PAGES

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OF CANADA

OFFICIAL PROCEEDINGS

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PROCEEDINGS OF THE CENTRAL RAILWAY AND ENGINEERING CLUB OF CANADA MEETING.

COURT ROOM No. 2, TEMPLE BUILDING, TORONTO, Mar. 25, 1913.

The President, Mr. A. M. Wickens, occupied the chair.

Chairman,—

The first order of business is the reading of minutes of previous meeting and as you have all had a copy it will be in order for someone to move that they be adopted as read.

Moved by Mr. Baldwin, seconded by Mr. McRae that the minutes of the previous meeting be adopted as read. Carried.

Chairman,—

The next order of business is the remarks of the President.

I have no very lengthy remarks to make to-night.

During the past few days I have made enquiries about the health of our Past-President, Mr. Bannon, who has been sick for a long time, and I am glad to report that he is getting better. He has been very seriously ill with heart trouble.

I want you to bear in mind that we purpose making these meetings a little more interesting than they have been. We hope next month to be able to put in half a day at the Gas Works. It is admitted that we have in Toronto the finest gas works on this continent, and some contend the finest in the world. As everybody uses gas, more or less, there are none of us who would not be interested in seeing a gas plant. I have a letter from Mr. Jefferis which states that he will be pleased to see the members of the Club any Saturday afternoon that would be convenient to them. The Committee will, therefore, make arrangements for this for about the middle of April, when the weather gets a little nicer and we will then visit one or both of the gas plants.

We also want to increase the usefulness of our Journal, and we propose to have one page devoted to Club notices. I think it would be an advantage to have a page devoted to Club notices, little newsy items that would be of interest to all the members and if anyone has anything of interest to the members and will forward the item to the Secretary same will be inserted. We are endeavouring to make the Journal more interesting and we also want to try and increase the revenue of the Club by increasing the advertising. You will readily

understand that the dues you pay into the Club do not begin to pay for the cost of publishing the Journal and distributing it to the members, and it is on account of the advertisements appearing in the Club Journal that we are able occasionally to have the pleasant gatherings that we do at such small cost to the members, it is therefore up to the members to take note of the advertisements appearing in the Jouranl and whenever possible buy from the advertisers. If there is anything that you want that is advertised in the Club Journal, give the advertiser a chance to get your business, at least enquire the prices and do not forget to mention the Club Journal, in this way you will materially assist the Club.

I received a letter from Messrs. Rice Lewis & Sons, calling attention to the fact that they have now gone into their new store on Victoria Street, a few doors above King, and asking me to call the attention of the members to this fact.

I also received a letter from our esteemed Past-President, Mr. Jefferis, thanking us for sending a wreath for his late lamented mother. That is about all I have to say to the members to-night.

The paper for to-night is on "First Aid to the Injured," by Dr. Cannon, of Stratford, and the paper for the next meeting will be on "Walscheart Valve Gear," by Mr. Duguid, of the Kingston Locomotive Works, and Past-President of the Club, which I know will be interesting to all of us.

The next order of business is the reading of list of new members.

Mr. Baldwin,—

Before going on with that order of business, Mr. Chairman, I would suggest that you get the Executive Committee to work as early as possible on the proposed visit to the Gas Works so that the members may be notified on the card that is sent out in reference to the next meeting.

In regard to the illness of our Past-President, I would move that the Executive grant a small sum for the purpose of sending a few flowers up to Mr. Bannon's house, as I know that Mr. Bannon would appreciate this very much, as it would intimate to him that while he is not with us we have not forgotten him.

It was regularly moved and seconded that this suggestion be carried out, and unanimously approved.

NEW MEMBERS.

Mr. A. Lichtenhein, Rep. Franklin Railway Supply Co., Montreal.

Mr. G. H. Elwell, Canada Foundry Co., Toronto.
Mr. W. N. Forbes, machinist, Consumers' Gas Co., Toronto.
Mr. J. McLaren, Engineers' Clerk, Canada Foundry Co., Toronto.

MEMBERS PRESENT.

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C. H. Stainton
J. McWater
N. A. Davis
A. Harris
J. Kelley
J. Alcorn
T. B. Cole
L. Salter
J. V. Jackson
B. T. Riordan
A. R. Taylor
A. M. Wickens
W. McPhee
F. R. Wickson
S. Pearson
L. S. Hyde
W. R. McRae
J. Morris
T. J. Ward
G. H. Boyd
J. E. Rawstron
J. Anderson
T. Patterson
W. W. Garton
E. A. Heden
J. T. Fellows
J. M. Clements
J. McLaren
J. Barker
J. Choyce
W. C. Sealy
H. Eddrup
C. L. Worth
D. A. McRae
F. Smith
G. Baldwin
J. Herriot
H. Tattersall
Jas. Anderson
G. P. Beswick
W. Dennett
D. Cairns
E. Logan
F. Slade
D. Campbell
O. A. Cannon
C. Wilson
W. J. Jones
J. Cooper

Chairman,—

We have with us this evening Dr. Cannon, of Stratford, who has come prepared to give us a paper on "First Aid to the Injured." This is a subject which appeals to everybody. It does not matter what our occupation is. We do not know that at any moment we may be called on to help some poor fellow who has met with an accident and possibly be able to save his life by being able to render efficient "First Aid."

I am sure that the paper will be entirely satisfactory and interesting to every one of you, and I have much pleasure in calling on Dr. Cannon.

FIRST AID TO THE INJURED.

BY DR. O. A. CANNON, STRATFORD, ONT.

I shall use the time at my disposal to present this subject more particularly in its application to the injuries received at the various industries represented at this Club, and also to outline briefly what preparations are necessary to successfully carry out First Aid work in these industries.

In the first place, what do we mean by First Aid? It is the intelligent application of correct surgical principles to the immediate treatment of those injured or taken suddenly ill. To be successful, it is not necessary to have the extensive knowledge of anatomy and of disease and its treatment required of a medical man. All that is necessary, after acquiring a few of the cardinal principles of First Aid, is to be observant, tactful and discriminating in making up one's mind as to the nature of the injury, and then prompt, confident and resourceful in the methods used to render aid.

Why is the subject important? The report of the Department of Labour for January of this year shows a total of 491 industrial accidents of which 100 were fatal. The largest number of fatal cases were under the headings of mining and railway service, and of the non-fatal cases the greatest number occur in the steam railway and metal services. This is a record of the reported cases for one month only. Multiply it by twelve and add to it the numerous cases not reported and you have a tremendous list for a year. In spite of all precautions taken for the safety of employees these accidents will continue to occur, and as the industries of this growing country increase, the list of industrial accidents will continue to expand in proportion. It is certain that the loss of life, suffering, and loss of time occasioned by these accidents would be materially reduced if men competent to render prompt and intelligent aid to stricken ones were found in every foundry, machine shop, blacksmith shop, wood working shop, mine and industry, where men are employed exposed to accident. First Aid instruction in industries is invaluable for the following reasons: (a) Instances are multiplied where lives are saved by the timely application of First Aid where the injury is so serious as to put the injured in danger of immediate death; (b) a long time must necessarily intervene before a medical man can be got to the spot, and much suffering is saved the patient if some one in his vicinity is in

a position to help him and make him comfortable. If much suffering is associated with a case, even if otherwise trivial, the shock becomes an important factor in retarding his recovery, while in more serious cases, this shock may cause the death of the injured; (c) intelligent first care of wounds means their prompt healing, while neglect of them means infection and delay. First Aid treatment is a factor in cutting short the length of time a man is laid up and this is an advantage to the injured and to his employer; (d) countless minor ailments receive all the treatment necessary from the First Aid man and the injured returns to his task. Without this advantage he is forced to seek his doctor or neglect the injury. Evidence is furnished on this point by a gentleman in charge of this work in a Stratford industry. His statement is that of some 350 consecutive cases brought to him, he found it necessary to take only 19 to the doctor.

The short time at my disposal prevents my entering fully into the treatment of all injuries. I shall merely state a few general principles which are vital to proper treatment. When these principles are indelibly fixed on the mind it is easy for a resourceful man to apply them to the case in point.

GENERAL DIRECTIONS.

1. Remove the cause of injury. Strange to say this is often neglected, and the injured is left in contact with moving machinery, escaping steam, an electric current, a revolving drill, fire or other agent which continues to exert its harmful influence.

2. Severe hemorrhage must receive our first attention no matter what else is injured. The blood is the life stream and its loss in quantity results in death.

3. Air. See that there is no obstruction to the air passages and that the injured has fresh air. Keep the crowd back. If respiration has ceased, it may be necessary to carry it on artificially.

4. Rest. Put the patient in a position to rest, and see that the injured parts are supported so as not to give pain.

5 Summon medical aid. If the condition seem to warrant it, send some one for a doctor at once, and have the messenger acquaint the doctor with the condition present.

6. Wounds. Cleanse and dress all wounds.

7. Removal of clothing. Only remove the clothing that conceals injured parts. Slit up the seams of coats, trousers, and shoes to secure their removal without pain to the injured.

8. Stimulation. Avoid giving alcohol unless ordered by a medical man. Give tea, coffee, milk, sal volatile. Sprinkle

the face with water, and apply warmth to the heart and stomach and friction to the limbs.

9. Warmth. Keep the body warm. See to this even in summer.

FRACTURES.

The varieties are important because by a description of these we learn the importance of First Aid treatment of fractures.

A. Simple; where the bone is simply broken with little injury to the surrounding tissue.

B. Compound; where in addition to the broken bone the skin over the fracture has been broken either by the force applied or by the ends of the bone being forced through the skin. This is a serious variety because germs may enter at the wound and cause blood-poisoning, or the formation of pus or may interfere with the union of the bone.

C. Complicated; where in addition to the broken bone some important structure in the neighborhood has been injured, e.g., nerves, arteries or organs. When nerves are torn paralysis of the muscles supplied by the nerve often results and when arteries are injured dangerous hemorrhage may occur or if the circulation to a part is entirely cut off gangrene may be the result.

The important thing to remember is that by careless handling of a simple fracture it may become compound by the jagged ends of the bone being forced out through the skin, or it may become complicated by the sharp bone cutting an artery or nerve piercing the lung, bladder or other organ. Thus we see that the first duty of anyone rendering First Aid in these cases is to prevent all movement of the broken bone on the part of the patient himself or of the bystanders. Another variety is called impacted. This occurs where the ends of the bone are forced into each other and a solid union results. In the robust this impact is reduced because the limb is shortened and is not as useful. But in the old where non-union is common, an impacted fracture is considered a happy result. The old person gets in this way a solid union which he would not get in all probability in the ordinary way. Careless handling of one of these fractures may undo the good work.

The signs of fracture are pain, loss of power, swelling, deformity, unnatural mobility at the site of fracture, and crepitus which is the name given to the grating of one fragment of bone on the other, this grating being felt or heard.

In the treatment remember the object is to prevent the fracture becoming more serious. Proceed as follows:

1. Attend to the fracture on the spot. No matter how crowded the street or how busy the factory do not move the injured until the fracture is secured.

2. Immediately grasp and support the injured limb. This prevents harmful movement of the limb.

3. Still retaining the hold on the injured limb, carefully straighten it and if shortened draw upon it steadily and firmly until it is the same length as its fellow.

4. Still holding the limb have it secured in splints and bandages.

A splint to be of use must be (a) firm enough to support the limb, and (b) long enough to extend beyond the joint above and the joint below the fracture and immobilize both. Thus, if the leg is broken below the knee the splints must be so contrived as to keep the ankle and knee joints quiet. If the forearm is injured, the finger and wrist joints are fastened to a splint and the elbow is secured in a sling. If the thigh is injured it is necessary to immobilize the knee and hip joints. As the hip cannot be secured unless the body is kept horizontal a splint is used passing from the arm-pit to beyond the heel to which the body and limb are bound. It is better to have assorted lengths of board made and on hand, but in their absence use any available material as umbrellas, canes, pickets, folded papers, etc. One leg will act as a splint for the other. The arm can be bound to the body, the lower jaw to the upper, etc. For bandages, the best, of course, is the triangular bandage, but in its absence use neckties, handkerchiefs, towels, ropes, etc. The splints must be applied firmly and yet we must see that they do not constrict the limb so much that the blood supply is cut off because in that case gangrene may be the result. In the case of the collar bone which is often broken, the shoulder falls inward and forward. The collar bone acts as a tent-pole. In order to properly treat this fracture the shoulder is kept out by means of a pad placed in the arm-pit. Then the arm is secured to the side by means of broad bandages. The shoulder should be drawn backward and when this is done the arm sling is applied. Remember the importance of the arm sling which should be used to support the arm in all cases of injury to the arm, forearm, and hand. Bend the arm at the elbow in all cases as this is the easiest position and the one in which it will be secured by the doctor when he comes.

5. Attend to wounds. Cleanse and apply a clean dressing to all wounds.

6. Do not attempt to move a patient who has had a fracture of the skull, spine, pelvis, thigh or leg, unless recumbent and in the proper manner.

7. If in doubt as to whether an injury is a fracture, be on the safe side and treat it as one.

DISLOCATIONS.

The signs of this condition are the same as fracture except that the joint is fixed and that crepitus is absent. The swelling is at the joint and the limb is numb from pressure on the nerves in the vicinity. The treatment consists in leaving it alone except to support and make the patient comfortable. When the patient is to be moved secure the injured limb so as to save the patient pain from jolting. A doctor should be called promptly.

SPRAINS.

The signs of this condition are pain at a joint following a twist or wrench, swelling and inability to move the joint. If out of doors do not remove the clothing, but bandage tightly over them. When the patient has reached his home, remove the clothing (cut the laces and rip up the back seam of the shoe), and apply cold cloths until they cease to give relief and then change to hot ones, which should be continued as long as they allay the pain. Elevate the limb and support it on a cushion.

STRAINS.

Severe strain of lifting often causes tearing of the fibres of the muscle. Great pain is the result. Keep the patient perfectly quiet and apply hot applications to the painful muscle.

HEMORRHAGE.

Hemorrhage may be of three varieties, viz., arterial, venous, and capillary according to the vessels injured. If an artery is injured the blood is bright red in colour, comes from the wound in spurts corresponding to the beats of the heart and also from the side of the wound nearest to the heart. Venous bleeding is dark red in colour, continuous in flow and comes from the side of the wound farthest from the heart. Capillary bleeding is the continuous oozing of bright red blood. An artery may be injured deeply and no spurting is noted on account of the depth of the wound. When large vessels are cut we have the situation where First Aid instruction will save life if the knowledge is properly applied. A person with a vessel of any size severed and in the large arteries of the thigh and neck will die in a very few seconds, unless the assistance is immediate and according to knowledge.

Proceed as follows:

1. Have the patient sit or lie down. It is a matter of common observation that the heart beat is less forceful in the recumbent position and hence less blood is forced from the wound. In the erect position loss of blood soon tells on the brain which is situated so high. Loss of consciousness quickly follows.

2. Elevate the part. Blood, like water, will not run up hill and in following this well known principle of physics the force of gravity is acting against the force of the heart and less blood escapes. In varicose bleeding the flow is often completely checked by this method.

3. Expose the wound. Remove the clothing over the wound as rapidly as possible so that you may see the extent of the injury and how best to treat it.

4. At once apply pressure to stop the hemorrhage.

(a) If the wound is small apply pressure with the fingers directly on the wound. Then after cleansing, substitute for the fingers a pad of dressing and a bandage applied tightly enough to stop the bleeding.

(b) If the wound is large and the method just mentioned fails to secure the cessation of hemorrhage pressure must be applied on the "pressure point." By this I mean the point in the vicinity, and in the case of arteries on the side of the wound towards the heart, where the severed vessel can be pinched and the flow of blood through it stopped. For example, if the upper part of the thigh is severely wounded, apply pressure with one thumb over the other at the middle of the fold of the groin where the femoral artery comes out over the bone. In this situation the hold must never be relaxed as there is no appliance which will properly hold the artery in this place. The same is true of the carotid artery in the neck. Pressure must be made against the back-bone behind, and it is necessary to apply pressure above and below the wound because of colateral circulation. By this is meant that the blood from the sound side of the neck is forced across to the other side and comes from the end of the cut artery farthest from the heart. The wrist and hand is another situation where the collateral circulation must be borne in mind. If the upper arm is cut pressure is made on the brachial artery at the inner side of the biceps muscle as it lies next the bone. One could go on and ennumerate the various places where pressure could be made to stop hemorrhage, but it is sufficient for the purpose of this paper to say that nearly every region of the body has its pressure point or points, and it is the duty of every student of First Aid to put himself in possession of the knowledge of where these points are. Having found the pressure points with the fingers, and the bleed-

ing being controlled, now substitute for the fingers one of the following devices:

(a) Make a pad to fit over the vessel (pressure point), and secure by means of a bandage around the limb. Tie this firmly and if that does not stop the flow of blood insert a stick and twist until there is no longer any blood flowing. To make a pad take a handkerchief and fold it in from the corners until a firm pad is formed. Put a stone or piece of wood in the centre if necessary. In some cases where there is difficulty in securing the artery at its pressure point it is good treatment to apply the pad and tourniquet just spoken of directly on the wound first taking the precaution to see that the pad is clean.

(b) An elastic band or tourniquet which when tightened stops all blood getting into the limb. This is an excellent way to secure hæmorrhage and an elastic tourniquet should form a part of all First Aid equipment. It can be applied promptly and is effectual. Its disadvantage is that as no blood reaches the limb thus constricted, death of the part may result if the constriction is continued too long. The pad and bandage spoken of only applied pressure on the bleeding artery and the blood continues to enter the limb through other channels.

5. When the flow is checked, remove foreign bodies without searching or probing for them.

6. Cleanse the wound with hot water and disinfectant if available. Gasoline is one of the best and handiest disinfectant and is especially useful where there is much grease in the wounds. Iodine is also good. Now apply a clean gauze pad and firmly bind it on. If you have fear that there are still foreign bodies in the wound or that a compound fracture is present do not bind tightly.

7. Support the wounded limb. Apply splints in some cases in order to give comfort.

8. If there is severe wounding without bleeding, it means that the arteries have been temporarily occluded by the bruising and it is wise in these cases to have the means of controlling the hemorrhage in place although it is not necessary to tighten it up.

9. Do not disturb blood clots. That is nature's way of sealing up vessels.

10. Flexion, is a method of stopping hemorrhage in some situations. At the knee and elbow place a firm pad in the fold and forcibly flex the leg and forearm. The popliteal and brachial arteries are pressed upon.

11. Venous hemorrhage is generally secured by elevation and direct pressure on the wound. If this fails remove all

constrictions towards the body and find the pressure point on the vein below the wound.

12. Capillary hæmorrhage is controlled by direct pressure and a bandage.

13. Internal hæmorrhage. Rapid loss of strength, giddiness, faintness, sighing, pallor, hurried breathing and failing pulse are the signs. The treatment is to put the patient in a recumbent position, remove constrictions, secure air, sprinkle the face with water, no stimulants, ice over the region of the hæmorrhage if known, raise the feet and bandage the limbs. Hæmorrhage from the lungs and stomach are treated in the same way.

BURNS AND SCALDS.

Burns are caused by dry heat such as fire, hot metal, electric current, corrosive acid or alkali, or friction from moving machinery.

Scalds are caused by moist heat as hot oil or water.

The treatment consists in carefully removing the clothes from the burn. Cut away all that will come away easily and leave the rest. Do not remove the blisters as this is nature's protection. Immediately cover the part with oil—the best is Carron oil, a mixture of linseed oil and limewater. Failing this any bland oil will do. If the wound is large put on strips of lint or gauze soaked in oil as these come away more readily and with less pain than if large pieces of the material were used. In the absence of oil immerse the part in warm water in which has been put some baking soda. The object is to keep the raw surface and the tortured nerve endings away from the air and the soda solution serves that purpose until the oil can be secured. Cover the oil dressings with cotton and bandage carefully. Endeavour to hasten these steps so that there will be short exposure to air. Now treat the shock and hurry the patient to where he will be made comfortable. Acids and alkalis should be neutralized or the burning will continue. Use a solution of soda to neutralize the acid and vinegar for the alkali.

FOREIGN BODY IN THE EYE.

1. Prevent rubbing the eye.

2. Pull down the lower lid and if the object is visible remove it carefully with the handkerchief. Pull the upper lid outward and downward and at the same time shove the lower lid upward. The lashes of the lower lid sweep the under surface of the upper and may remove the body. If not yet successful, evert the uper lid by standing behind the patient

and rolling it over a match. If the body is now visible remove it with a handkerchief. If anything is imbedded in the eye put in a drop of clean olive oil and after binding the eye firmly send the patient to a doctor.

UNCONSCIOUSNESS.

This may be due to concussion or compression of the brain, apoplexy, epilepsy, hysteria, shock, fainting, collapse, alcoholic or other poisoning, convulsions and suffocation. For any of these causes proceed as follows:

A. If a person appears about to lose consciousness, support him gently to the floor.

B. Arrest hemorrhage if present.

C. Lay the patient in the position where the breathing is most easy—usually on the back. If the face is flushed, raise the head slightly, if pale, keep the head low.

D. Undo all tight clothing about the neck or body. Unfasten the braces, shirt and trousers in men, and the corsets in women. See that there is nothing in the throat or mouth.

E. Provide air by opening the doors and windows and keeping people back.

F. If the patient is not breathing, begin artificial respiration, and keep it up until breathing is established or a medical man pronounces him dead.

G. Send for a doctor and tell him the condition present.

H. Give nothing by the mouth while the patient is unconscious.

I. Do not do artificial respiration if the spine is injured, and do not use the arms for this purpose if they are broken. Use Schaefer's method in the latter case.

J. If the patient is in convulsions, put something between his teeth and do not hold him tightly. Remove him from the danger of striking anything and hold his head so that he cannot do it any injury.

K. When again conscious give tea, coffee or milk or water to drink unless contra indicated by hemorrhage. Allow him to sleep.

L. Do not assume that a man is unconscious from alcohol because his breath smells of it.

M. Be very apprehensive of any injury to the head. Trouble often develops hours after an injury. Provide warmth and care for these patients for some hours after consciousness returns.

N. In almost all cases of loss of consciousness it is of utmost importance to see that the body heat is kept up. Be sure to be especially careful of this after shock or injury.

O. In heat stroke follow the general rules and in addition apply ice bags to the head, neck and spine.

P. Unconsciousness from an electric current is to be treated according to the general rules. Be careful to properly insulate yourself if there is danger of the current before attempting to go to the aid of the sufferer. Use cold water and artificial respiration until breathing is restored. Treat the burns.

EQUIPMENT RECOMMENDED FOR INDUSTRIES.

In these recommendations, I am detailing the equipment of the Grand Trunk Locomotive Shops at Stratford, where there is a splendid ambulance corps in charge of Mr. Angus McPhee, and where good work is done. Their emergency boxes are scattered throughout the works and each is in charge of a competent man.

To properly conduct First Aid work the industry should be organized for this purpose. The management is recommended to select an intelligent man to be the leader of the ambulance corps and then to have him choose his class from the workmen in the proportion of one man to fifty. The men are chosen for the corps because of heir intelligence and fitness and also in regard to their position while at work so that they will be well situated to administer to the wants of their group of workmen. Of course if a smaller number of men were isolated in a room or part of the shop by themselves they should have their ambulance man. At each individual point on a railway one man should be chosen from each regular train crew to have instruction in this work. After getting the class ready application should be made to a well qualified local medical man, or better still to the St. John's Ambulance Association for an instructor in First Aid. This association will provide an instructor who will give five two-hour lectures and then an examiner will test the class. Those who are fit will receive the certificate and badge of the Association, which are recognized throughout the Empire. This will give the members of the Corps prestige and at the same time insure proper instruction of the men. If an industry is not large enough to provide a class, two or more may unite for this purpose. After the class is formed it is a good thing to meet weekly and discuss the accidents which have turned up, and thus keep the work fresh in the mind. Medical men would be pleased to be present and explain the difficulties. Each workman should know his ambulance as he does his foreman, and should go to him if injured. There is no confusion of authority and the men are requested to submit to the

instructions of their ambulance man, as he in turn submits to his leader.

Each man in the corps should have a locked box 12x12x7½ inches, fitted as follows:

Absorbent cotton, several small packages in their pasteboard boxes. Large packages get much soiled before all is used, which means waste.

Plain gauze, several packages in their containers so that some can be cut off and the remainder remain in the box protected from the dirt. Gauze makes a better dressing than cotton as it can be more readily removed from the wound.

Triangular bandages, two.

Roller bandages, 3 inch and 2 inch, half dozen.

Carbolized oil or vaseline, four ounces. This prevents the dressing being glued to the wound with the blood and secures the easy removal of the dressing.

Creoline or carbolic acid, four ounces. This is of course useless unless there is a supply of hot water.

Gasoline, four ounces, where there is no exposed fire and where the wounds are greasy and dirty.

Carron oil, eight ounces, where there is chance of burns.

Pair of scissors.

Adhesive plaster.

Friar's Balsam.

Tourniquet (elastic) where there is danger of severe wounds.

Olive oil, two ounces, for the eyes.

It is better to have a small supply in these boxes, as it soon gets soiled. The store should be replenished from the large box kept in a convenient place in a tool room or office. This box is equipped to supply all that is needed in larger accidents and a physician is able to attend to any injury from the supplies contained in it. The following contents are found in the box:

Sal volatile, spirits, four ounces.
Zinc ointment, four ounces.
Carbolic acid, four ounces.
Dressing basin.
Kidney pan.
Roller bandages, two dozen.
Triangular bandages, one dozen.
Absorbent cotton (small), one dozen.
Absorbent cotton, two pounds.
Lint packages, half dozen.
Gauze packages, one dozen.
Cotton sheet.
Towels, half dozen.

Safety pins, one package.
Plain pins, one package.
Soap.
Adhesive plaster, two yards.
Tourniquet, rubber, one.
One pair scissors, ordinary.
One pair scissors, surgical.
One jack knife.
One razor.
Three pairs artery forceps.

The dimensions of this box are 15x11x7½ inches. It is set inside a larger box which contains two pair blankets, a hot water bottle, and a number, say fifteen, half and quarter-inch boards of assorted lengths and widths. One or two boards about five feet long and four inches wide should be with the box to use in case of fracture of the thigh. In smaller industries it would not be wise to have such a large supply on hand as it deteriorates with age, but loss can be prevented by filling the small boxes in the factory from the large box and have it in turn replenished from the drug store.

Two pairs of crutches and two stretchers are a very necessary part of the equipment. The ambulance men should be trained and practised in stretcher drill until they are proficient.

Chairman,—

We have all heard Dr. Cannon's very able lecture and I am sure that if there are points that he has mentioned that you would like further enlightenment on, that Dr. Cannon will be only too pleased to help you out and clear up any difficulties you may have.

Mr. Beswick,—

I would like to ask the doctor what time would elapse after constricting a limb before gangrene would set in.

Dr. Cannon,—

That depends on how completely the circulation is shut off. However, it would not be for some time in any case. Fortunately it is almost impossible to completely shut off the flow of blood, for instance the bone carries a certain amount of blood. I do not think you need ever let that worry you, if you can get a doctor within an hour or two the limb would easily recover.

Mr. Baldwin,

In case of compound fracture. You remarked about the

bone protruding through the skin. Would you suggest that we endeavour to pull that bone back in its place?

Dr. Cannon,—

I think you should. After the bone has got through the skin it gets a certain amount of dirt on it, and by pulling it back in its place you would probably cause further trouble by infection. However, on the other hand it is very painful to leave it in that position, in theory it would not be the best thing to do, but in practice I think probably it would be the best thing to do, although you would probably infect the limb, as the end of the bone is bound to get contaminated. However, if you first cleanse it thoroughly there is no reason why it should not be replaced. If the end of the bone were left out through the skin it would become further contaminated.

Chairman,—

I will ask Mr. McPhee, of Stratford, to say a few words.

Mr. McPhee,—

I do not know that Dr. Cannon has left very much for me to say on this matter; however, I will say a few words on "First Aid to the Injured."

I have been connected with "First Aid to the Injured" for a number of years in the Stratford shop. I have seen a great number of men treated during that time.

We have a fine Ambulance Corps consisting of ten men. These men are situated in different parts of the shop, so that when an accident happens to any individual there is always a man close at hand.

We often wonder why so many accidents do happen, and we have discussed this subject amongst ourselves, but the fact is it is largely due to men not understanding the danger that surrounds them. New men are coming and going all the time. We have in the neighbourhood of 900 to 1,000 men, and amongst the men who are coming and going all the time are a number of men who are not accustomed to working in a shop and things being strange to them they are more likely to be injured than men who are accustomed to working in shops.

When a man has been injured and everything has been fixed up we find out how that man was injured, and we discuss it at our meetings.

From July 30th, 1908, to October 30th of that year when they were building the Grand Trunk shops we handled 360

cases and called the doctor 19 times, and from October 31st, 1908 to 17th of February, 1913, I handled 208 cases and called the doctor 84 times, the majority of these were slight accidents.

I have something here which I would like to call your attention to. It is a little thing, but it has caused us a great deal of trouble more than once, no doubt many of you familiar with railroad appliances will recognize it as a fog signal. There are dozens of men who do not know what that is and they are continually coming to the shop. They find these fog signals in the cabs of engines, on the tenders, and in the boxes of the engines, and when the engines are stripped these fog signals sometimes get scattered around. They are supposed to be removed before the engines come to the shops. Some fellow picks it up and wonders what it is, he finds a chisel and starts picking at it, and the first thing he knows it goes off. I had a man a couple of months ago who told me that he had been in the British navy for a number of years and was fairly well acquainted with all manner of explosives, but he never saw anything like this. He found one and took it to the bench and started to pry it open with a chisel, and the result was that it blew the side of his hand off—that man was off three months. Another fellow found one and he deliberately held it up against a boiler head and hit it with a hammer, that man did not have a spot on his face that you could put a pin point that was not scarred up. They brought him down to where I was and after fixing him up I asked him what happened, and he said that he had found a piece of tin and had hit it with a hammer. Well, after fixing him up I went right back there and you could see the marks on the boiler head where he had hit the fog signal with a hammer. This man went off and never came back again.

If there is any man here who is working in a roundhouse, I want to say to him, if it is possible to keep these things where they belong, do so, as there will be accidents from them for all time to come if they are left where men can get at them.

The company has done a great deal to safeguard men. All the motor drives in the shop are caged, and all the gears are cased over so that it is impossible for a man to get caught in them in any way.

We have had several accidents with the drilling machines. I had an accident with a man who was drilling a casting. You will probably all understand this case. His drill was running to one side and he raised his drill, and he just reached over to get a punch and in doing so his sleeve caught the

drill and in a flash he was wound round right up to his shoulder. Now why did that man not go round and pick that tool up instead of reaching for it? It seems impossible to get men to do it. In this case there was a man nearby, he stopped the machine, but left the man there all wound up. One thing should always be remembered in cases of this kind, keep your head, when you are going to assist anybody. I have seen the time when the sight of blood would make me feel sick, but I have handled so many cases now of men with their arms or hands badly injured, in fact, practically every shape and form of accident, that when a man comes running up to me all excited with word of an accident, I just take my box and hurry along to the man who has been injured. When I get there, probably half a dozen men are crowding round, there is only one thing to do, brace up, push the crowd to one side, go right in and find what is the matter with the man, and make him as comfortable as possible. These are the instructions that I would give anybody taking up this question of first aid to the injured.

Air motors are another thing that we have accidents with. A few weeks ago we had a fellow caught with an air motor. He was drilling out some staybolts and standing on the running board of an engine, and he must have laid the motor down to withdraw the drill and forgot to shut the motor off and the first thing he knew he was caught by the pants and stripped right up to his waist.

Sometimes after these motors have been in use for some time the lever to stop and start them becomes very sensitive, and if the man withdraws the drill with a jerk it is liable to start off again, and the first thing you know it may catch someone in the back.

I could talk on this subject from to-night until to-morrow morning, however, I want to thank you for your kind attention this evening. I am sorry that through a misunderstanding our ambulance box was not brought down to-night, but perhaps we may have an opportunity of coming here again, and if we do, why we will demonstrate to you until you are tired and put us out.

Mr. Wilson,—

I have not been connected with the Ambulance Corps at Stratford as long as Mr. McPhee has, as I have only been with them a little over six months. However, First Aid work is something that everybody should be able to put their hands to. As Mr. McPhee says, one of the main things is —keep your head.

I got my first experience with First Aid when I sustained this injury to my hand. This is what comes of being left handed, I slid my hand in at the back of the planer to get a wrench where it should not have been, with the result as you see.

You cannot tell when you may be called on to give First Aid. At the great wreck at Chapleau when so many were killed and injured there happened to be a few nurses on the train at the time, and they with the men and women who were uninjured turned in and helped the injured and pulled them out of the wreck to get them away from the fire. There were people working on those injured who never had had any experience of that kind before, all of which goes to show that we never know at what time we may be called on to do this kind of work. It is a duty we owe to our fellow men to be ready at all times to render First Aid when called upon by circumstances to do so.

Mr. McPhee spoke about the time they were building the shop at Stratford. One contractor's man fell 65 feet from the roof on to his back, but he got better; another man only fell 12 feet, but he fell on to a pile of scrap, and died in three days; this shows the kind of accidents one has to handle.

I am pleased to belong to the Corps at Stratford, and what I have learned I owe a great deal to Mr. McPhee's careful instructions. We meet every two weeks, sometimes oftener, and discuss the various accidents that have happened.

Chairman,—

I will now call on Mr. Riordan.

Mr. Riordan,—

This subject has been very well covered this evening. However, I think there are one or two points which might be mentioned with advantage to those rendering first aid to the wounded. In all cases of wounds be very careful to cleanse the wound thoroughly before applying any dressing. It is from the small wound which has been neglected in cleaning that blood poisoning comes from. I have found from personal experience that gasoline is the best cleanser for wounds such as we meet in our every day shop work. It is sterile and renders the wound and surrounding parts sterile; it does not give pain when applied to open wounds and dries very quickly. Solutions of carbolic acid, iodine, etc., are quite unnecessary if you clean the wound with gasoline. The wound should not be covered until the gasoline evaporates.

The case if serious should be sent to a surgeon. First aid

dressing should only be done at the shop, a pad of asceptic gauze being applied over the wound and a bandage applied to keep dressing in place until skilled assistance can be secured.

Another matter which I think worthy of consideration: Workmen often have loose sleeves on smocks and they are frequently being caught in set screws on lathe, etc., and limbs are thereby drawn into moving machinery.

Mr. Choyce,—

Mr. Chairman and Gentlemen,—As this ground has been covered so fully by Dr. Cannon and Capt. McPhee, I will have to resort to my personal experience with ambulance work.

It has always been a great pleasure to me to be able to help men in the shop who have got hurt.

I remember when I was sixteen years of age, in England, I thought I would like to join an ambulance corps. The age for joining the St. John's Ambulance Corps was eighteen, so I was not eligible, but my father, seeing that I was very anxious to join, spoke to the superintendent and he said that he would try and get me in if I was so anxious, so I joined and took my first, second and third certificates. About seven years ago I came to this country to the G.T.R. and I happened to mention to Mr. McPhee that I was interested in this work and he put me on the ambulance corps.

We have quite a number of different accidents in the shops during the day and it does one good to be able to help a fellow man when he is hurt, by reducing the shock and soothing the pain.

As Dr. Cannon says, one of the first things to know is the arteries, so that in the event of severe bleeding one will be able to know just where to go to stop the flow of blood, and then we can attend to the fracture, after that we make the patient as comfortable as possible until the doctor arrives. Of course, in the case of minor accidents, we do not send for the doctor, we just clean the wound with gasoline or oil, fix it up and if the man is in condition send him back to his work.

It was just last year on the football field that a man got his ankle badly broken. I was down at the other end of the field and could not get close enough, before they scrambled him into an automobile and his foot was bending all ways. He was ten months before he could use it, whereas if a first-aid man had had a chance to get at him, I am sure he would have been out in three or four months anyway. It does not matter where one may be working or playing, there is sure to come some time when, if you have the knowledge you can

render assistance to the injured or sick, which is a pleasure to yourself as well as to others. As the time is getting on, I will close, thanking you for the kind invitation extended to the Ambulance Corps of the G.T.R.

Mr. Baldwin,—

I have been connected with First Aid Work since 1883, twenty-one years in the Grand Trunk and nine years where I am now.

At the Canada Foundry we have several men in various parts of the works to render first aid. One man in the "First Aid" room looks after the bad cases, such as fractures, etc.; he sets the limbs and calls the doctor. As we have over 2,500 men working at the Foundry we have on an average 10 or 12 cases every day; these are usually minor accidents and, considering the number of men we have, the proportion of accidents is very small.

Mr. McPhee,—

There is one little point I left out and that is the manner of cutting off rivets. We have had several cases where men have had their eyes knocked out and the company have been very strict about men shielding the rivet heads when cutting them off. I have seen men strike many blows before cutting the head off and I have seen them come off at the first blow. A man will look at the rivet and will say to himself, that will want a lot of blows before it comes off; he does not trouble to shield it and possibly at the first blow off comes the rivet head and strikes some poor fellow and knocks his eye out. Now when a man has had his eye knocked out, it cannot be replaced; consequently, any man that the company finds cutting off rivets without shielding them is instantly dismissed.

I had a fellow a couple of days ago with a piece of steel in his face as big as a five-cent piece and he came to me and asked me if I could take it out. After fixing him up I asked him how it happened and he said a piece of steel came off the tool and went into his face. I followed him back to his work and found he had a cold set with about fifty scales on it, just about as thin as a razor edge on them, and it was one of these that had struck him in the face. This man would not take the trouble to go and grind his tool when it became burred. You might say well "What was the foreman doing?" The foreman cannot see everything and when he starts a man to work he expects the man to use ordinary intelligence and keep his tools in good shape. The man who has had any experience

keeps his tools in good shape, but the other man does not seem to realize the danger of working with tools that are burred.

Mr. Baldwin,—

I move that a hearty vote of thanks be tendered to Dr. Cannon for his very able paper and to the other gentlemen who have accompanied him from Stratford.

Mr. McCrae,—

I second that.

Chairman,—

It has been regularly moved and seconded that a hearty vote of thanks be tendered to Dr. Cannon and the other gentlemen from Stratford for coming here to-night and giving us this excellent paper. What is your pleasure? Carried.

Dr. Cannon,—

I thank you on behalf of myself and the gentlemen who have accompanied me from Stratford. I may say that one feels well repaid by the pleasure one gets by doing this kind of work. I have been interested in "First Aid" work ever since I commenced studying medicine and have become more and more impressed with its importance. We have in the City of Stratford, besides the Grand Trunk shops, various other industries, chiefly furniture factories, and we are endeavoring to get these other industries to take some interest in this work, as we have had a number of very serious accidents in the furniture factories and wood-working shops.

I thank you, Mr. Chairman, and gentlemen.

Chairman,—

If there is nothing else to come before the meeting it will be in order for someone to move that we adjourn.

Moved by Mr. Beswick, seconded by Mr. Ward, that the meeting be adjourned. Carried.