upper part of right rectus, viscera adherent round a collection of dirty grey fluid and gas, which issued from a hole deep down in the inflamed lining of the cavity. This hole could not be closed. Drainage through the wound of entry; closure of the operation wound. Vomiting and pain ceased at once; the next morning the patient was reading the paper. Discharge free, reddening the surrounding skin; no faecal smell. The patient was transferred to the base six days later. While there the discharge diminished and ceased to be irritating, but he gradually sank and died.

CASE III.—*Wound of Duodenum or Beginning of Jejunum: Localized Collection of Fluid: Drainage: Death in Five Days.*

Lieutenant C., 2nd Leicesters. Shrapnel wound left loin two and a half days before. No symptoms till the night before admission, then vomiting, pulse 120, hiccough, and pain referred to testes. Operation May 24th: Incision splitting left rectus. On opening the peritoneum a dirty fluid, fetid though the odour was not faecal, issued under pressure from a cavity formed by adherent viscera. The hole in the intestine could not be demonstrated but lay apparently in the duodeno-jejunal flexure. A shrapnel bullet was found lying in the mesentery of the jejunum close to the bowel which was here intact. Closure in layers with a lumbar drain.

May 25th. The discharge is practically pure bile. This fluid, later on, reddened and excoriated the surrounding skin; the patient vomited a good deal, grew weaker, and died May 29th.

CASE IV.—*Injury to a Coil of Intestine which Retracted from the Wound and was Missed at Operation: Death from Haemorrhage.*

Private M., 2nd Leicesters. Wound in left iliac fossa; pulse 120. Operation May 17th: Vertical incision over the wound, large collections of clot inside and outside the peritoneum, that inside smells slightly faecal. Colon intact, two small punctures in the adjacent small intestine closed with sutures. Casing of ricochet bullet found loose. The patient died on May 19th.

Post mortem: Abdomen full of blood, wound of omentum. In the umbilical region, at some distance from the wound, lay a coil of jejunum completely wrapped in omentum, with four biggish holes. No escape of contents, no general peritonitis. The injured coil and the bowel above it much distended, the intestine below empty and shrunken.

CASE V.—*Resection of 2½ ft. of Small Intestine: Dysentery: Recovery.*

Corporal M., R.Y.R. Shell wound through right ilium thirty-six hours before in direction of pelvis. Slight abdominal distension; no pain on vomiting. Urine normal. Operation March 18th: Incision in the middle line. Three wounds found in a coil of ileum; the coil adherent all round. No escape of contents. The missile, a square piece of shell about ½ in. across, lay in the lumen of the gut. Two and a half feet of intestine resected, end-to-end suture, suprapubic drain. Two days later the bowels were moved with calomel, enemas, and pituitrin. A week after operation he developed diarrhoea, which later became a definite dysentery, with passage of blood and mucus. Treated with mag. sulph. hourly. Recovery. Transferred to base April 9th, three weeks after operation.

CASE VI.—*Wounds of Small Intestine: Resection of 4½ ft.: Acute Dilatation of Stomach: Recovery.*

Lieutenant C. F. P., 6th Duke of Wellington's. Entry wound—ricochet bullet—right iliac fossa. After eighteen hours, onset of local pain, rigidity. Bullet thought to be in wall. Operation May 24th: Incision vertical, crossing the wound. A coil of ileum found wrapped in the omentum, perforated near the mesenteric border in two places about 5 in. apart. There had been no escape of faeces, but the coil was full, and as soon as it was lifted from its bed the liquid contents spouted out. Intestine above much dilated with gas and liquid faeces, that below practically empty. A piece of bullet casing lying loose. Rest of intestine reviewed and found intact; no general peritonitis; 53 in. of bowel resected from just below the injury upwards; it was all dilated and inflamed. Bowel above emptied. End-to-end suture in healthy bowel. Inflamed omentum tied off. Suprapubic drain.

May 25th. Poor pulse. No vomiting.

May 26th. Enema—solid faeces. While this was acting half a pint of clear coagulable serum was discharged from the drain, and three measured pints of watery green fluid vomited. No further vomiting.

May 27th. Epigastric pain and distension, stomach felt swollen and tense, rest of abdomen lax. Stomach tube drew off 3 pints green fluid. In the evening same condition, about 1½ pints brownish sour-smelling fluid drawn off. Bowels opened four times naturally in the night; no further distension. Later there was a troublesome diarrhoea.

Our hospital moved away a few days later, and the patient was left in the care of Captain Frankau, R.A.M.C.(T.), who tells me that he sent him to the base in a barge on June 10th (seventeen days after operation). He was then on ordinary diet and doing well.

CASE VII.—*Excision of 19 in. of Intestine: Death Thirty-six Hours later.*

Private H., 4th Liverpools. Shot from root of penis to right lower ribs two and a half days ago. Bullet (shrapnel) felt under the skin. Bilious vomiting, rigidity, pain. Operation March 13th: Incision in right rectus. Small intestine wounded in two places, full of liquid faeces of which none had escaped.

Resected a foot and emptied the bowel above. The next morning the patient was better, later bilious vomiting came on again and he sank and died.

Post mortem: No other injury was found. No general peritonitis; no haemorrhage. The bowel above the union very much distended, that below it empty and contracted.

CASE VIII.—*Resection of 2 in. of Small Intestine: Death a Few Hours later from Recurrent Haemorrhage.*

Private D. B., 2nd Yorks. Bullet wound crossing abdomen from a point 2 in. left of the navel to the right loin. Operation January 28th: Median incision. The wound of exit lay just outside the ascending colon. The peritoneal surface of this was apparently intact, but the discharge from the exit wound smelt slightly faecal. The whole of the small intestine was inspected. In one place there was a complete perforation, mucous membrane protruded and blocked both entry and exit. There was no escape of contents. About 2 in. of the injured portion was excised and the intestine joined by end-to-end suture. Death took place some hours later.

Post mortem: The peritoneum was full of free blood, derived either from the omentum, which was slightly injured, or from the region of the exit wound.

CASE IX.—*Resection of 7 in. of Bowel: Recovery: Death a Week later from Secondary Haemorrhage from the Gluteal Artery.*

Private C., 2nd Gordons. Shell wound in right buttock ten hours before; vomiting, rigidity. A wide track leads directly through the ilium into the pelvis. Operation February 7th: Median incision. Bladder and rectum intact; a good deal of free blood and some peritonitis. The small intestine had four wounds, two of which nearly divided it. Missile not found. Seven inches resected. Closure with drain in entry wound. The patient nearly died after the operation, but rallied, grew stronger, and lived for a week, the bowels opening frequently. On February 13th he began to bleed from the drain, the bleeding recurred and increased, and proved fatal on the 14th.

Post mortem: Intestinal tract all sound, but generally adherent. Scarcely any blood in the abdomen. Bleeding had evidently come from the wound in the buttock, presumably from the gluteal artery.

"TRENCH BACK" TREATED BY SODIUM SALICYLATE IONIZATION.

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"TRENCH BACK" is the term applied to a variety of conditions arising from injury to the back in the lumbar or sacral regions. The injury is usually caused by the impact of large and heavy masses of matter, such as a quantity of earth or sandbags.

As the condition is of great importance on account of its frequency and the prolonged disability it usually entails, I venture to bring forward the following method of treatment, although the number of cases so far treated does not justify any dogmatic statement as to its utility or allow any final conclusion to be drawn.

The cases almost invariably come from the trenches. They complain of pain and rigidity in the dorsal-lumbar region. Various degrees of disability are represented—some can get about, others have to be carried on stretchers. Those who can walk do so with a pronounced stoop, and use a stick. Tenderness is generally present. Some cases show anaesthesia, and in these there is probably spinal injury. In the milder cases the clinical picture is that of marked lumbago, and would be indistinguishable except for the history. All cases of this condition should be examined by x rays before being treated in the manner suggested, and all cases of injury to the spine and pelvis excluded. Cases with anaesthesia of the lumbar and sacral regions are unsuitable for ionization, as they are very liable to be badly blistered during treatment. The majority have no spinal lesion, the symptoms being due to contusion or sprain of the muscles and fasciae alone. It is for cases of this class that I advocate ionization. In a certain proportion a pronounced psychical factor can be traced, and these cases present features similar in many respects to the condition known as "railway spine," and are always difficult to treat.

The cases that have come under my notice in the Electro-Therapeutic Institute of the Kitchener Indian Hospital, Brighton, have, as a rule, been medically treated in the wards for some time. I selected a number and treated them by ionization with sodium salicylate, and obtained good results in a short time.

I now apply the treatment to all cases of trench back

coming to the department, and the results so far have been satisfactory. It is applied as follows: A 1 per cent. solution of sodium salicylate is prepared. (This can be conveniently done with Burroughs and Wellcome's soloids for ionic medication.) A large pad sufficient to stretch right across the back, and 8 or 10 in. broad, is saturated with the solution. The pad must be composed of at least six layers of lint. The patient is placed face downwards on a couch, and the pad is laid over the painful area. A mail chain electrode is placed on top of the pad, and the whole firmly bound on with a bandage. The mail chain electrode is connected with the negative pole of a battery or electric machine. The "multostat," if available, is very convenient, as the current can be regulated to a nicety and all fear of severe shocks obviated. An indifferent electrode is then placed upon some other region, say the upper dorsal, moistened with sodium chloride solution, and connected with the positive pole. The current is gradually turned on and treatment continued for about fifteen minutes. Applications are carried out twice weekly, and improvement often occurs after the first. Some cases are cured in two or three applications.

Certain points in the practical application of the treatment deserve notice. The indifferent electrode (the positive) should be at least as large as the active (the negative). There should be at least half a dozen layers of lint between the mail electrode and the skin; this will allow higher doses to be given without blistering. A 1 per cent. solution of sodium salicylate is quite sufficient, as the concentration of the solution has little or no effect on the amount of the drug absorbed. The dosage is regulated almost entirely by the amount of the current traversing the circuit, hence a milliampèremeter is necessary; 30 milliampères is the usual amount to be given at the initial treatment. At subsequent applications this can be increased until the patient is taking 100 milliampères, or even more. Some cases tend to blister readily even with low dosages, and allowances must be made for individual differences. As a general rule the higher the milliampèrage that can be borne, the better and quicker will be the results, always remembering that the size of the electrodes must be proportionately increased. The current should be introduced very gradually and also turned off very gradually, as a rapid increment or rapid diminution causes severe shock. Pure distilled water should always be used for making the solutions, as, if other salts are present in the water they also will be ionized, and will interfere with the treatment.

CASE I.—Sepoy F. G., admitted to hospital with trench back on May 14th. Came to electrical department on May 25th. He had severe pain and stiffness in his back muscles and pain down back of left thigh, and was unable to stand upright or walk without a stick. After five applications of salicylate ionization he was walking easily, and had no pain whatever.

CASE II.—H., admitted May 14th with trench back, came to electrical department on May 28th. Very severe pain in lumbar and sacral region. Patient quite unable to walk and brought on a stretcher. Slight movement caused severe pain. After seven applications patient is getting freely about, pain is almost gone, and he complains only of slight stiffness in back muscles.

CASE III.—Sepoy M. B. K., came with severe pain in lumbar region, and inability to straighten back or walk without a stick. After four applications of sodium salicylate ionization the patient was quite cured.

CASE IV.—Lance Naik F. D. came with much pain and stiffness in his back. Had to use a stick to get along. After three applications he was cured.

CASE V.—Sepoy N., came to the department using a stick. He was unable to stand straight, and complained of great pain in the lumbar region. After three applications of sodium salicylate ionization he was quite well.

ON July 30th a silver tray and Chippendale clock were presented by the present and past members of the staff of the Leeds Public Health Department to Dr. J. S. Cameron, who recently retired from the position of medical officer of health owing to ill health. Dr. Dennison, chairman of the Sanitary Committee, referred to the great sanitary improvements that had taken place in Leeds, most of which, he said, owed their inception and completion to the medical officer of health. They had helped to decrease the death-rate of the city from a previous average of 22 per 1,000 to the low rate of 15 per 1,000. Dr. Cameron, in acknowledging the presentation, spoke of the loyalty and co-operation of his staff, without which, he said, it would have been impossible for these larger measures of sanitary reform to be carried out.

STOMOXYS, THE STABLE-FLY.

BY

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Fly! Thy brisk unmeaning buzz
Would have roused the man of Uz;
And, besides thy buzzing, I
Fancy thou'rt a stinging fly.
Fly—who'rt peering, I am certain,
At me now from yonder curtain:
Busy, curious, thirsty fly
(As thou'rt clept, I well know why)—
Cease, if only for a single
Hour, to make my being tingle!
Flee to some loved haunt of thine;
To the valleys where the kine,
Udder-deep in grasses cool,
Or the rushy-margined pool,
Strive to lash thy murmurous kin
(Vainly) from their dappled skin!
Calverley: "The Poet and the Fly."

The common names for common insects in English are confusing. Not only are the same insects frequently known by different names on different sides of the Atlantic, but in many cases quite different insects, insects even belonging to different genera, are connoted by the

Fig. 1.—The insect that is believed to transmit infantile paralysis. Original drawing of the biting stable-fly (*Stomoxys calcitrans*, Linn.), by Ignaz Matusch. (From the *American Museum Journal*.)

same common name. In this respect matters are different in Germany, partly perhaps because the Germans on the whole are more scientifically inclined than we are, but partly, I suspect, because the German language lends itself more easily to express in one word—however long—the characteristics of any given insect.

Fig. 2.—Stable-fly, *Stomoxys calcitrans* ($\times 5$). Antenna. Natural size, resting position. (From *Flies in Relation to Disease: Non-blood-sucking Flies*. By G. S. Graham Smith, M.D. Cambridge University Press. 1914.)

The genus *Stomoxys* is generally called in Great Britain the "stable-fly," but there are other "stable-flies." One of the commonest species, *Stomoxys calcitrans*, is a two-winged muscid fly, not at all unlike the common domestic fly, *Musca domestica*, but there