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Original Articles

SARCINAE OF THE STOMACH AND THEIR DIAGNOSTIC VALUE

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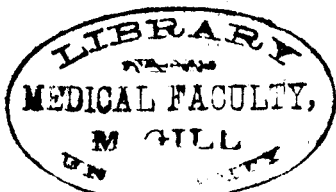
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The occurrence of gastric sarcinae in the contents of certain affections of the stomach was first called attention to by Goodsir in 1842. Since then, Falkenheim, Richter, and many others have contributed to the literature of the subject. Still, there is very little known concerning the cultivation of the micro-organisms; and the diagnostic value of their presence in the gastric contents is to a considerable extent undetermined.

As far as we know gastric sarcinae are peculiar to the stomach. They are formed sometimes in the feces, but never, except when present in the stomach; and it is very probable that the primary growth of the germ never occurs in the intestine. The origin of the growth in the stomach has never been solved. The shape, size, and other characters of gastric sarcinae indicate that they have practically nothing in common with the pigment-forming sarcinae of the air.

Morphologically, there are two forms of sarcina ventriculi, which are, however, probably different stages of development of the same organism. One, sometimes called the large-celled variety, is characterized by the cells exhibiting an arrangement known as the bale shape and staining yellow with Lugol's solution; the other, a small-celled form with cocci in irregular groups and not staining with iodine. Both forms are always found together, although the growth of one may preponderate. The characteristic form of the bale-shaped variety renders it easy of detection.

What is the diagnostic significance of sarcinae in the gastric contents? In general, stagnation of gastric contents tends to pro-



duce growth of germs—the greater the stagnation the more luxuriant the growth. In the case of gastric sarcinae, retention of food is generally necessary for, when these micro-organisms are found in the contents of the stomach, advanced organic obstruction of the outlet of the stomach is almost always present. To find sarcinae without obstruction has never been the experience of the writer. A transient occurrence of the germs has been observed without stenosis of the outlet by some clinicians, but even this has never come under his personal observation.

R. Schmidt states that he found sarcinae ventriculi in a case of cancer of the œsophagus and also in a case of gastric adhesions due to tuberculous peritonitis. These are, however, very exceptional findings. In practice, the presence of sarcinae in the gastric contents should be looked upon as suggesting obstruction of the outlet of the stomach; and the physician should then proceed to make a further examination for the same condition by means of motor meals, radiographic examination, etc.

It should be remembered, however, that although sarcinae ventriculi suggest obstruction of the outlet of the stomach the converse is not true for, in a considerable proportion of cases of pyloric obstruction, sarcinae ventriculi are never present.

The condition of the secretory function is a factor in determining the growth of sarcinae as it is of most other organisms. The sarcinae ventriculi appear to grow best in the presence of a good deal of free hydrochloric acid. This is in marked contrast to the growth of Boas-Oppler bacilli, which is most luxuriant in the absence of free hydrochloric acid. Sarcinae, however, will grow in hyposecretion of gastric juice and even in the absence of free hydrochloric acid, and Boas-Oppler bacilli are not uncommon in the presence of free hydrochloric acid. In the differential diagnosis of benign from malignant obstruction of the outlet these facts must be kept in mind.

In pyloric obstruction due to peptic ulcer common findings are normal or excessive secretion of the gastric juice and sarcinae ventriculi. If in such a case cancer becomes engrafted on the ulcer there is generally, for a time, no marked change in the gastric juice. Frequently, however, after a few weeks, there commences a gradual diminution of gastric secretion. Then, both the Boas-Oppler bacilli and sarcinae are frequently found in the gastric contents. This diminution of secretion may continue until free hydrochloric acid is no longer found, but both micro-organisms may still be present. This renders the differential diagnosis of cancer and peptic ulcer difficult in such cases. The test of Wolfe

or of Solomon may be of aid in clearing up the subject, but in some cases it cannot be done without an exploratory incision.

Again, in some cases of pyloric obstruction due to cancer, sarcinae without the Boas-Oppler bacilli may be present in the gastric contents. Moreover, this may occur in the absence or presence of free hydrochloric acid. It is probable in most of these cases that a simple ulcer existed prior to the cancer. This sequence does not exist in all, for it is not rare to find cases in which the previous history does not even suggest the presence of peptic ulcer.

As stated above, sarcinae in the gastric contents occur only in a high degree of stagnation of food. This fact may aid in the diagnosis of a gastric disease of short duration, because it is to be expected that a rapidly developing pyloric obstruction is more likely to be malignant than benign. This, however, is not always true. At least three cases of pyloric obstruction of a high degree, caused by peptic ulcer, with a history of gastric symptoms of a duration of about three months, have come under personal observation. In all these cases the ulcer was situated in the pylorus, which would explain the rapidity of the development of the obstruction. If a peptic ulcer were situated only adjacent to the pylorus, a high degree of stagnation of food would not likely result in a few months.

SUMMARY.

1. Sarcinae in gastric contents indicate, as a rule, a high degree of stagnation of food in the stomach.

2. The presence of sarcinae in cases characterized by normal or excessive acidity of the gastric juice is, in most cases, due to a benign disease.

3. The presence of sarcinae alone or sarcinae along with Boas-Oppler bacilli, in cases of gastric disease of a few months' duration, is frequently due to a malignant process.

4. The finding of both sarcinae and Boas-Oppler bacilli in the gastric contents, characterized by the absence or presence of free hydrochloric acid, may be either due to cancer or peptic ulcer, but is more likely to be the result of the former than the latter disease.

*** THE TREATMENT OF TIC DOULOUREUX**

By G. W. Ross, B.A., M.B., TORONTO.

The vast majority of patients suffering from this distressing malady can be very quickly and easily relieved by intra-neural injections of alcohol.

The nerve selected for such treatment depends upon the site of origin of the pain and spasm, and commonly this will be within the area whose sensory supply is derived from either the infra-orbital, inferior dental, or supra-orbital branches of the trigeminal nerve. At times all three are involved, seldom primarily, but often secondarily. Occasionally the inception of the pain will be outside the limits of the sensory innervation of these three nerves. Then it may be necessary to inject with alcohol the supra or infra-maxillar branches as they emerge from the base of the skull.

This, however, is seldom necessary, as almost all cases can be relieved by injection of the terminal branches mentioned above—a comparatively simple procedure which any of us might fairly undertake. Not so, however, when the larger branches demand attention. This should be left to some one with special knowledge of the necessary technique. Dr. Primrose has kindly helped me out with such cases.

The substance injected: Alcohol, 85%; novocaine, 1%; meets all requirements.

Amount used: For the supra-orbital and inferior dental branches, 5 c.c. is sufficient.

For the infra-orbital branch 1.00 c.c. should be administered and for the infra and supra-maxillary branches 1.5 c.c.

Where is the injection made? As the case may be: At the mental foramen. At the infra-orbital foramen. At the supra-orbital foramen or notch.

Technique.

Hands, the skin of the patient, and instruments are all carefully sterilized.

The hypodermic syringe is loaded and plunged quickly through the skin to whichever foramen we are attacking. If we

*Read at the Symposium on Headache, at the Section of Medicine, Toronto, Academy of Medicine, November 10, 1914.

are successful in striking the nerve all the manifestations of excruciating pain are evidenced, and then, immediately, the charge of alcohol is driven home.

The immediate results when the nerve has been successfully injected.—As a rule anaesthesia over the area innervated by such nerve.

Note.—This may be delayed for several days even after a successful injection.

Relief of the paroxysmal pain is often instantaneous, but frequently may be postponed for several days. Relief usually is complete for at least six months and often for one to one and a half years. The average is about ten months when re-injection is necessary.

How does the alcohol act? The intra-neural injection of alcohol induces a chemical resection of the nerve with peripheral degeneration beyond the point of injection. When regeneration of the nerve occurs, then the pain of the tic returns and another injection is necessary. I have already injected several of my patients three or four times.

In very severe cases, only removal of the gasserian ganglion will be effectual.

Hemicrania.—This disorder is often called *migraine*, but since the term *migraine* is loosely applied to any sick headache the term *hemicrania* is advisable.

This headache so-called should probably be considered a clinical entity akin to epilepsy. There is the hereditary tendency, the aura and the seizure. The aura is commonly ocular—flashes, or zig-zag splashes of light, etc. Shortly after there follows pain, usually very localized in one or other temporal region (seldom in both). From this confined area, the pain radiates over the whole of one side of the head, occasionally in severe attacks reaching the neck. There is no tenderness. The angular and perhaps the auriculo-temporal arteries seem distended and visibly pulsate while the sufferer is obviously agonized with pain. Nausea soon supervenes, and is often followed by vomiting and prostration, which lasts from some hours to a day or two. Suddenly relief comes, and the next attack in a week or a month or two is awaited.

The underlying causes of this distressing malady are unknown, and so we are helpless to prevent attacks. I recall one case where calcium therapy seemed to have helped and another where appendicectomy marked complete freedom from attacks. It seems to me possible that a chronic focus of infection some-

where within the body may ultimately be proved to play a part in the causation of hemicrania.

TREATMENT.

Immediately upon the advent of the aura administer a saline purgative, and fifteen or twenty minutes later one should use one of the coal-tar products.

The following is a useful prescription:

R
 Phenacetine grs. $2\frac{1}{2}$
 Ammonol grs. $1\frac{1}{2}$
 Caffeine grs. 1
 Fiat Cap. No. 1.
 Mitte, 12.
 Sig.—Three at once and repeat in half an hour and again in four hours if necessary.

Another useful combination is:

R
 Antipyrine grs. 8
 Caffeinae Citratis grs. 5
 Misce.
 Fiat pulv. No. 1.
 Sig.—One and repeat in two hours if necessary.

I usually advise a very hot hip-bath for a period of fifteen minutes, and one half-hour after the aura a large simple enema.

From the very first of the attack the patient should lie down, if possible, in a quiet, half-darkened room, alone. No food should be taken, and only sips of ice-water to quench the thirst.

A menthol pencil rubbed on the skin in the temporal region is comforting.

Upon two occasions an attack has been almost immediately controlled by injecting into the focus of the pain about 1.5 c.c. of novocaine. This simple procedure seems worthy of further trial.

Once the cephalalgia and gastric symptoms have been established the treatment is purely symptomatic.

Maintenance of the general health of the subject of hemicrania seems to avail little or nothing in preventing recurrence of attacks once the tendency has been established, but errors of

refraction should be carefully sought for and corrected and insomnia controlled. We should also take those measures which increase the calcium content of the blood. These will be discussed later in connection with the next class of headache, namely, that associated with so-called lymphorrhagia. This term has been applied to that blood state where the lymph escapes too readily into surrounding tissues, thus flooding the lymph channels with fluid. Water-logging of the tissues ensues and with this a number of symptoms and signs.

Briefly these are:

- 1st. The appearance of anæmia without anæmia in any sense.
- 2nd. Shortness of breath.
- 3rd. Discomfort immediately after food.
- 4th. Constipation.
- 5th. Hæmatogenous albuminuria at times.
- 6th. Dysmenorrhœa at times.
- 7th. Oedema, chilblains, pruritus and urticaria.
- 8th. Headaches of a definite type.
- 9th. A lowered coagulability of the blood with a deficiency of the salts of lime.

The headache is peculiar in its symptomatology as follows:

1. It is always worse in the morning, tending to lessen in intensity as the day wears on until by the evening it has quite disappeared. Then the patient feels exceedingly well and the mental processes are active. A heavy sleep follows, succeeded by lethargy, physical and mental; headache and anorexia on waking. Such a patient always finds it difficult to get the machine going for his day's work.

2. A peculiar perversion of appetite is characterized, namely: An abnormal desire, commonly gratified, for very acid things—such as grape-fruit, oranges, vinegar, table salt, etc.

Sweets are distasteful.

TREATMENT.

Dietetic.—Forbid all substances which lower the coagulability of the blood, such as:

- Fruits (cooked or raw).
- Tomatoes.
- Rhubarb.

Vinegar, etc., should not be taken.

And shell-fish.

Ordinary table salt should be used only in small quantities.

Cow's milk is beneficial on account of the lime contained in it.

SPECIFIC.

The administration of a soluble and absorbable salt of calcium the following is a useful prescription:

R

Calcii lactatis	2 drachms
Elixir saccharini	M. 40
Essence zingiberis	1 ounce
Aquae ad	ozs. 8
Sig.—4 drachms ex aquam.	
T.I.D. A.C.	

This should be taken for several weeks, and then omitted until there is a return of symptoms.

Symptomatic.—Control of constipation is important.

An effectual headache powder is justified for immediate control of the cephalalgia.

*** A CLINICAL LECTURE ON FURUNCLES AND FURUNCULOSIS**

BY SIGMUND POLLITZER, M.D.,

Professor of Diseases of the Skin in the New York Post-Graduate Medical School and Hospital.

Gentlemen:

Everyone knows how to treat boils. In fact I think I may say that everyone knows how to treat boils better than everyone else! If, in the face of this prevailing opinion, I venture to describe my method of treating boils and to insist that it is a good method well worthy of a trial, it is because I have tried many methods of treatment, and have, therefore, a basis for comparison, and because I have had perhaps a larger experience in this field than most of you. Let us, first, be clear as to what a boil is. It cannot be necessary for us to dwell on the absurd popular view that a boil is due to some impurity in the blood which is making its way out of the system by way of the skin. A boil is produced in one way and in one way only. It is the result of an infection of the skin with the staphylococcus aureus by way of a hair follicle. The disease can be produced at will on the skin by the simple process of rubbing some of the germ-laden pus from a boil with gentle friction into the unbroken skin. I say gentle friction because if the epidermis is injured by the friction the infection takes place directly into the cutis and travelling down to the loose cellular tissue of the subcutis may give us a diffuse phlegmon (or cellulitis, to use a bad term) instead of the circumscribed phlegmon that results from the infection by way of the hair follicle.

The first effect of the beginning activity of the infecting organisms is manifested clinically as a minute red papule, which itches and smarts a little. The centre of the little papule is pierced by a lanugo hair, showing that the process is localized in a hair follicle. The next day the papule is considerably larger and at its apex a minute vesicle may be seen filled with purulent serum. This vesicle is soon ruptured by contact with the clothing or the finger nails, and its place is taken by a small crust or scab. The little papule meanwhile increases in size, the area of redness extends, the infiltration becomes more marked, there is a prominent, painful, throbbing tumor, the pain is severe enough to interfere with the patient's

* Selected from The Post-Graduate.

rest, and there is perhaps a slight rise of temperature at night. Four or five days after the beginning of the process a drop of creamy pus makes its appearance at the side of the little crust that caps the tumor, and the crust may be lifted off, only to reform during the next day, but within 24 to 48 hours after the first appearance of the drop of pus there is often quite suddenly—after some muscular strain, such as coughing, sneezing, etc.—a considerable discharge of pus, together with some necrotic shreds, one of which is usually of considerable size and is known as the “core” of the boil. The virulent organisms that have produced the circumscribed inflammation of the pilo-sebaceous follicle and the surrounding tissue had killed the central portion of the affected area *en masse*, and it is this central necrotic mass that constitutes the “core” of the boil. The core itself is loosened at its peripheral surfaces by autolytic processes and it is the fluid that results from this autolytic liquefaction at the sides of the central mass that first makes its appearance as the drop of pus that exudes from under the little crust. With the discharge of the core the painful symptoms subside at once; the swelling decreases, the vivid redness grows paler and the infiltration palpably less. Pale granulations soon fill up the gap left by the loss of tissue, the epidermis pushes forward over the opening at the surface, and in 10 days from the beginning of the process as a minute red papule, the boil is gone, leaving only a small area that remains reddened for a few weeks and a scar that will persist through life.

Boils differ in size from a moderate papule to a large tumor with an infiltration a couple of inches in diameter, but even the largest furuncle is not a carbuncle in which the inflammatory suppurative process extending down to the subcutis spreads laterally through the areolar tissue there, constituting a deep cellulitis with ascending channels of suppuration that reach the surface in a series of furuncular points surrounding the primary site of the infection. A carbuncle is always a grave infection and requires prompt surgical treatment, while boils are always the effect of a direct local infection with the staphylococcus aureus. It must be remembered that all individuals are not equally susceptible to this infection. Some people enjoy a high degree of natural immunity while the tissues of others offer a peculiarly favorable soil for the germs. Systemic conditions favoring the development of boils are the state of physical depression following any acute illness, gout, nephritis and especially glycosuria. In these systemic disturbances a furuncle should always be regarded as a possible serious affection, and the first to make its appearance must

not be neglected, lest on the favorable soil a crop or succession of boils follow the first and constitute a serious complication in the weakened patient which may even lead to death.

It must be borne in mind that a single furuncle is not only the effect of the invading germs, but is also a factory for the production of germs, and the pus exuding from it loaded with virulent cocci spread upon the skin by the clothing, the dressings and the fingers of the patient or his attendant readily leads to a multiplicity of furuncles, constituting the state of furunculosis.

As to the location of boils, while a single boil may make its appearance anywhere on the skin, it is a fact that in males fully ninety per cent. of solitary boils are located on the back of the neck, and in women, who are far less prone to furuncles than men, boils are rarely found in this location, being more common on the trunk, especially about the axilla and near the breasts. In general there is much significance in the popular saying that boils come where they are most in the way; that is, they are located where the integument comes most frequently in contact with hard, external objects—the starched collar in men, the corset in women. Other favorite sites for boils are the wrists (stiff cuffs) and the buttocks and back of the thighs (hard chairs). The rôle of these external objects in producing boils is obvious; the infecting organisms reposing harmlessly at the orifice of an intact hair-follicle are forced into the follicle and the walls of the latter, damaged by contact with and pressure from the firm external object, and once within the follicular wall the furuncle is started.

I have dwelt on these general considerations of etiology and pathology because they are important for the proper understanding of the treatment. We can do little to prevent the occurrence of a boil. Cleanliness is, of course, an important factor, and indicates the regular prophylactic employment of some mildly antiseptic soap, such as synol soap or ichthyol soap in those in whom we have reason to fear the occurrence of furunculosis, such as the diabetic. But on the other hand the most cleanly people are often the victims of furunculosis, and indeed too much bathing may directly increase the probability of infection through the irritating, drying effect of soap and water on the skin. But after a boil has once begun we can generally abort it, cut short its career, by prompt measures. The little papule should be painted at once with tincture of iodine, and this application repeated twice more in 24 hours. Further applications are useless; if the boil does not manifestly subside after three applications of iodine, a further application only complicates the condition by rendering the epidermis

tough and resistant. If the applications of the iodine are made in the earliest stage of the process you may count on aborting the boil; and in those subject to furunculosis every little inflammatory follicular papule should be regarded as a possible boil and treated accordingly. When the patient comes to us with a furuncle beyond its early stage, abortive treatment is useless, and we must direct our efforts toward relieving pain, shortening the normal duration of the boil and preventing further infection through the careless spread of infection matter over the surface by means of the fingers, the clothing, etc. I could fill the hour with a recital of the various methods of treatment that have been recommended for the accomplishment of these indications, but I propose to limit myself to an account of the method which I have found most efficient and most agreeable to the patient. Let me say at once that I do not incise a boil. A good incision, it is true, by relieving the tension of the epidermis, relieves the pain. But it accomplishes this at the expense of a great deal of pain to the patient, and beyond this it accomplishes nothing. The same end can be obtained by more agreeable methods. In the first place, the patient should receive at once a hypodermatic injection of about 400 million dead staphylococci, that is, the so-called vaccine of furunculosis than which theoretically the autogenous vaccines would be more efficient. We cannot wait for the bacteriologist to prepare a vaccine for each case, and as a matter of fact I have found the stock furunculosis vaccines to be obtained at every druggist's to be sufficiently effective. You know from our previous talks that I personally am not very much impressed with the value of the vaccine treatment of diseases in general. For most infectious diseases I think vaccines quite useless. But of their effect in furunculosis, one who is familiar with the normal course of a boil cannot fail to be convinced. A large, hard, painful, throbbing boil, say on its third or fourth day, will within twenty-four hours of the vaccine injection be softened down, the infiltration manifestly subsided, the pain greatly diminished or gone, and the discharge of a thin pus indicates the stimulation of the autolytic process which goes on till the central necrotic mass itself is liquefied and the boil heals without the discharge of a core. This, gentlemen, is the rule with well-advanced boils. Sometimes even in this stage the boil is aborted by an injection, the pain and inflammation subside, the infiltration slowly is absorbed and the boil disappears without breaking down and discharge. In the earlier stage of the infection the vaccine injection aids obviously in aborting the boil. In any event the vaccine treatment is indicated as a means

of increasing the resistance of the patient and reducing the liability to further infection. For this purpose a series of injections should be given at intervals of four or five days, four or five injections are usually sufficient. Sometimes—for unknown reasons—the vaccine treatments fail to give the expected result, and it is useless, perhaps harmful, to continue with them. I have recently seen a case of furunculosis in which the medical attendant gave no less than twenty-four injections of an autogenous vaccine and fresh boils continued to appear. I cured this patient promptly by purely external applications.

The external treatment which I employ consists in the application of a plastic, first recommended by Dr. H. G. Klotz, of this city, made according to the following formula:

Emplastic diachyli	60
Emplastic Saponis	25
Cerae Japonicae	2
Petrolati	8
Acidi salicylici	5
M. ft. emplastrum lege artis.	

It is useless to hand this prescription to your patient and tell him to apply the stuff. It will take the druggist a day to make it, and at his first attempt he will probably make it badly. I advise you to give the formula to a druggist in your neighborhood and direct him to put up a quantity of the plastic and keep it in stock, rolled in sticks of about a half ounce each, wrapped in paraffined paper, in which it will keep indefinitely. The patient is instructed to spread the plastic by means of a stiff knife on a sheet of common muslin (sheeting), "like butter on bread," and apply a sufficiently large piece of the spread plaster, say one to two inches square, centrally over the boil. The effect of this plaster is almost immediate. The plaster acts as a cutaneous splint to protect the tender area, it softens the epidermis and thereby relieves tension quite as effectively as an incision; it softens and removes the little crust at the summit of the boil and thereby facilitates the discharge of the pus, and finally it serves as an occlusion dressing and by preventing the accidental spread of infectious matter over the skin reduces the probability of fresh infections.

The plastic should be changed—applied fresh—at first once a day, later when the boil is discharging freely twice a day, and perhaps three times on the day of the discharge of the core. To

cleanse the skin from the adhering traces of the plaster, to remove it from the fingers and the knife and scissors used, a pledget of cotton wet with benzine should be used. At each change of dressing the boil should be gently squeezed—with emphasis on the “gently”—to remove the droplet of pus that is ready to come out, and the pus itself wiped up—not smeared about—with a bit of cotton moistened with a bichlorid solution and squeezed dry. It may be well, too, at each change of dressing to soak a considerable area of the skin around the boil for five minutes with a layer of cotton thoroughly wet with a bichlorid solution to kill any superficially located germs.

Gentlemen, I beg you to believe that by the methods which have been outlined you will come nearer than by any other method I know to attaining the therapeutic ideal and cure your cases of furunculosis *tuti cito et jocunde*.

LIMITATIONS OF BRONCHOSCOPY

CHEVALIER JACKSON (American Laryngological Association).
(Pittsburg.)

After a long series of successful bronchoscopic foreign body removals one is apt to think that there are no limitations to bronchoscopy. The author had had five failures, one of which he excluded because he alone had bronchosoped the case and permission for a second bronchoscopy had been refused. The other four cases had been attempted by two or more other bronchoscopists, and therefore might be said to define the limits of bronchoscopy. The limitations of bronchoscopy were reached in the inability to find a small foreign body far down and far out at the periphery of the lung, rather than in a failure to remove when found. The limitations in a particular case could not be said to have been reached until bronchoscopy had failed at the hands of at least two bronchoscopists of experience. Then thoracotomy should be done immediately, without waiting for pus formation. In his own cases the author would not feel justified in advising thoracotomy until another bronchoscopist besides himself had failed. Waiting for a foreign body to be coughed

up was inadvisable, because, as shown by Delavan, even after expulsion, death had followed from disease meanwhile set up.

Dr. Cornelius G. Coakley, New York City: With regard to the case of 1908, referred to, this woman had held a pin in her mouth; it was one with a white bead head and was about an inch long. She also had a very large goitre which had compressed and dislocated the trachea so that it was practically impossible to pass a bronchoscope down to the trachea. We could not use force enough to pass it below the compressed area of the trachea as far down as the bifurcation. A tracheotomy was done and then a subsequent attempt was made to get the pin; the patient coughed and I lost the pin, which went down further with the point up, and although I was able to see it, I was later unable to get it. Dr. Jackson did not even see the pin. I think there is no question that had the modern methods of lung surgery with the intratracheal anesthesia been then developed, it would have been a perfectly safe and probably successful procedure in removing the pin. This attempt took place in about the first three weeks of the involvement. Dr. Jackson, in his modesty, did not tell you of another case. Dr. Jackson very kindly came to Rochester about two years ago to see my sister-in-law, who had inhaled a piece of orange peel through the larynx into the trachea, and developed soon after a very severe irritating cough and bronchitis, forgetting all about the original cause until about two weeks after the accident, when the physician discovered this localized bronchitis and could not understand why it was localized until he got this history. Moreover, the fact that on two or three previous occasions some similar foreign body had been taken in during the process of mastication, coughing and inhaling, and each foreign body had been expelled within a few hours or two or three days after the accident. A radiograph showed considerable involvement of that side of the lung, but air could get in. After a physical examination Dr. Jackson decided, although there was nothing showing in the radiograph, not to do a bronchoscopy. The patient developed an abscess there and a bronchiectatic abscess or abscess of the lung, and discharged pus in great quantities and lost fifty or more pounds in weight during the next six months. The sputum showed no evidence of tuberculosis. She made a good recovery after a year of suppurating process in the bronchus or lung about this bit of white skin from inside the peel of the orange. If Dr. Jackson had gone down and done a bronchoscopy, in all probability with his skill he would have found that piece of skin and removed

it and saved the patient the following dangerous, but fortunately not fatal, condition.

DR. THOMAS HUBBARD, Toledo: With regard to the limitation of bronchoscopy, this may often be established by the patient. Nothing is so exasperating as not to have your patient's support and that of his physician. Dr. Jackson will corroborate me in saying that secondary operations are very difficult ones without the full support of the patient and attending physician. On the other hand, occasionally the support of the patient is a factor in success. I recall a case of a woman who had a fragment of dental cement in the lower right bronchus, and one of these radiograms reminds me of it; it was located about the ninth rib posteriorly, with some months of ulceration, abscess formation, and all symptoms of tuberculosis. This woman's intuitive conviction that she had a foreign body there saved her life. Although two or three radiographs showed nothing, she insisted there was something there, and finally a competent roentgenologist located it. The first attempt at removal was a failure; the abscess cavity was full of pus and debris, and I could not locate the foreign body; the second attempt was made with a stereoscopic picture to guide us, and we successfully removed the foreign body and the patient recovered. Following the first operation I told her we had failed, but she said, "Never mind, you will get it the next time." That courage inspired us to do our best, and we were successful.

I recently had another patient with an upholsterer's tack in the right lung, who had been worked upon four hours consecutively by a bronchoscopist under local anesthesia. He had literally soaked the patient with cocaine and his courage never faltered. After four hours' trial he consented to another type of operation. This I deemed impracticable by the upper method, fearing laryngeal edema after such a prolonged use of the tube. So a low bronchoscopy was done and the foreign body was found. The previous efforts had turned it sideways and made it very difficult to extract. I must say that I doubt if the upper method could have reached the point of that nail, because it was so far to the right, and it was necessary in the introduction of the tube through the lower wound to carry it off at an extreme angle to bring the tack into the tube.

DR. EMIL MAYER, New York City: I recall being asked to see a boy who had a tack in his right bronchus, which had been there for more than a year, in the Presbyterian Hospital in New York. It was quite easy to do the bronchoscopy, but I simply could not see any sign of this tack. The bleeding was profuse and put me in such

position that I could not see any evidence of the foreign body, and I felt that here was one of the important rules to live by—"be sure you are right, then go ahead." It is possible if then I had known as much about using the powerful magnet as Dr. Iglauer has recently recorded, I might have been more successful.

In another instance, showing the difficulties of bronchoscopy, I was called recently to see a young infant of about thirteen months, who had inhaled an open safety pin. A picture showed the pin in the upper portion of the larynx, and the local physician thought he could get it cut by doing a tracheotomy. He failed. A second picture showed the pin had slipped down into the bronchus. It was not a difficult thing to introduce the bronchoscopic tube through the opening the physician had made, but the baby's condition was poor, and I could not find the pin; the child's condition becoming worse, I desisted, and a few hours later the child died.

Dr. D. Bryson Delavan, New York City: It is interesting to understand the limitations of bronchoscopy, but also to thoroughly realize what it has done for humanity, and we all recognize that it is purely an American invention. Dr. Horace Green was the first to promulgate this method of treatment. Before the days of bronchoscopy the inhalation of foreign bodies was necessarily fatal. I remember a case in the '80's at the New York Hospital, where a young trained nurse with pleurisy was placed in my hands, and we aspirated the chest. When introducing the cannula, and just as we had it well in position and were about to withdraw the blade, the girl made a wild movement of the arm, drawing it sharply back so as to break the needle close to the body, and by the time we raised her arm the needle had disappeared. We said nothing about it; there was a rise of temperature, but the patient got well. I followed her about twenty years, during which time she carried on her function as a nurse in excellent health.

Another case was a young farmer, who inhaled a full head of barley. The accident was followed by violent pneumonia and that by abscess of the lung, which broke through the outer wall of the chest, and in coming away the head of barley was found intact. He survived all of this. Such results are extremely rare.

Dr. E. Fletcher Ingals, Chicago: I am very glad that Dr. Jackson has brought up this subject, and I hope he will in closing say something about the limitations as to time. Dr. Hubbard spoke of some one working for four hours, and this impresses upon me the necessity of having a final word on the time one may work on such a case. For my own part, I have felt that we ought not to

work more than half an hour. When one feels the next second will be successful, he hates to quit; also when there is a good deal of secretion, you dislike to stop before you try once more. In some of these long drawn out operations, about nine-tenths of the time is occupied in swabbing and one-tenth in looking for the foreign body. If we say no case should be operated on for longer than one hour, we would not be far wrong; while half an hour is the limit in the majority of cases.

I have had my failures in getting out foreign bodies, and I have sweat blood over them. I have recently, as you know, written a short article on fluoroscopic bronchoscopy, which I think is going to be a great aid in certain cases. With foreign bodies which do not throw a shadow, we must still rely on ordinary bronchoscopy. When there is an abscess formation with much pus, it is often impossible to find the foreign body. When there is a stricture it is liable to be impassable. Fortunately, some of these organic substances will be coughed out, but I think that 90 to 95 per cent. of people will die from foreign bodies in three or four years from various abscesses, usually multiple, unless the foreign body is removed.

Dr. William E. Casselberry, Chicago: These bodies do not always stay put in the lungs; they are movable, some of them, and it may explain why some of them, such as collar buttons, etc., have not been found on bronchoscopic examination. This was illustrated in my practice by a large grain of raw corn, first in the bronchus of a very small child; the child was small, and I should perhaps have made a lower bronchoscopy, but I made an upper bronchoscopy, and although there was considerable difficulty in getting this tube through and in getting vision, it did go to where the skiagraph showed a spot which seemed to be the grain of corn, and this showed in four skiagraphs. It corresponded to a place where there was obstruction and density of air. I aimed for that spot with my very small bronchoscopic tube, and searched diligently, but found no grain of corn. Things were beginning to look very uncertain, when, on withdrawal of the tube, gradually and cautiously, just as my tube slipped out of the top of the larynx, the grain of corn popped into view beneath one vocal cord. In that position of the patient, with the head down, it had left its position in the bronchus, and slipped up.

Dr. Harris P. Mosher, Boston: I have put the limitations upon myself rather than upon the subject. Certainly, in the case where I hunted two hours the other day to find a foreign body, I felt the limitations were mine.

In one case, after the patient came out of ether, there was a right hemiplegia, but that was the first time it had ever occurred in any case I have had to do with. The question came up as to what was the cause, whether it was the heart condition, the strain of the cyanosis in a thick-necked individual, or an embolus.

There is another thing in connection with bronchoscopy. I have not seen it mentioned in the books, but it has occurred to me three times successively. This is a procedure that I do not feel like bringing before you, as it seems like going back to working in the dark. That is the old procedure of fishing. As you know, in many cases when you get the open speculum in, which was used before Dr. Jackson's speculum was devised, the cords stand very clearly apart and you look well down into the trachea. The trachea, however, is not likely to open. It occurred to me in such cases you might use the trachea for the tube in place of the bronchoscopic tube, in other words, having the cords well open, you could go down with your forceps and take a blind shot in the dark, knowing it was a blind shot. The first case of mine was in a two-year-old girl, who had a two-inch pin lying head up and across. In that case a blind shot, boxing the compass with my forceps, was successful. The second case was a fifteen-months'-old baby, who had a nail in the lower bronchus, head up, and in that case I decided to try a shot before putting the case under ether. I caught the head of the nail and brought it out. I just have had a third case in connection with Dr. Clark, in which a fifteen-months'-old baby had a peanut in the bronchus for three or four days; the trial of a luck shot here did not reveal anything. A luck shot in the right bronchus produced nothing, but in the left bronchus it brought out the peanut. If you will gauge the limitations and put a limit on yourself, it is worth while to try this shot in the dark, because it will sometimes work.

Dr. Chevalier Jackson, Pittsburg (in closing): In regard to Dr. Mosher's statement as to the limits, the point I want to make is that the difference between personal limitations and the limitations of the method are shown when two men have tried and failed, for then I think we can call that failure due to the limitations of the method rather than to personal limitations.

In regard to the case of embolus that occurred after a foreign body which was quite easily removed four weeks previously with no special difficulty. Either from a septic endocarditis or from the lung itself an embolus had gotten into the cerebral circulation. His physician reported the boy improved for almost a month and

gaining rapidly, when suddenly he had a convulsion with paralytic symptoms.

Dr. Swain raises a number of interesting questions in regard to anesthesia, but I have seen no reason to change my attitude in this regard from that of two years ago, especially in children under six years of age.

In regard to suspension laryngoscopy for foreign bodies, I have not tried it, and therefore am not qualified to speak; I have no doubt it has a large field of usefulness.

The limitations in regard to time were asked for by Dr. Ingals. Each must decide for himself. The limitations stated by Dr. Ingals are about right. If every man would publish the time used on every case it would be well. Half an hour for a child and an hour for an adult might be taken for a standard, to be modified in the particular case. My own personal limits have been in adults three and a half hours, but this patient had no anesthetic, he was a Marathon racer, an athlete used to enduring physical stress, and he insisted on my going ahead.

Dr. Ingals brought up the limitations in upper lobe bronchoscopy, which I am glad he called attention to. The limitations I spoke of were far out in the periphery in the posterior branch, too small for bronchoscopy. All were failures to find, not to remove foreign bodies after finding them.

Dr. Delavan referred to Horace Green's work; this is entirely new to me.

Dr. Mayer's and Dr. Hubbard's points bring up too much for this discussion. In regard to Dr. Coakley's case, where we decided not to do the bronchoscopy, that was an error of judgment on my part, and is not to be taken into consideration in this discussion, because if we include the errors of judgment, there is no limitation to what bronchoscopists may do.

THERAPEUTIC NOTES

The Uses of Petroleum in the Treatment of Constipation and Other Diseases in Infants.—The *Clinical Journal* of July 15, 1914, contains an article by Pritchard in which he admits that the general claims of paraffin as an intestinal lubricant require no corroboration on the writer's part, but in its special application in the treatment of those heterogeneous disorders of infancy which are often classified as indigestion its great value it not yet fully appreciated by the medical profession. As the writer has elsewhere pointed out, most of the so-called troubles of indigestion in infancy are associated with disturbances of the motor functions, such as spasms of sphincters, entero-spasms, or dysperistalses of one kind or another. In these conditions it is extremely useful to have at command an efficient lubricant, such as petroleum, which can penetrate to the lower reaches of the bowels without absorption or chemical change. In severe cases of so-called colic, or windy spasm in infants, the writer sometimes practically fills the intestines with petroleum emulsion, either alone or in combination with carbonate of bismuth.

The writer learned the value of large doses of bismuth in these cases when he was investigating the cause of motor disturbance in infants, by means of the bismuth feed and the X-rays. In many of these cases he noticed that the crying and pain subsided immediately after the administration of the bismuth. Since then he has given very large doses of this drug in combination with petroleum emulsion with the greatest confidence and generally with the most gratifying results.

The chief objection to the administration of bismuth in large doses is that its gritty properties make it distasteful to infants; this disadvantage is overcome by using the preparation known as "glycerinum bismuthi carbonatis," a most elegant preparation of milky softness, details for the making of which are given in *The Codex*. One drachm, or even two drachms, of this combined with an equal quantity of petroleum emulsion serves as a most efficient carminative for infants troubled with wind or colic. It may be given independently or combined with the contents of the infant's bottle. A mixture of this kind is a most efficient substitute for meconium, to the important physiological functions of which the writer has repeatedly drawn attention. When this natural intestinal lubricant and antiseptic is by design or accident

discharged from the bowel of the new-born infant, disturbances of motor functions are very liable to supervene. In such cases the free exhibition of this artificial meconium has the most excellent effect in restoring harmony to these functions.

The writer is not prepared to support the statement that petroleum is a powerful antiseptic agent. His experiences in attempting to discover an efficient preservative for his emulsions of paraffin gave the lie to this belief, but all the same there can be no doubt that it does in some degree limit and retard the decomposition of those nutrient media in which it is combined in large proportion. It does so, the writer feels convinced, by coating either the bacteria or the nutriment on which they thrive with an impenetrable film of a substance which cannot mix with, or become incorporated in, the protoplasmic contents of the living cell. The writer knows from experience that the stools of persons who regularly take paraffin are, if not exactly odorless, at any rate far less offensive than when the oil is not taken. This is, however, open to the interpretation that it is quite as much due to the rapidity of transit of food through the intestinal tract as to the inhibitory influence of the petroleum on the growth of the bacteria themselves.

One of the most valuable uses of petroleum is in the treatment of threadworms in children. This, however, hardly comes within the compass of this paper, but the writer refers to it here because he believes that its almost specific action as a vermifuge in such cases is dependent not so much on its lethal influence on the parasites or their eggs as upon its direct influence upon the mucous membrane.

Paraffin in its crude form has long enjoyed a high reputation in cases of catarrhal or diphtheric inflammation of mucous membranes. It has been claimed that pieces of diphtheric membrane when immersed in crude paraffin soon become soft and pliable. On similar grounds it might be supposed that paraffin when applied to unhealthy mucous membrane has a health-giving and cleaning-up influence. In the treatment of chronic catarrhs of the nose and pharynx, the purer forms of petroleum in combination with menthol obtained a very considerable vogue a few years ago, and when applied to the affected mucous membrane in the form of a fine spray by means of a nasopharyngeal atomizer, it affords results which, in the writer's opinion, are not surpassed by any of the more recent methods.

Whether, however, petroleum owes its undoubted efficacy in cases of intestinal disorder to its therapeutic effect on the mucous

membrane or to its undoubted influence on the motor functions of the bowel there can be no question that in cases of threadworm infection it acts by ironing out and cleaning up the crypts or rather lurking places in an unhealthy mucous membrane, in which the eggs have an opportunity to incubate undisturbed.

Although petroleum is, in the great majority of cases, a most efficient lubricant and aperient, nevertheless in certain exceptional instances it undoubtedly predisposes to constipation. This paradoxical effect, which must be familiar to all those who have had much experience of the drug, is, the writer believes, to be explained on the following grounds: In some individuals a regular action of the bowels can be maintained only by the stimulating and provocative action of irritating particles, such as the seeds or husks of fruits and vegetables. In such cases petroleum may predispose to constipation by its emollient influence on the mucous membrane, thus depriving the rectum or its neuromuscular mechanisms of the required stimulation. Such constipation can persist after stasis in the upper reaches of the intestines has been cured by the petroleum, and thus it may do good in spite of the constipation.—*Thera. Gazette.*

News Items

Dr. Norman Wallace, formerly of Alma, Ont., and Guelph, is with Dr. Don. Armour in the Canadian Hospital, London, Eng. Dr. Stewart, of Calgary, is also serving in that hospital.

Recently a bust of the late Dr. Emily Stowe was presented to the city of Toronto by a number of friends. Dr. Stowe was the first woman physician to practice medicine in Ontario.

Hamilton, Ontario, will send the following medical men with the Second Canadian Contingent: Drs. Geo. D. Farmer, Ancaster; D. P. Kappeler, William L. Silcox, and William F. Nicholson.

Two of our confreres who have been passing through severe illnesses extending over many weeks' duration, we are glad to say, are recovering nicely. They are Drs. T. B. Richardson and W. John O. Malloch.

At the recent special meeting of the Ontario Medical Council, a resolution was adopted approving the principle of reciprocity with Great Britain. The matter was placed in the hands of the Legislative Committee to bring before the Ontario Government.

The British Foreign Office has accepted the offer of McGill University to furnish a base hospital staff for foreign service. Dean Herbert S. Birkett will be in command, and amongst others likely accompanying will be Professor J. George Adami and Dr. J. M. Elder.

Dr. C. Stewart Wright, for the past three years associated with the Toronto Orthopedic Hospital, begs to announce the discontinuance of that connection and his removal to No. 99 Bloor Street West. He will devote his attention, as formerly, to orthopedic surgery.

By the death of Dr. Alton H. Garratt, in December, Toronto lost one of its well-known physicians. The late Dr. Garratt was a graduate of Trinity Medical College, and was for a number of years on its staff. He was also connected for several years with the Toronto General, St. Michael's Hospital, and the Simcoe Street Dispensary. Dr. Garratt was a very affable and kindly man, and much beloved by the profession. He was a member of the Academy and Aesculapian Club.

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COMMENT FROM MONTH TO MONTH

The Commission on Medical Education and Medical Practice in Ontario, promised by the late Sir James P. Whitney some two years ago, may issue before, or at the time of, the annual session of the Legislature.

There are not lacking signs that the unlicensed disciples of the all too various cults of exclusive methods of treating the sick will lustily call for legislative licensure.

The ordinary lay mind must view the whole situation in this province with a lively, scoffing humour at the whole screaming farce. One cult denounces the others as parasites upon their quackery. They publish long lists of the elect—those within the pale. The other claims to be the true simonpure, trumpet-tongued and brazen—the pure wine on the lees. They, too, detest the poachers on their preserves. It is impossible to contemplate these abuses but with scorn and indignation.

The position of the provincial University at the present time, the innate desire of all the universities to have complete control over the profession, the rampant quackery, call for a Commission with superlative abilities to make a wide, searching inquiry of affairs medical, in this province.

Editorial Notes

CANADIAN MEDICAL ASSOCIATION

The next meeting of the Canadian Medical Association will be held in Vancouver, July 6-10. The large local committee has already done considerable work in making the necessary arrangements. Dr. Brydone-Jack is Chairman, and Dr. Frederick Brodie, Secretary of this committee.

1,000 CASES OF CANCER OF THE STOMACH

Dr. Julius Friedenwald presents an extremely careful clinical study of gastric carcinoma in the *American Journal of the Medical Sciences* for November, and as it is based on an analysis of 1,000 cases it is worthy of serious attention. About 60 per cent. of his patients were males, and a similar percentage occurred in the fifth and sixth decades. Ulcer of the stomach, on the other hand, falls principally on the third and fourth decades. Heredity did not appear to play any part in over 90 per cent. Dr. Friedenwald thinks that his analysis makes for depreciation of the belief that peptic ulceration is an important precursor of gastric cancer, since even the most liberal interpretation failed to discover symptoms of ulcer in more than three-quarters of his cases. The gastric contents were analysed in 733 cases, and in nearly nine-tenths of these no free hydrochloric acid was found. In a majority of such lactic acid was present, also Oppler-Boas bacilli. Sarcinae were noted in one-third only and "coffee-grounds" in about two-thirds. Occult blood was found in the stools in 92 per cent., and especially in early cases, though obvious melæna occurred in 21 per cent., and hæmatemesis in 25 per cent. only. Pain and loss of weight were the most constant of symptoms, and anæmia was noted in a large majority. Vomiting occurred in nine-tenths of Dr. Friedenwald's cases; in contrast to the clinical picture of gastric ulcer, both pain and vomiting were notably associated with absence of free hydrochloric acid in the stomach contents. In only one-third was the tumour palpable within six months of the onset. In more than half the cases the growth was pyloric. It is surprising to find that fever was noted in nearly half; it is more often a late than an

early symptom. In a majority the duration of life from the onset of symptoms was less than twelve months. Of 128 patients submitted to operations other than exploratory (gastro-enterostomy, gastrectomy, gastrectomy), not one was living at the time of the analysis. Dr. Friedenwald, therefore, urges earlier exploration, recognizing the desperate nature of the malady and the hopelessness of the prospect in cases where the diagnosis has become apparent from clinical symptoms alone.—*The Lancet*.

THE BELGIAN PHYSICIAN

Our Belgian confrères are undergoing trials that no language can even approximately describe. In a few months they have seen their country transformed from a land of peaceful pursuits and prosperous homes into one of chaos and bereavement. Opinions as to the cause of the present war may differ greatly; views in regard to the way in which it is being prosecuted may be widely divergent; but there are few honest, conscientious men who will not agree that the world has seen few sadder spectacles than the devastation of Belgium. Surely if any people have known the acme of misery it is the Belgians. Helpless, forlorn and sick with their sorrows, starvation and cold are all that confront these hopeless people unless the neutral nations of the world give bountifully—and quickly. The movement already under way looking toward immediate relief for this stricken nation is the one bright spot in the situation.

The medical men of Belgium have suffered no less severely than the rest of their countrymen. They are destitute, with their homes, equipment, libraries, everything destroyed and lost. At any rate, the hunger and cold that confront the great mass of the people also confront the doctors. Many have families dependent on them, so their anxiety and anguish as well as their physical distress can easily be imagined.

The plight, therefore, of the physicians of Belgium is terrible indeed. Unless steps are taken at once to relieve their condition, a few short weeks are certain to witness scenes of suffering among our Belgian colleagues that will beggar description.

It has been suggested to us from several sources that *American Medicine* should undertake the collection of a fund for the physicians of this stricken country. We have yielded to the requests of many interested friends and will undertake the collection of an American Fund for Belgian Physicians.

This fund for Belgian physicians will accept contributions not only from American medical men, but from every one who realizes the great and urgent need of the doctors of poor bleeding Belgium. A committee composed of prominent American physicians is being organized, and this committee will have charge of the entire movement; all contributions will be turned over to them as received.

To every physician in America we, of course, make an especial plea for a small contribution to this fund. No matter how small the amount, it will be welcome and help to swell the total. We realize only too well the many demands that we American physicians have to meet in our every-day life. But there is hardly a physician in this great land of ours that cannot contribute fifty cents or a dollar to this fund for Belgian doctors—and never feel it.

We hope every one who reads these words will send in at once—to-day—some small sum—twenty-five cents will be gratefully received.

All contributions should be addressed to the Fund for Belgian Physicians, care *American Medicine*, 18 East 41st Street, New York City.

This committee will work with the Belgian Relief Committee and doubtless arrange with that body to make disposition of the funds collected. In our November issue there will appear a full report giving a list of all contributions, the names of the committee in charge, and detailed information in regard to disposal of funds, etc.

In the meantime, may no time be lost in creating a fund that will bring a ray of comfort and cheer to our sorely afflicted Belgian colleagues.—*American Medicine*.

In connection with the above, Dr. Adam H. Wright, 30 Gerrard Street East, Toronto, will receive and forward contributions.



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Publisher's Department

THE PNEUMONIA CONVALESCENT.—While the course and progress of acute lobar pneumonia is short, sharp and decisive, the impression made upon the general vitality is often profound, and apparently out of proportion to the duration of the disease. Even the robust, sthenic patient is likely to emerge from the defervescent period with an embarrassed heart and general prostration. In such cases the convalescent should be closely watched and the heart and general vitality should be strengthened and supported, and this is especially true as applied to the patient who was more or less devitalized before the invasion of the disease. For the purpose indicated, strychnia is a veritable prop upon which the embarrassed heart and circulation can lean for strength and support. As a general revitalizing agent is also needed at this time, it is an excellent plan to order Pepto-Mangan (Gude), to which should be added the appropriate dose of strychnia, according to age, condition and indications. As a general tonic and bracer to the circulation, nervous system and the organism generally, this combination cannot be surpassed.

GERMAN AND FRENCH BULLETS.—During recent wars many observers have been astonished at the apparently comparative harmlessness of the modern rifle bullet, and lately German military authorities have put forward the paradoxical claim that the German projectile is a "humane missile." It is interesting, therefore, to compare the German "S" bullet with the French "D" missile. Both are conical in shape: the German is composed of a hard leaden core with an envelope of soft steel; the French bullet is of solid brass without an envelope, and is the longer and heavier of the two. Up to a distance of 500 yards the German ball has not the penetrating force of the French, but at distances of 1,000 and 2,000 yards it has a distinct superiority. As regards the severity of the wound inflicted, the wound caused by a "*balle ricochée*" is much more serious than that caused by one which has found its billet without interruption of its course. The bullet which ricochets becomes deformed, jagged, flattened out, or separated from its envelope: it strikes the body either obliquely or