Inf.), Col. O'Don-	110	T. Anderson	.45
Instructions in	.05	nell, West Yorks		Tips for the Front: What	
Cavalry Training	.35	Syllabus of Infantry		to Do, and What to	
Cyclist Training	.10	Training, Lt.-Col.		Avoid on Active	
Company Training,		Hay	1.00	Service	.20
Notes on, 1914	.05	Guide to the Examination		Fire Problems, by	
Cooking, Military,		for Promotion for		Maj.-Gen. Filcher	.45
Manual of	.20	Non-Coms.	1.00	Hints on Training	
Explosives, Treatise		Squad, Section, Platoon		Territorial Infantry	.45
on	.50	and Company Drill		Soldiers' Night Guide	.10
Engineer Training	.20	Made Easy	.45	Trumpet and Bugle	
Engineering, Field,		Notes on Training,		Sounds for the Army,	
Manual of	.25	by Lt.-Col. Papineau	1.25	with Words, also	
Field Service Regu-		Rifle and Sword Exercises,		Bugle Marches	.30
lations, Part I	.25	ill., showing the plat		How to Qualify Made	
Field Service Regu-		and wrong positions	.35	Easy, by Sergt.	
lations, Part II	.35	Fire Discipline: Its		Inst. Prowse	.50
Field Service Pocket		Foundation and		Army Physical Drill, by	
Book	.35	Appliances	.70	Sergt. Inst. Coleman	.35
Flying Corps Training		Tactical Problems,		Encampments Made	
Manual, Part I.,		by Lt. Col. J. Lay-		Easy, illus.	.30
Royal	.35	land Needham	1.00	Hints to Young Officers,	
Flying Corps Training		Military Law Made Easy,		by an Adjutant	.30
Manual, Part II.,		by Lt. Col. S. T.		The Soldier's English-	
Royal	.15	Banning	1.25	French Dictionary	.05
Guns, 18-Pounder, Land		The Summary Power of		The Soldier's English	
Service, 1914	.35	the Commanding		German Dictionary	.05
Guns, Machine and Small		Officer	.20	Roll Book for (Double	
Arms, 303-inch	.10	Power of the Com-pany		Company) Infantry	.30
Hygiene, Manual of		Commander	.20	Roll Book for (Platoon	
Military	.20	Organization, Administra-		or Section), Infantry	.20
Infantry Training,		tion and Equip-		ment Made Easy	1.25
1914	.25	Military Map Reading	.30	Pay-Sergeant's Complete	
King's Regulations and		Notes of Lectures		Account Book, to last 12	
Orders for the Army	.35	on Map Reading	.30	months, for 80 to 240	
Medical Corps		Organization, Administra-		men, arranged for home	
Training, Army	.25	tion and Equipment,		and foreign service	2.50
Map Reading and Field		by Col. Lang	1.00	Some Lectures and Notes	
Sketching, Manual of	.35			on Machine Guns,	
				by Major Charters	.50

THE T. EATON CO. LIMITED  
TORONTO CANADA

**SIMPLE****EASY****EFFICIENT****Fully Illustrated****BRITISH****Cloth, 60 cents**

# **THE BRITISH MANUAL OF PHYSICAL TRAINING**

By **LIEUT. C. F. UPTON, R.A.M.C.**

**T**HE AUTHOR, who has had world-wide experience in Physical Culture under Japanese and Indian Professors as well as the most prominent European experts, has concentrated into this book all that is essential for the knowledge of modern physical culture.

A British system by a British Officer.

**MACMILLANS Publishers TORONTO**

## **WREYFORD & CO.**

**85 King St. West Toronto**

**Military and General Outfitters**

**Wholesale Prices for Battalion Orders and  
Canteen Supplies.**

Khaki Flannel Shirts ..... \$1.75, 3 for \$5.00.

"Aertex" and Woolen Underwear and Pyjamas

Khaki All-wool Socks ..... \$4.50 doz.

Dark and Mixed Gray Socks ..... \$3.75 d. z.

Sole Agent for the "Tress" Service and Trench Cap.

Aviation Caps and Chamois Vests.

- Official Trench Coat interlined oilsilk, detachable fleecelining ..... \$35.00

English Leather Leggings and Spurs.

Fox's F.I.P. Puttees ..... \$21.00 doz.

**PHONE ADELAIDE 1739**

