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## Original Articles

### THE MEDICAL OFFICER OF HEALTH AND THE INEBRIATE

BY GEORGE ELLIOTT, M.D., TORONTO.

No more important State problem presents itself to-day than the conservation, in every direction, of the morality, the health, and the lives of the people. As a causative factor in producing immorality, ill-health, and much needless loss of life, the consumption of alcohol as a beverage plays a conspicuous part.

Who knows better than the physician the harmfulness of the abuse of alcoholic beverages? He has seen or knows all the pathological effects in the various organs of the human body. He has attended the acute and the chronic alcoholic. His is the best knowledge of its baneful influence in spreading the social diseases; his the best knowledge of the part it plays in producing insanity, tuberculosis, pneumonia, Bright's disease, etc.

He knows when it acts as a sedative, a stimulant, a food, or a poison; what it has accomplished in the treatment of disease; what dose to give; what time to give it; the kind; how long to continue its administration. As with other drugs, some physicians even are never afraid to study its effects by personal experiment.

The physician knows there are some patients to whom he would not dare suggest alcohol as a medicine; others who would take it if the doctor ordered it; others, indifferently; others, gladly; still others, as the acute alcoholic, who joyfully welcome the tailing-off process.

It would appear, therefore, that in every community there are several classes into which the people can be divided as regards the consumption of alcoholic beverages.

1. The man—or woman—who is absolutely teetotal, has been, is, and always will be a total abstainer.

2. The person who, now and then, with no fixed habit, will take an occasional glass or two.

3. The person of fixed habit, which may be a glass a day, two or three a day, or forenoon, afternoon and evening, but never getting drunk.

4. The same as (3) but occasionally going one better and becoming intoxicated at various intervals.

5. The acute alcoholic, who goes upon drinking bouts of two or three days, a week, or so—say every six months or a year; an abstainer in the intervals; the dipsomaniac, with attacks of delirium tremens.

6. The chronic alcoholic; at it nearly every day; drunk often; not often sober; or if so, only for short periods of time.

A consideration of these six classes which cover any and every community or municipality will show that, as regards the drinking and use of alcoholic beverages, they may readily and practically be grouped into two divisions, the first three, and the last three.

The first three classes never become nuisances to society and so never come under the cognizance of the law, that is as regards alcohol. They may be immoral, may become criminals, may be jailed, imprisoned, cat-o'-nine-tailed, even hanged, but never for their association in any way with the alcoholic beverages.

The last three classes are the people who cause all the trouble in connection with the alcoholic problem. That is to say, if drunkenness could be altogether eliminated from society, there would be no alcoholic problem; and there would only remain the question of how much, and how often a person could use alcoholic beverages and escape doing harm to any of the organs and tissues of the body. Let each person put the question to himself or herself: To which class do I belong?

Manifestly there is little to be said with regard to the individuals in Class One. Had they their way, all alcoholic beverages would be poured into the sea. There would be no manufacture of them, and hence no importation or exportation anywhere; no distilleries; no breweries; no saloons; no liquor shops. That would be an end of it. But alcohol *per se* can never be utterly destroyed. It is a product of nature; in the tissues and organs of every human being, whether he has ever been a consumer of alcohol or not. And no one would want to destroy alcohol altogether; for no one would wish to revert to the days before chloroform and ether. Moreover, if there were no alcoholic beverages, and

all the machinery of their production demolished, the ingenuity of man would yet remain, and that ingenuity would manifest itself in the secret and illicit production of the goods. Therefore, until something better is promulgated, the world will continue to have its alcoholic beverages. It then becomes the duty of every right-minded citizen to endeavor to settle the question by the elimination of drunkenness. After that the question can only be one of compromise.

No one is going to contend that a glass of whiskey, or beer, or wine, let us say once a month, or once in two or three months, is going to do any physical harm to any individual, though that habit is persisted in over a long life. No doctor of medicine knows that it will. He cannot say from any evidence ever produced that it will. No physician can say that amount, taken at such intervals, can produce any disease in any organ or tissue of the body. No one can claim that amount does any one any harm in any way. The man in Class Two is, then, no more liable to any disease or harm than the man in Class One. He is never a nuisance to society from his alcoholic habits. The thought then travels naturally down to Class Three; and the question may properly be here put:

What quantity of wine, beer, or whiskey can a person drink daily—and never becoming drunk—without injury to the vital organs, and consequently without shortening of life in any way? Here is the crux of the whole question: If a person can safely take one, or two, or three glasses daily—and the medical profession ought to know—and then let the public know—the question would be largely solved. Does the medical profession know this? It does not, absolutely. But they can give a proximate estimate of it. For instance, if a man in Class Three consulted a physician as to what he should drink, when he should drink, and how much, the same as he would do as regards his diet in disease, the doctor would invariably advise him not to drink at all. But if the man persisted and stated that there certainly must be some quantity a person could drink daily, weekly, or monthly, without harm to his physical economy, and without even approaching the appearance of inebriety, then what would the physician counsel? It is quite likely the answer would be: Every person is a law unto himself. He must first find out the quantity from his own personal experience. He must realize for himself when and where the acme of satisfaction comes in or arrives, and where another drink would start him down the path to drunkenness. This might be one, two, or three, or more, say in an hour's time—

considering ordinary social drinking—according to capacity. There is such a point, and every person with experience knows that point. The doctor would most likely say that man is a wise one who always stops at such point, and who does not repeat the experiment again that day, nor for three, or four, or for several days. Alcohol is not to work upon. It may and will recuperate after work, and he is a wise man who uses it with the utmost caution. The point is that, for people who want to take a drink, or who will take a drink, now and again, and who have no desire or thought of getting drunk, who abhor drunkenness in themselves as well as in others, they should regularly consult their physicians in this matter. For the Third Class, and Fourth, there would be much hope of freedom from disease due to over-indulgence in alcoholic beverages, through the medium of the physician. The steady fixed-habit drinker should beware of disease of vital organs.

It is from the ranks of Class Three and Class Four that the recruits to Class Six come. The forenoon drinker, or worse still, the before-breakfast drinker, treads on dangerous ground. No man ever went to the bad through drink unless he became a forenoon drinker. That man should be protected from himself. To form the habit of drinking in the forenoon is the first sign of pathological trouble. For many years the writer has advocated the closing of all bars and liquor shops in the forenoon, at least up to eleven o'clock. It is gratifying to see that Scotland has recently adopted a ten o'clock opening law. In the afternoon or evening, after work, there may be some excuse for a drink. That is physiological, not diseased. What business have saloons and liquor shops to be open in the forenoons? None, from the business standpoint. If they all had to depend for their revenue on the business they did up to eleven o'clock, and on such like business the balance of the day, they would soon have to shut up shop and put up the shutters. What valid reason, therefore, is there for their being open? To allow the man, the first morning after the night before, to become a forenoon drinker? Surely.

In the second division, the three last classes, drunkenness is the first factor of importance. All drunkenness must be eliminated in every community. How? By quarantine, the same as for other communicable diseases—and may not drunkenness exert a habit, or communicable, effect?

Ordinarily some drunks are arrested and taken to the court. Instead of being jailed or fined, they should be placed under the jurisdiction of the medical officer of health, and by that official

quarantined in their homes, lodgings, or apartments, the same as the sick and other people are quarantined for diphtheria, smallpox, scarlet fever, etc. A placard should be placed on the door, and quarantine should last for one or two weeks.

A quarantine law would have a beneficial effect upon Classes Three, Four, and Five. For persons of Class Six, a quarantine of four to six weeks, upon their first offence, would sober up most individuals, particularly if the law was stringent in the matter of supplying liquor, or the breaking of quarantine. For those a fine or jail would act as a deterrent.

By the time a new generation had been born and reared, the educational advantage of such a quarantine plan would be appreciable.

As no plan for dealing with the liquor traffic has, as yet, received wide and general application, the laws being diversified, quarantine of the drunks offers a solution of the problem never yet advocated, and one which should commend itself not only to total abstainers, but to moderate drinkers as well. The latter class, very often a predominating class in every community, hold the key to the situation, and should at least meet the out-and-out temperance people half way. If the medical officer of health were given power also to quarantine a hotel, saloon, or liquor shop for a period of two weeks or a month, upon satisfactory proof of selling to men already drunk, it would teach bartenders and proprietors to more readily recognize the pre-alcoholic stage of drunkenness.

In the past two decades, the value of the medical officer of health to any community has advanced by leaps and bounds. Smallpox and the other communicable diseases, as well as typhoid fever and tuberculosis, have gradually come under his administrative jurisdiction. Compulsory notification of disease has been gradually required. Now the social diseases are being tentatively included. Why not the great social evil which has held the boards for many generations as first and most important? There is nothing being done to prevent insanity although alcohol is claimed to cause at least fifteen per cent. of all insane. Here is the opportunity to prevent many from going insane! In this direction lies the opportunity of preventing drunkards. The very fact that a man was going to be quarantined for being drunk and isolated from his friends and his house placarded for a period of time, would act as a strong deterring force in lessening drunkenness.

The medical officer of health defends us from bad foods, bad water, bad milk, why not from the bad alcoholic beverages? Is

there any more logical solution of the liquor problem? Its recommendation lies in its universal applicability.

An isolation hospital, or farm, is required for all drunks in every large urban community.

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### **ARMY SURGEONS, ATTENTION!—A POSITIVE METHOD OF PREVENTING AND CURING PURULENT INFECTIONS**

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By CHARLES H. DUNCAN, M.D., NEW YORK CITY.

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The following method of wound treatment is being successfully employed by many of the army surgeons of the warring nations of Europe. It is to disseminate still further the knowledge of this simple and most efficacious method of wound treatment among army surgeons that this article is written.

It is especially and particularly adapted to the treatment of non-fatal wounds of warfare; not only on account of the great simplicity of technique, and convenience it offers, but on account of its wonderful therapeutic value.

Wherever the wounded soldier may lie, there in his wound is his remedy, always at hand ready for use, the exudate—the natural remedy containing the unmodified toxin. The reaction to the unmodified toxin that comes out of a wound, is the specific curative reaction of the same toxins that remain in the wound.

This method of treatment, which the writer calls "Auto-therapy," surpasses in therapeutic value anything that modern medicine or surgery has ever given us for these conditions. It is being cordially welcomed by thousands of civil surgeons in all parts of the world, who are using it successfully daily in their practice. By these it is claimed to be the best method of wound treatment known. In fact, many claim they never have had a failure attend its use, others claim that it is the only method of treatment that will cure many profoundly septic conditions.

It is fast becoming the standard method of preventing and curing infected wounds all over the world. It is no longer an experiment for it has the endorsement of leading medical societies in the United States. The technique of this method of treatment given in this article is necessarily brief, for it is proposed here to give

simply a plain, concise working formula for convenient reference in the field and base hospitals.

The reader who is interested in the principle that underlies the cures made by this autotherapeutic method of wound treatment is referred to the medical periodicals given in the bibliography at the close of this article.

#### THE PREVENTION OF INFECTION.

The dog licks and cures his wounds. The only place he ever has an infection is on the head, where from anatomical reasons he cannot lick. If pus from a wound on his head be placed in his mouth at proper intervals, these wounds will also heal quickly.

If the soldier wounded on the battlefield licks his wound regularly every two hours, for three days, there will be no more deaths from this cause, for his wound will apparently heal by first intention. If from anatomical reasons the wound is so situated he cannot suck or lick it, he may still be able to abort infection by simply chewing the blood-stained portions of the cloth that covers the wound, for five minutes, swallowing the juices. This should be done twice daily for several days till the danger of infection is past. Any foreign body should be taken from the wound and chewed in a similar manner. When the mouth of the wound is small and tends to close, it must be kept open by a drain which should be used therapeutically in a similar manner. Nothing but boiled water should be used to clean the wound. If a wet dressing is desired, use normal saline only.

The "dog catchers" of the city of New York never have purulent infection, tetanus or hydrophobia, follow an injury received from the teeth of animals, and they are bitten continuously. The reason for this is, because they cure their wounds autotherapeutically. That is, they suck and lick a bite from an animal as soon as it is received. It should be remembered that we believe that the bite from an animal is liable to result in an infection, or possibly tetanus, and any neglect to thoroughly cauterize the bite from any animal invites infection, and possibly tetanus, or hydrophobia. This absolutely dependable method of wound treatment has been verified several hundreds of times a year for many years. Leading "veterinary physicians" claim in published articles on the subject of autotherapy that they would consider it a crime not to treat infection in horses by means of "autotherapy." They save the city of New York several thousands of dollars annually, by treating horses by means of autotherapy that otherwise would have been shot.

If the patient refuses to treat himself in this manner, the surgeon should simply wash the stained portion of the bandage in an ounce or two of water in a bottle and give this to the patient to drink. If pus is in the wound when the patient is presented for treatment, he is given two drops of pure pus from his own wound, by the mouth every hour until six drops are taken. A convenient method of doing this is to place six drops of pus in an ounce of water, shake thoroughly and give one-third of this at hourly intervals, then stop all medication. In many instances, that is all that is necessary to do to cure the most stubborn chronic and refractory case of infection. The pus will often stop within twenty-four hours. At first the discharge becomes thin and bloody. Give no more as long as this condition prevails, for this is an indication that the curative reaction is continuing. If the pus should become thick again, simply repeat the process. The foregoing method of treatment is applicable to all wounds that are not directly or indirectly connected with either the alimentary tract or respiratory system. Wounds of this latter class should be treated by the following technique, as in fact may all wounds. The following method of wound treatment is universally applicable to all infected wounds:

Place ten drops of pus in an ounce of water, shake thoroughly, and allow to stand for twenty-four hours, then filter through a Pasteur-Chamberlain or a Berkefeld filter, and inject twenty minims of the bacteria-free filtrate subcutaneously. Repeat the injection only when the discharge becomes thick. This occurs often at the end of the fourth or fifth day; at times, however, but one injection is sufficient.

#### AUTO-IMMUNIZATION IN RESPIRATORY INFECTION.

Prolonged hours in the wet trenches, and undue exposure, must necessarily cause bronchitis, coughs, colds, and even pneumonia to be a frequent occurrence among the soldiers. It is in this class of infections that "Autotherapy" is again at her queenliest, curing these acute conditions almost every time within twenty-four hours if the following technique is properly carried out:

The application of "Autotherapy" to these respiratory conditions is the acme of simplicity and can be employed on the spot wherever the patient may be, if the surgeon has only a small Berkefeld filter and a hypodermic syringe. If sufficient sputum can be obtained, simply filter it through a Berkefeld filter and inject twenty minims subcutaneously. If the patient is in a



hospital, the following technique should be closely followed: Sputum 1 dram, and distilled water 1 ounce. Mix in a two-ounce bottle, shake well and allow to stand for twenty-four hours, filter through a Berkefeld filter. Inject twenty minims of the bacteria-free filtrate into the loose cellular tissues over the biceps muscle. Give no further dose until the patient ceases to improve under the preceding dose. In chronic cases this will often be from the third to the fifth day, although the condition of the patient should always be the guide as to the time another dose is needed. In very weak cases, and in very chronic cases, proportionately less should be given. One injection will, however, usually cure an acute or sub-acute bronchitis within twenty-four hours, and pneumonia if the injection is given within twenty-four hours after the initial chill. Good results are reported by many physicians who simply boil the mixture of sputum and water for five minutes, filtering through several layers of sterile gauze, cheesecloth, or filter paper, and injecting twenty minims subcutaneously. These formulas are well within safe limits. In respiratory infections the physician should make enough of the toxin to last until the case is cured.

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If a copy of this article be placed in the hands of every soldier at the front, it will be the direct means of saving many thousands of lives and suffering untold.

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### MIMICKING MACK

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By A. C. E.

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Having tied his horse to the hitching-post near the little gate leading from the lane to the cottage, Dr. Mack McAlpin now sat just inside the door of the living room, wrapped in his ulster—and in thought. Would he be detected? Possibly John Van-Norman might be later than usual returning home that evening from the workshop at the upper end of the village.

He could hear Mary's mother preparing the evening meal in the kitchen after having admitted and placed the chair for him. Mary, he believed, was dressing for the tea-meeting at St. Vincent. The sleighing was fine, his horse a superb roadster—they could do the four miles in twenty minutes handily. It was 7.30 and he began to fidget. Not about getting to St. Vincent by eight, but rather about the father's appearance.

The door at his side might open any minute and the man he feared to meet enter. Could they get away before he arrived? Once down the short lane and on the highway they could defy pursuit.

But the door at his side did not open that night as he expected. Fortune was favoring him for the time being. Instead, he heard a full, strong voice in the kitchen, John VanNorman having entered his home by the rear door.

"Whose horse and cutter is that out there?"

"Mr. Herbert's," answered the wife.

"Are you sure?" he rasped out sharply.

"I ought to be. I let him in myself."

"Jack Herbert's cutter is a jumper, and that one is a new piano-body. It's not that new doctor, you are sure?"

The new doctor sank his chin further into his collar as he heard Mrs. VanNorman opening the kitchen door. The lamp on the table showed but an indifferent light in the living-room—something of a cross between a fireplace and an acetylene gas jet.

“Isn't Mary ready yet, Mr. Herbert?”

“No, not yet,” raising his chin and mimicking Jack Herbert's voice, as though his vocal cords had been borrowed to vibrate for the occasion.

He saw the wife shoot a glance at the husband as though to say “I told you so.” Then Dr. McAlpin clutched the sides of the chair seat as the mother marched through the living-room to the parlor door, through which she disappeared, evidently to hasten her titivating and dilatory daughter.

But Mack McAlpin waited not on her return, nor the expected appearance of the doubting father in the room. Time was pressing. It would be well to turn the horse's head for the highway gate and the good things at St. Vincent. The fair lady of Netherby Cottage, for that was the romantic name Mary had bestowed upon her father's domicile, would find her young Lochinvar all in readiness.

He had, indeed, taken time by the front tuft, for Mary now ran hastily out and bounded into her place between the cozy coon-skins.

“That was nearly a touchdown, darling,” Mack whispered, as “B-11,” obeying the suggestive flap of the reins, sprang down the lane and was swerved to the right for St. Vincent.

“Oh!” as she felt an arm deliberately running round her form, “you're driving too fast, Mack.”

“No time to lose, dear—hullo! I wonder where Herbert is?”

Jack Herbert had bespoken Mary for the tea-meeting. But Mary had not dared tell her father Dr. McAlpin had been promised beforehand. John VanNorman, having once said “yes” or “no,” she knew, was as difficult to move as an orthodox Jew. So they had planned that Mack should be sure to be there for her first. Jack always liked to go in when the people were all assembled at any function. He could show off better, especially when he had a pretty girl with him like Mary VanNorman. And all the young men of the whole countryside would have liked to have had Mary. She knew Jack was being shabbily treated, so made no reply to Mack's interrogation, which seemed to be addressed as much to the snow, or to “B-11,” who was clipping off the four miles in less than three minutes *per*, as it was to herself.

"They'll be after us as soon as he does arrive," vouchsafed the doctor, who was proving his right and title to the wings of the caduceus, though some might insinuate the sinuous part as well.

"How well you mimic Jack's voice, Mack!"

"Oh, yes!" I had two years' interne service in a throat hospital. But it's not difficult to throw your voice towards your roof, so to speak, as Herbert does—I wonder why your father favors him before me?" and he pressed a warm kiss on her not unwilling lips. The tones, Herbert's, rather startled her.

"Father was standing in the kitchen door as I ran out. Did he see you?"

"I think he saw my back, but Herbert and I are about the same size and build—and this ulster collar is deep. Possibly it is the farm and the sheep."

"Yes, he has a fine farm and beautiful Southdowns. I never could, believe me, love that voice. Please do not use it any more. There is no necessity now." She turned her fair face towards his full, dark one. He thought of the stars and blue o'erhead, though night.

"I haven't a fine farm, dear, nor beautiful Southdowns, but I have a sheepskin no one should be ashamed of, and life and hope—may I hope, darling? I love you dearly."

For answer, being not unaccustomed to driving horses, as most country girls like to be on certain occasions, Mary reached for the reins and took them in her own hands.

"We have a sheepskin at home, too—it's inside the front door—magenta."

"Quit your baaing! I'll prove you out."

They were approaching the near-end of St. Vincent. She returned the lines.

"Mary, I have the ring and the license, and the pastor is awaiting us at the manse before going to the tea-meeting. I arranged it all with him this forenoon when making a call here. Then we can go on to the tea-meeting as man and wife. His wife and maid can be witnesses."

"Father and mother will be so angry, and all the people will say we eloped."

"I shall fix all that," he replied, reading acquiescence in her answer, and directing "B-11" to the clergyman's residence.

They took the minister and his wife into the cutter—at least, Dr. McAlpin took his wife, and the minister his—a little crowded, but jolly.

The entertainment was buzzing along when Mack began to be sensible of occasional glances and nods in his direction.

"I believe," he said, turning to Mary, "I believe that old—" here he checked himself—"I believe Mrs. Preacher has let the cat out of the bag. We're in for the glad hands."

"What is he saying, Mack?" gasped Mary, her face suffusing like a Percy necktie. "Oh, the mean thing!"

"The quack! He's a fiver instead of a tenner."

Mack and Mary listened, and this is what they caught from the minister's jovial announcement:

"I have to-night married Dr. Mack McAlpin to Miss Mary VanNorman and Mr. John Herbert to Miss Maudie Snow, though the first were last, and the last first."

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### THE "DUM-DUM" BULLET

Since the war began there have been charges and counter charges by the Powers as to the alleged use of the so-called "dum-dum" bullet. *The Star* (Montreal) has therefore secured for the information of its readers the following article descriptive of this unrecognized projectile, written by an expert whose name is withheld for obvious reasons. The writer's conclusions will prove unexpected to the lay reader. He points out:

That probably no nation has issued a real "dum-dum" bullet to its troops in the field.

That any regulation bullet will take on, under certain circumstances, the character of the hated "dum-dum."

That any individual soldier can easily turn the regulation bullet of all but one of the warring Powers into a "dum-dum."

That the wound caused by the "dum-dum" is not nearly so cruel nor so apt to have fatal effects as that caused by shrapnel.

That the "dum-dum" is used as a "cruelty talking point" because it happens to be forbidden, and that there is far more reason to ban shrapnel by international agreement.

Incidentally, he tells the origin of the bullet's peculiar name.

What is a "dum-dum" bullet?

"Dum-dum" is the name given any bullet which is so made in the original or so tampered with that its nose will spread or "mushroom" upon striking the target of flesh aimed at. The old lead bullets without jackets, in vogue a few years ago, were really "dum-dums," every one, and any jacketed bullet with a lead core

may be turned into a "dum-dum" in a moment with a knife or bayonet.

The "dum-dum" bullet was so called from the fact that an arsenal in the town of Dum-Dum, near Calcutta, first manufactured a jacketed military bullet that had either a hollow point or else a jacket split on the point, particularly so it would mushroom.

As Britain and the United States were the two nations mostly concerned with the effects of bullets on fanatics or savages, they did not sign the first Hague Agreement, in 1899, but did sign in 1907, not to manufacture, issue or use the "dum-dum" for warfare. The public must understand, however, that it is absolutely impossible to supervise the actions of every man in the trenches and if a man thinks that he wishes to tear apart some sniper who has killed several of this man's friends, you can rest assured that this man will use whatever bullet he thinks will best put this sniper out of action.

You will note that Figure 1 shows the bullet entirely covered by a cupro-nickel jacket, with the exception of the small round space on the base of the bullet, where the jacket is turned over it. On either a round nose or pointed metal jacketed military bullet this is the only point where lead is exposed.

The round nose bullet (Fig. 1) was the first issued for high power military rifles. This type of bullet was the real cause of the nickname "dum-dum," as the stiff jacket did not allow the bullet to upset or mushroom, as did the old pattern soft lead bullet, when entering a body or striking a bone. For that reason, when fighting against savages, the soldiers would cut a cross through the point of the nickel jacket, with their knife or bayonet blade, or rub off the nickel point on a rock, to allow the bullet to actually stop a savage when a rush was made. They named these hybrids after those made in that East Indian town. Before any Hague Agreement was signed this practice was resorted to by the British soldiers in Africa and by the United States soldiers in the Philippines.

All military rifle bullets have envelopes or jackets of hard metal, or else are made throughout of hard metal. The necessity of having metal jackets around a lead core was brought about by the use of smokeless powder, which gave such a high velocity and pressure against the base of the bullet that soft lead bullets simply pushed through the rifle barrel and did not take the rifling. Thus the lead bullets did not spin during their flight and did not hit where they were aimed, and also struck sideways as well as point on.

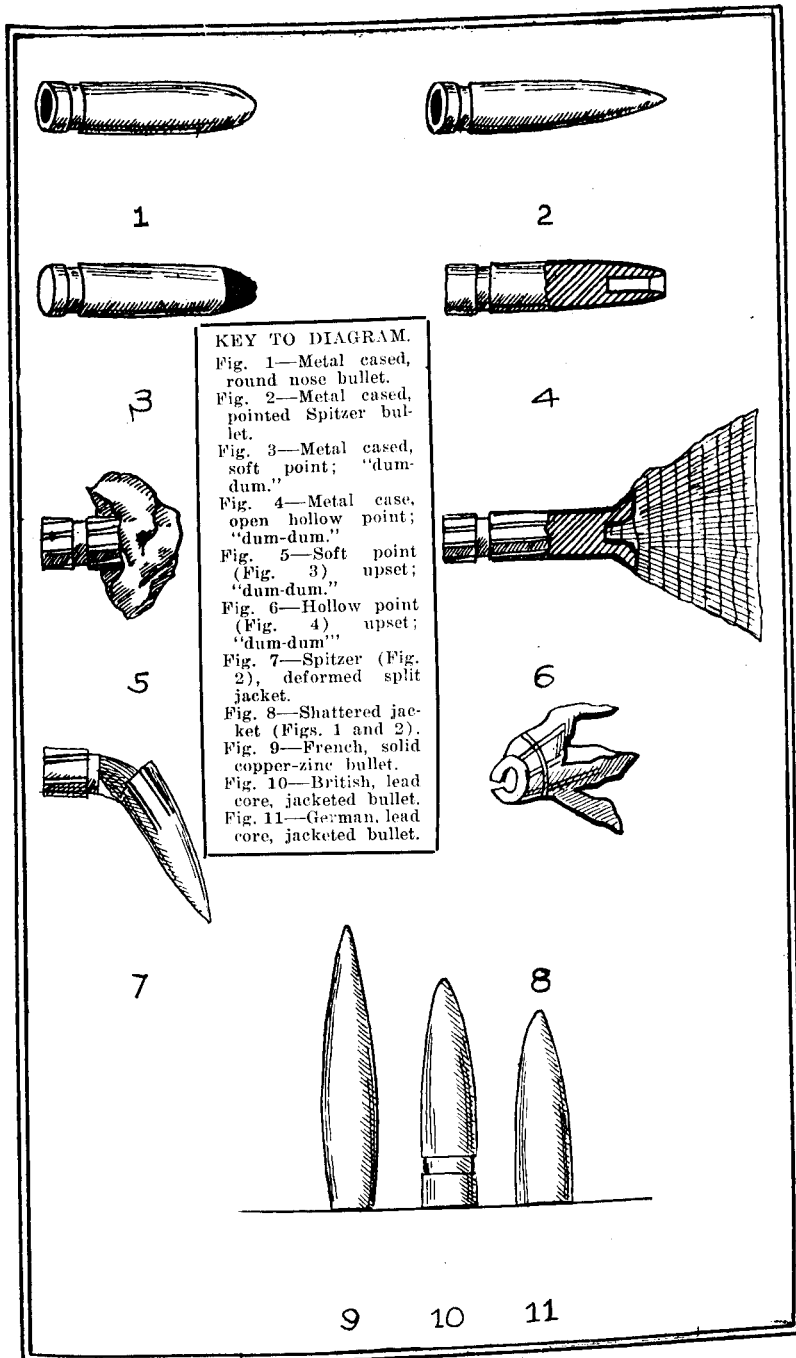


Figure 1 is a full-size drawing of a metal cased, thirty calibre, round nose bullet, as used in a military rifle. Thirty calibre signifies that the diameter of the bore of the barrel is about three-tenths of an inch. Russia and the United States use a .300; Belgium and Turkey a .301; England a .303; German a .311; Austria and France a .315.

The metal jackets are generally made of steel or an alloy of copper and nickel. The cupro-nickel jacket is the most popular. Jacket material is about twice as thick as heavy writing paper and is so stiff that you can hardly bend a shattered jacket with your fingers.

The pointed bullet shown in Figure 2 is the so-called Spitzer bullet, patented by a German and first adopted by Germany as a standard military bullet. It slips through the air better than a round nose bullet, and as high velocity and flat trajectory is considered important for a military bullet this type of bullet has been adopted by nearly all the nations. It is evident that this pointed bullet cannot be "dum-dummed" as readily as could the round nose bullet, although the nickel point can be easily filed or rubbed off, thus exposing the front of the lead core.

Officers will generally caution their men not to "dum-dum" the bullet, as blunting the point reduces the range and velocity. If the point is split or ground off too far back, the pressure of the gases on the rear of the lead core at the discharge of the rifle causes the core to push through the jacket, probably splitting the jacket open, leaving the split jacket in the barrel and putting the rifle out of action or even blowing back the rifle bolt or bursting the barrel on the next discharge.

The theory of this can be seen in looking at Figure 3, which is a soft point (lead exposed on point) bullet that is manufactured for game purposes. Note that the jacket completely encases the rear end of the bullet, thus stopping any "blow through" of the lead core. This type of bullet is a "dum-dum" and is the type of bullet that the German Ambassador at Washington recently claimed as being manufactured in the United States for the British Government; which statement was flatly contradicted by the cartridge companies and thought of too little consequence by the United States authorities to warrant any investigation of same.

Figure 5 shows how this (Fig. 3) soft point bullet upsets or mushrooms on striking a bone, with a result as if a bullet three times the size was fired, helped out by pieces of splintered bone.

In Figure 4 you see the hollow point, "mushroom tip" bullet. This type of jacketed bullet was a British issue at one time and



is extremely effective in regard to stopping qualities. It is a wicked "dum-dum." The jacket of this bullet is carried to point and then turned into a hole at the point; the cavity shows exposed lead. This bullet tears on soft tissue and has rather an explosive effect.

When a bullet of the hollow point type strikes man or beast, the cavity in the point of the bullet seems to gather cloth, leather or flesh and pack it in front of the expanded bullet in the shape of the shaded section shown on the drawing. The point of entrance will then be of the diameter of the bullet, while the exit will show a "tear-out" the size of the palm of your hand.

Figure 7 shows a Spitzer bullet that, suppose we say, has struck a small bone and spit the jacket. Yet it keeps on going. When you think of that bullet leaving the muzzle of the rifle at a velocity of 2,500 feet per second and spinning completely around once in each ten inches of its flight, can you wonder why a doctor would say that a "dum-dum" bullet had been used in this case, although you know that the bullet was perfect when it left the rifle?

Imagine the "buzz-saw" action of that split jacket whirling inside one's body. At short range, when a full jacketed bullet strikes a heavy bone, it seems to fairly explode. The jacket will be shattered, as shown in Figure 8, the lead slivered and powdered and thrown away from the jacket. The slivers of lead pierce, the ragged jacket tears, and the combination results in a wound that is almost always fatal.

The actions of high velocity jacketed bullets are erratic. The writer has shot a grouse, at a distance, say, one hundred yards, with a military bullet and seen the grouse fairly explode; feet, head, wings and shattered fibre being all that was left of the bird. Experiments have been made with bodies as targets, and at short range the explosive action was noted, while at long range clean drilled holes resulted, both through flesh and bone.

The theory generally accepted is, that the bullet leaving the bore of the rifle with such a high velocity and spinning motion, takes a rotating action as does a top, for the first two or three hundred yards. After travelling that far the bullet steadies down and travels exactly point on. That wobbly motion may explain the explosive action at short range and the ease with which the bullet tips over on impact.

The three bullets, as shown by figures, numbers 9, 10 and 11, are full size drawings of the military bullets as now used by the French, British and German Governments, respectively.

The French bullet (Fig. 9) is composed of an alloy of copper and zinc (no lead core) with probably a thin plating of copper or nickel. It is the longest military bullet used by any nation and is of the type called a "boat-tail" bullet. The rear end is slightly pointed, to give the bullet less air resistance during flight.

Doctors attached to the German field hospitals report that the French bullet is very humane, causing a clean-pierced, quick-healing wound that is not generally dangerous unless a vital organ is perforated.

When you analyze the statements of some doctors that the pointed military bullet turns over in its passage through the body, then weigh the statements of the German doctors in regard to the "non-tumbling" of the extremely long and pointed French bullet, which certainly has the most reason for turning over—then, and not until then, are you in a position to realize that wounds are just as they happen to come; generally brought about by fate, located by luck and decided by the health of the body, taken together with a doctor's care.

This French bullet cannot be "dum-dummed," as it has no lead filling. It might be made flat or split pointed or even made hollow pointed, but either change would cause more trouble than it was worth, as the shattering effect of the lead filling is missing.

The muzzle velocities of these three bullets are approximately as follows: French, 2,400; British, 2,500; and German, 2,900 feet per second. Of the three the German bullet should not tip over as easily as either of the other two, but with its extreme velocity and its lead filled jacket, it ought to be the most dangerous military bullet used by any nation in the world.

In all wars it has been noted that some cruelty "talking-point," in reference to projectiles used, has been brought up for the purpose of obtaining sympathy. The "dum-dum" bullet is not legal and can be objected to, while the shrapnel shell, with its much more frightful wounds, is passed by just because its use is allowable.

If a man is not killed outright by a "dum-dum" bullet, he has a fair show for recovery, as the lead filling or bullet jacket will not generally cause blood poisoning. But when a jagged strip of copper several inches long, from the rifling band of the shrapnel, or a piece of brass pipe from the powder tube, lodges inside the body gangrene will set in in short order, especially if the man falls on the field, where he can not be immediately removed to the field hospital.

Pieces of steel or iron, with saw edges and smutted with acid gases, bronze fuse points and round lead balls that have been

smashed out of shape, make up the shower of shrapnel fragments that mostly cause fatal wounds. Wounds from a "dum-dum" bullet are like a mosquito bite as compared with the wounds made by a fragment (with exception of the lead balls) of a bursted shrapnel.

Taking all points under consideration, the publicity that has been given the "dum-dum" bullet is like trying to make a mountain out of a mole-hill.

### RELIEF BELGIAN MEDICAL AND PHARMACEUTICAL PROFESSORS

(Amount not previously acknowledged.)

Manitoba Executive Committee, \$200; Dr. H. B. Anderson, \$50; Dr. J. B. Gullen, \$25; Druggists of Kingston, per Dr. W. T. Connell, \$50; Members of Kingston Medical Association, per Dr. W. T. Connell, \$142; Manitoba Executive Committee, second remittance, \$300; Dr. F. A. Clarkson, \$10; Dr. J. S. Hart, \$25; Dr. S. M. Hay, \$25; Dr. H. C. Tomlin, \$25; Dr. J. Ferguson, \$25; Dr. R. W. Wesley, \$10; Dr. C. W. Brand, \$5; Dr. W. W. Ogden, \$10; Dr. W. J. Wilson, \$2; Dr. N. King Wilson, \$1; Dr. Algernon Temple, \$20; Dr. S. Cummings, \$10; Dr. F. Harrison, \$5; Dr. R. R. Hopkins, \$2; Dr. N. H. Beemer, \$25; Dr. A. D. McArthur, \$2; Dr. J. S. McCullough, \$5; Dr. A. Wilson, \$2; Dr. F. C. Trebilcock, \$5; Dr. T. J. Page, \$10; Dr. J. Norman, \$2; Dr. A. A. McDonald, \$25; Dr. Thos. Wylie, \$5; W. P. Caven, \$25; Dr. Gilbert Royce, \$10; Dr. Musgrave, \$10; Dr. Jane Sproule, \$5; Dr. C. D. Parfitt, \$10; Dr. F. R. Scott, \$5; Dr. R. A. Pyne, \$10; Geo. Gleonna, \$10; T. S. Webster, \$25; Thos. Kerr, \$10; T. A. J. Duff, \$5; J. J. Thompson, \$5; E. T. Hoidge, \$10; W. E. Ogden, \$2; A. Primrose, \$25; Chas. P. Lusk, \$10; G. B. Smith, \$10; R. A. Stevenson, \$5; W. F. Fawns, \$5; H. M. Tovell, \$5; W. C. Heggie, \$5; Stewart Wright, \$2; James Beatty, \$5; J. W. Smuck, \$2; G. and H. Carveth, \$1; E. Clouse, \$1; G. E. Stacey, \$1; J. F. Goodchild, \$5; Chas. B. Johns, \$5; Dr. Angus Campbell, \$5; Dr. A. Crichton, \$1; Dr. D. N. MacLennan, \$10; Dr. Campbell Meyers, \$10; Valley Medical Association of Nova Scotia, \$50—making the total to date of \$1,915.

## Reviews

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*Physiological Principles in Treatment.* By W. LANGDON BROWN, M.A., M.D., Cantab., F.R.C.P., Assistant Physician at Bartholomew's Hospital, and Physician to the Metropolitan Hospital, etc. Third edition. Toronto: The Macmillan Company of Canada.

If the medical practitioner wishes to keep abreast of the times in many recent advances, particularly as regards the hormones and organic therapy, he will gather much valuable information from this concisely and clearly written book. The newer and modern conception of gastric physiology is well handled, and is one of the valuable chapters. Blood-pressure, autointoxication, diseased conditions in the kidneys and heart are also dealt with intelligently and succinctly. Altogether the book is such a delightful one that we heartily recommend it to our many readers.

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*Diagnostic and Therapeutic Technic.* A Manual of Practical Procedures Employed in Diagnosis and Treatment. By ALBERT S. MORROW, M.D., Clinical Professor of Surgery, New York Polyclinic. Second edition, thoroughly revised. Octavo of 834 pages, with 860 illustrations. Philadelphia and London: 1915. Cloth, \$5.00 net; half morocco, \$6.50 net. W. B. Saunders Company, Philadelphia and London. Sole Canadian Agents, The J. F. Hartz Co., Ltd., Toronto.

No practitioner can afford to be without this most valuable book. If not all of the procedures employed in diagnosis and treatment are not given, at least the large majority, by far the best part, are given. Every practitioner will find, almost in his daily work, an urgent use for a consultant ever at hand. Here it is. It is generously illustrated both as regards diagnosis and treatment.

# Dominion Medical Monthly

And Ontario Medical Journal

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## COMMENT FROM MONTH TO MONTH

**Cancer** still continues to claim many lives annually in the Province of Ontario. The deaths have gradually increased from 1,253 in 1904 to 1,806 in 1913. The number is a fraction over four times as many as typhoid fever; whilst it approaches those from tuberculosis, and almost equals the deaths from tuberculosis of the lungs—1,955.

When the mortality statistics of cancer and tuberculosis are compared, and when the actual campaign against tuberculosis in the province in the past fifteen years is remembered, it will be appreciated that it will only be a few years before cancer will be claiming as many, if not more lives, than tuberculosis in all its various forms. What is going to be done regarding cancer? How can it be neglected much longer!

Were cancer a communicable disease it would, of course, come within the active consideration of the Board of Health. But that has not yet been established. The cause of cancer is yet unknown. Until such times arrive it must still continue to claim its victims. And there is a dread of cancer almost as intense as that of tuberculosis, if not more so!

Can anything be done in the Province of Ontario to stay, and lessen, the ravages of this horrible malady? That it is curable, in many cases, when taken early, is established. Is it possible that many of these cases first fall into the hands of quacks? Most physicians know of such instances, almost annually, or at least biennially. At least the people should be educated, in some way, to consult regular physicians early in these cases.

Some system should be devised whereby each case, when death occurs, be investigated and a history secured through the medical man certifying to the cause of death. This should not be very difficult. It would form most valuable data upon which to base some active work towards the special study of cancer, its cause, distribution and prevalence throughout the province. Whose duty is it to inaugurate and undertake this work?

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**Special Legislation,** in all our provinces, affecting the medical profession, or relating thereto, should be carefully watched by the constituted bodies of that profession. It is not to be supposed that this is solely in our own personal and selfish interests, for the medical profession has a heart for all good measures affecting the public at large. The aim in medical life is as much to prevent disease as to cure it.

Within the past two and a half decades, the period of time in which preventive medicine has been outstanding, and almost predominating, the death-rate is twenty-five per cent. lower than formerly. It is asserted that the average span of life has lengthened at least a decade. Diseases, formerly prevalent, have become almost curiosities, and many are disappearing. There is no profit in all this to a profession which would gain financially were it otherwise. The income of the average medical man has diminished. He is clearly working not so much for himself as for the community.

The profession has not benefited from the legislation the medical man has urged. He has been a consistent advocate of vaccination, inoculation against typhoid, immunization treatment for prevention from diphtheria, safe water supplies, clean, safe milk and

food, the medical supervision of school children—in fact, everything furthering sanitary science and preventive medicine. What has the other fellow been doing? Knocking! Suggesting nothing; but cutting in upon the bare moiety of practice left the educated, skilled, trained practitioner.

The men in high places, however, are generally speaking, men of keen insight and well seized of the great self-sacrifice of the profession of medicine. They realize the abundant proofs produced. They are not unmindful of the dangers of free medicine. Fortunate is it that in most cases they are guided by the past work and present conditions—by its training and experience which affords a clearer understanding.

Educational requirements cannot be too strict as regards the healing art. Influence and politics must have no part in such a question. And surely the medical profession is asking no favor for itself in asking that all forms of treatment of the sick require the very best educated, scientific, and trained minds any country can produce.

The healing art is too sacred to be trifled with for monetary gain. If the medical profession had not always recognized that altruistic principle, they would never have given freely of their services to the poor, to the hospitals, and to everything which tended to the conservation of the morality, the health and the lives of the people. That is the corner-stone upon which it has been built; its professional house is founded upon that rock.

There may be wise men yet who assert that the people should be left their superstitions, as they have their movies, etc.; that the people have always been fond of the prodigies, the fortune-tellers, the pilgrimages, and the quack-doctors. That may have done for the nineteenth and previous centuries. But in a century boasting of its education and culture, in a century damned by the most horrible war in all history, where humanity is fighting for liberty and right, a new era of right and justice to all must surely be born.

Justice and right must take the place of trickery, quackery, roguery and superstition.

## Editorial Notes

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### ONTARIO MEDICAL ASSOCIATION

Provisional Programme.

Tuesday, May 25.—Registration.

Wednesday, May 26.—Morning: Registration. Afternoon: Business—General Session. Evening: General Session; President's Address; Address in Medicine.

Thursday, May 27.—Morning: Sectional Meetings. Afternoon: General Session; Business Meeting; Address in Surgery. Evening: General Session; Symposium on Heart.

Friday, May 28.—Morning: Sectional Meetings. Afternoon: General Session; Business Meeting.

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### BELGIAN MEDICAL AND PHARMACEUTICAL RELIEF

A meeting of the Canadian Central Executive Committee for the relief of the Belgian Medical and Pharmaceutical profession was held February 19th in the Academy of Medicine. Subscriptions to this most worthy object of relieving the medical men in Belgium are commencing to flow in; \$2,500 has been already subscribed, and the treasurer of the fund, Dr. Wishart, 47 Grosvenor Street, has forwarded \$1,500 to the Central Executive for Great Britain for distribution. It was thought best to co-operate with the English committee, of which Sir Rickman Godlee, President of the Royal College of Surgeons, is the chairman.

Sir Rickman wrote as follows to Dr. Bruce, Chairman of the Canadian Committee:

"As to the distribution of funds, it would be as difficult for Canada to ensure that proper use is made of any immediate personal relief they may send to Belgium, either in kind or money, as it is for the Mother Country. We have to do what we can in that way through the instrumentality of the International Commission for Relief in Belgium, which is chiefly in the hands of the United States, who are acting with great energy and efficiency in this direction. It would be highly gratifying to our Committee if the duty of distributing the Canadian fund was intrusted to it, but this is a matter for the Canadian Committee to decide.



“Whatever course the Canadian Committee adopts it is earnestly hoped that a considerable proportion of the collected funds will be reserved for the important purpose of reinstating the Belgian doctors and pharmacists at the termination of the war, or when Belgium can be re-occupied by its own population. When that time comes it will be well for the Canadian Committee, that of the United States, and other committees to consult and co-operate with one another in order to avoid the waste that may result from overlapping, if each body were to work independently of the others.”

### A STRIKING COMPARISON

In his annual report to the President of the Local Government Board, Dr. Arthur Newsholme gives some remarkable figures showing how the health of the nation has improved within the past twenty-five years. In the period preceding 1890 the Public Health Act of 1875 was gradually making itself felt on the administrative work of the country; but the changes it brought about were so numerous that its real effect could not be demonstrated with any degree of certainty. Since 1890, however, we have had more trustworthy data, and taking the returns of 1913 and making a comparison with those of the decennial period 1891-1900, the result is indeed remarkable. Thus, in 1913 the rate of infantile mortality had declined 29 per cent., the death-rate from measles 32 per cent., from scarlet fever 64 per cent., from whooping cough 62 per cent., from diphtheria and croup 55 per cent., from enteric fever 77 per cent., from all forms of tuberculosis 33 per cent., and from pulmonary tuberculosis 28 per cent., from puerperal diseases 27 per cent., from pneumonia 17 per cent., and from bronchitis 41 per cent. It is worth while to pause and read over again these figures and then endeavor to understand their real meaning. First, we have many thousands of lives preserved to the nation—a most important fact at the present grave crisis in our history. Immense suffering has been prevented, and the nation is healthier to-day because of the great reduction in deaths from the diseases enumerated. With a lessened record of zymotic disease the new race of children and young people must be stronger. That is the result of the improvement. But the record means something more. The policy of insisting on preventive measures as being the most vital and important could not be more strikingly vindicated. A clean town with well-swept streets and thoroughly good drainage; with watchful care exercised by the Medical Officer of

Health and often unpleasant duties conscientiously and faithfully performed by the Sanitary Inspector—these are the “trenches” which bar the advance of disease and because of their existence the health of the people has been improved and life itself has been lengthened. True, we may not have accomplished all that Southwood Smith, Rawlinson, and Richardson desired; yet we believe that had they lived till this day they too, would have rejoiced in the solid progress now reported. Let the croakers, so fond of shouting “degeneracy,” turn to Dr. Newsholme’s report and note the second paragraph. “*The death-rate from all causes has declined 25 per cent. between 1891-1900 and 1913.*” No better praise could be given to the health workers of the present century, and in every office throughout the country these words should be inscribed as a testimony to the great work accomplished by a band of quiet, unobtrusive, industrious and earnest men and women. We thank Dr. Newsholme for his word of cheer and record of advance.—*The Sanitary Record.*

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### THE UNIVERSITY OF TORONTO AND THE PRESENT WAR

Though the military organizations of the Canadian Colleges were in a much more rudimentary condition than those of the British Universities, a large contribution has already been made to the Army for the present war from their graduates and undergraduates.

The following is an account of what has been done by the University of Toronto:

#### FIRST CONTINGENT.

Officers—Lt.-Col. C. H. Mitchell, B.A.Sc., member of the Board of Governors; Lt.-Col. R. D. Rudolf, Professor of Therapeutics; Lt.-Col. W. A. Scott, Associate in Surgery; Major P. Goldsmith, Demonstrator in Oto-Laryngology; Captain G. R. Philp, Demonstrator in Anatomy; Captain P. K. Menzies, Assistant in Clinical Surgery; Captain G. A. Cline, Instructor in University Schools; Captain C. E. Cole, Demonstrator in Therapeutics; Dr. B. E. Clutterbuck, Assistant in Gynecology; Dr. A. J. Mackenzie, Demonstrator in Medicine, and Mr. E. Owen, Lecturer in German.

According to our most recent information there are, besides the members of the staff, 134 graduates and 86 undergraduates, and of these 137 are officers and 83 privates. The chief elec-

trician and several of the laboratory assistants are also on service, and their places are being kept for them. Professor de Champ, and Messrs. Balbaud and Bibet of the Department of French in University College have been serving with the French Army since the beginning of the war.

#### SECOND CONTINGENT.

Officers—Lt.-Col. Fotheringham, Associate-Professor of Clinical Medicine, is Chief Medical Officer. Other members of the staff who have been giving their time in preparing for its mobilization are: Captain J. A. Amyot, Professor of Hygiene; Lt.-Col. J. A. Roberts, Demonstrator in Clinical Surgery; Lt. G. B. Strathy, Demonstrator in Clinical Medicine; Lieut. Bruce Robertson, Assistant in Pathology.

At present our information is quite incomplete, but we have the names of 53 graduates and 63 undergraduates who have been accepted.

#### ACTION OF THE SENATE AND FACULTIES.

At the opening of the session the Caput, Senate and the Faculty Councils passed regulations to provide that standing should be granted to those who by reason of enlisting had been unable to take their September supplementals; also, that those who had enlisted, or who would do so, should be shown the utmost consideration at the end of the session that the University's duty to the public in maintaining professional standards will allow.

It was further decided to discontinue all teaching and laboratory work after four o'clock in the afternoon in order to enable students to take the courses of drill and instruction required by the regulations of the Officers' Training Corps.

#### THE OFFICERS' TRAINING CORPS.

In view of the probable establishment of an Officers' Training Corps in the University, a score of junior members of the staff began about September 15th to take drill and instruction to qualify themselves to become officers in the new corps. About October 20th authorization was received from the Militia Department. Dr. W. R. Lang, Professor of Chemistry, who with the concurrence of the Board of Governors had volunteered for active service but was appointed Instructor for this Military Division, was made Colonel of the new corps. Messrs. C. S. McVicar, A. D. Le Pan, G. N. Bramfitt, C. H. C. Wright, R. H. Hopkins, G. H. Needler,

F. C. A. Jeanneret, L. Gilchrist, M. W. Wallace, G. O. Smith, C. N. Cochrane, C. V. Massey, G. M. Smith, E. J. Kylie, G. S. Brett, E. S. Ryerson, A. F. Coventry, G. Gallie, W. F. McPhedran, R. G. Armour, D. Graham, C. R. Young, D. G. Hagarty, A. M. Thomas, A. W. McConnell, W. M. Treadgold, B. M. Morris, H. H. Madill, J. R. Cockburn, J. R. Mitchener, V. E. Henderson, H. R. Hopkins, A. R. Leggo, W. S. Wallace, H. G. Manning, all except three being members of the staff, have been appointed officers. The students enrolled enthusiastically, and though the strength authorized as yet is only 1,000, over 1,800 have been taking drill.

On Friday, January 22nd, 1,500 students with their officers were reviewed by His Royal Highness the Duke of Connaught. He addressed them in part as follows: "I wish to express to you my very great satisfaction with the splendid turnout you have given me this evening. When I looked at you and saw how you stood to attention and the admirable way in which you marched past, I saw that your work since you were formed, a very few months ago, has been performed with a will, and I can honestly say that I have never seen better results than you have shown me to-day.

"What pleases me still more is the splendid example you young gentlemen are showing to the whole of Canada. You have come forward at a moment when every man that is able to do anything to help the Empire in a time of stress is needed, and you have done so readily and in a most efficient manner.

"As an old soldier and as Governor-General of Canada, I wish to say that no parade that I have seen—and I have seen many lately—has given me more satisfaction than your parade this evening."

#### THE WOMEN STUDENTS.

At the same time the women students of the University have shown their determination to be of service by occupying the hours from four to six in the afternoon, when there is no instruction given in the University, with sewing and other work for the Red Cross Society.