On March 9 he appeared quite well, but stated that he had been having attacks of paroxysmal tachycardia, especially at night, each lasting about an hour. His pulse was 110.

Second Admission.—On March 14 the patient was readmitted, complaining of pain, stiffness, and swelling in his right arm of four days' duration. The first symptom noticed was tenderness of the muscles, beginning with the right biceps but later spreading to the forearm and shoulder muscles. This was followed shortly by increasing swelling of the muscles, with accompanying pain and stiffness. On examination he did not look ill, but his face was flushed and his skin hot and moist. There was marked brawny swelling of the right forearm and arm, most pronounced in the biceps region. The whole arm was very tender, and movement of the limb caused great pain. There was some tenderness, though very little swelling, of the shoulder muscles. A blood count on March 15 revealed 11,000 leucocytes per c.mm.—neutrophils 8,910, eosinophils 110, basophils 0, lymphocytes 1,430, and monocytes 550; Hb 87%.

Neoarsphenamine, 0.6 g., was given intravenously on March 15 and the temperature rose to 101.2° F., but next day it had fallen to normal and remained so. The swelling of the right arm subsided rapidly; by March 19 it had disappeared, and movements of the whole limb were free and unaccompanied by pain, but there was still a little tenderness on deep pressure over the biceps. Further injections of neoarsphenamine, 0.6 g., were given on March 21, 26, and April 3. With the help of ferrous sulphate, 3 gr. t.i.d., and ascorbic acid, 50 mg. b.d., his haemoglobin had risen to 100% by April 5. He was discharged on April 6, apparently in good order.

He was seen as an out-patient on April 18. In the previous three days there had been some return of myositis in the right biceps, the right quadriceps femoris, and both gastrocnemii. There was not much pain or swelling, and constitutional symptoms were absent. Neoarsphenamine, 0.6 g., was injected intravenously. On April 25 he was seen again and felt quite well. The myositis had disappeared within a day or two of the injection. Another intravenous injection of 0.6 g. neoarsphenamine was given, and a week later (May 2) a final one of 0.6 g. He claimed to be feeling perfectly well.

Third Admission.—On May 22 he was readmitted with pain in the left calf, both thighs, and the left posterior cervical triangle, gradually increasing over the past eight days. Since May 18 he had noticed increasing swelling in the right thigh and the lower part of the left calf. He had had severe headache and had observed tachycardia. On examination he looked rather unwell. Both thighs were tender to palpation, with firm diffuse swelling on the right side. There was a firm tender swelling of the lower end of the left calf. The arms were unaffected. There was also a similar swelling in the left posterior cervical triangle. No other abnormalities were detected. Bood count : Hb, 108% ; leucocytes, 7,000 per c.mm.—neutrophils 5,740, eosinophils 140, basophils 0, lymphocytes 840, monocytes 280.

On this occasion he was treated with penicillin, 15,000 Oxford units three-hourly by intramuscular injection for five days (total, 600,000 units). The temperature on admission was 100.8° F., and it rose next day (after starting penicillin therapy) to 104° F., but within 24 hours it had fallen to normal and remained so. The myositis subsided rapidly, and within four days he was feeling perfectly well.

Discussion

Many of the manifestations of this case conformed more or less to the classical picture and need no further comment. Attention, however, may be drawn to certain less generally recognized features. Thus, the comparative lack of inflammatory changes at the site of the original bite is at variance with the usual description, most authors emphasizing the severity of these changes, as also the attending lymphangitis. It is stated, too, that the inflammation is apt to relapse and remit with the fever, but in the present case, though there was some slight initial inflammation, this soon subsided and did not recur. Splenomegaly is not generally described as occurring in this disease; it was only transitory in this case and, as a matter of fact, led to some confusion in the diagnosis. But by far the most aberrant and striking feature was the severe and recurrent myositis. Whether this is really a rare accompaniment of the disease I am not in a position to state, but there can be no doubt that observers are unfamiliar with it. Beaumont and Gill (1935) seem to be the first to describe this myositis. In their case the patient was a 9-year-old girl who developed oval tender masses in various muscles, but at no time was the myositis so severe as in my patient on his second admission. Almost as remarkable as the myositis was the rapidity of its subsidence after injection of neoarsphenamine and after treatment with penicillin.

Although it is well known that rat-bite fever, when untreated, is liable to persist for many months, its tendency to relapse after arsenical treatment is much less commonly recognized. Most textbooks state that one to three injections of neoarsphenamine usually suffice. In the present case the inadequacy of three injections, or even of a further seven, requires no emphasis. The decision to use penicillin was based on the report of its success in treatment of experimental infection of mice with *Spirillum minus* (Lourie and Collier, 1943), and with *Spirillum minus* and *Streptobacillus moniliformis* (Heilman and Herrell, 1944; quoted by Herrell, Nichols, and Heilman, 1944). It would appear that the present paper is the first record of the clinical use of penicillin in *Spirillum* infections.

Apart from the case of Beaumont and Gill, already mentioned, which was also due to a cat-bite, very few similar cases have been recorded in the literature; Laverick (1936) and Cole (1936) each described one case, while Yamamoto (1938) recorded two. The last-named was able to isolate spirilla from both patients, and Cole demonstrated the organisms in a guinea-pig after inoculation with a lymph-gland extract from his patient; the other authors failed to isolate the organisms.

Finally, some comment on the name "rat-bite fever" or "cat-bite fever" seems justifiable. Neither of these names is satisfactory, nor is sodoku, which merely means "rat poison" in Japanese, because these two animals are not the only vectors of the disease, which remains the same, however conveyed. The term "spirillosis" is suggested as being less objectionable than others hitherto proposed.

Summary

A case of so-called rat-bite fever following the bite of a kitten is described. Some aberrant features are discussed, especially the occurrence of severe myositis, repeated relapse after arsenotherapy, and apparent final cure by means of penicillin. A plea for the use of the term "spirillosis" in preference to "rat-bite fever" or "cat-bite fever" is made.

My thanks are due to Dr. H. B. Russell for permission to publish this case.

REFERENCES

Beaumont, G. E., and Gill, A. M. (1935). *British Medical Journal*, **1**, 582.
Cole, A. F. (1936). Ibid., **1**, 638.
Heilman, F. R., and Herrell, W. E. (1944). *Proc. Mayo Clin.*, **19**, 257.
Herrell, W. E., Nichols, D. R., and Heilman, D. H. (1944). *J. Amer. med. Ass* **125**, 1003.
Laverick, J. V. (1936). *British Medical Journal*, **1**, 639.
Lourie, E. M., and Collier, H. O. J. (1943). *Ann. trop. Med.*, **37**, 200.
Yamamoto, S. (1938). *Jap. J. Derm. Urol.*, **44**, 118.

Medical Memoranda

A Case of Acute Dilatation of the Stomach

I recently met with a case of this rare condition, which occurred spontaneously in a woman aged 62 in apparently good health, actively engaged in domestic work, and which seems to be worthy of notice.

CLINICAL HISTORY

I was visiting the house to see a sick child on March 31, 1944, and saw the woman, who made no complaint regarding her own health. The next day she remarked to her daughter, who was out all day on war work, that she was not feeling well. On April 2 she said that she had vomited during the night. She had some hot milk and tea; later, feeling better, she came down and had some bread-and-butter and tea. She went to bed at 6.30 p.m., complaining of great thirst. She took some milk, half a siphon of soda-water, some more milk, and a little whisky.

Her condition became so alarming that I was sent for at 9.30 p.m., and found her suffering from profound shock. The extremities were cold and cyanosed, and the pulse was imperceptible at the wrist and in the brachial artery. On auscultation the heart sounds were weak—rate 120, regular. Abdominal palpation at once revealed the diagnosis: the stomach extended down to the pelvis, succussion was easily obtained, there was no visible peristalsis, and the tongue was dry. She complained of great thirst. Hastily I went home two and a half miles for funnel and tube, and the district nurse. I gave rectal saline in the left lateral position with catheter and funnel. This the nurse continued while I passed the stomach-tube, in doing which the patient readily co-operated. Without any difficulty, and with very little retching, I siphoned off 4 pints of liquid gastric contents. The patient was much relieved, and asked for a cup of tea, which I refused. The nurse continued to give rectal saline, and as the patient seemed to be definitely improving I returned

home, leaving instructions to the nurse to continue the saline and to give no drink by the mouth. At 3 a.m. I was urgently recalled and found the patient *in articulo mortis*. The nurse had left some hours previously, considering the patient to be well enough to warrant her departure.

Eight hours later I made a partial post-mortem examination. Rigor mortis had set in. On opening the abdomen I found the stomach apparently quite normal in size and position, no sign of injury from stretching being visible on its peritoneal aspect. The musculature was firm and elastic.

COMMENT

I publish this case because the condition is rare and the rapid recovery of the gastric musculature after such extreme dilatation, without apparent injury, seems noteworthy. The cup of tea which she so craved for might have been beneficial, and if intravenous saline had been given, or even the rectal saline persevered with for a longer period, it might have turned the scale and her recovery have ensued.

My previous experience of this condition relates to two post-operative cases, both fatal owing to the diagnosis being made too late, and in neither case was a post-mortem examination carried out. The cause of these post-operative cases has been variously ascribed to the anaesthetic, especially ether; to a kink in the duodenum; to the ileo-colic artery pressing on the duodenum. I believe it is due to the patient having too much drink when propped up in the Trendelenburg position. The stomach is then in an atonic condition and the liquid in it lies heavy, is not absorbed, and therefore does not quench thirst. The patient gets more drink and the stomach sags lower in the abdomen, soon reaching the pelvis; the extreme stretching of the stomach wall causes shock, which is rapidly fatal if not relieved. In neither of my cases was there any evidence of much gas under pressure in the stomach, which has been reported by some observers.

I am not aware, in such cases, of any report of a necropsy in which the stomach wall has been found in its normal position when relieved of the stretching due to the weight of the contents.

C. LL. LANDER, M.B., B.S.,
Hon. Consulting Surgeon,
Prince of Wales Hospital, Plymouth.

The Initial Treatment of Tropical Ulcer

The purpose of this note is to draw attention to a method of treatment introduced in 1939 by Todd which in my own experience has been extremely effective and which apparently is neither widely known nor much used.

METHOD

On admission the patient undergoes a three-day course of local treatment with a saturated solution of potassium permanganate (approximately 5%), followed by the application of iodoform powder. Without any preliminary cleaning, the ulcer is painted freely with the permanganate solution, which is then allowed to dry as much as possible. In some cases there may be undermined skin at one edge of the ulcer, beneath which a collection of pus forms, and it is then necessary to incise the overhanging skin. This can be done quite adequately and rapidly with scissors and without any anaesthetic. The area thus laid bare should also be treated with the permanganate solution. The whole surface is then dusted lightly with pure iodoform powder and covered with cotton-wool without any intervening gauze. On the second day any loose sloughs are removed with scissors and the whole treatment repeated. The same procedure is followed on the third day. On the fourth day the ulcer is almost invariably clean and covered with healthy granulations, and no sloughs remain. Only in rare instances is it necessary to repeat the treatment more than three times, and I have not yet seen a case which has not been clean and healthy after six treatments. The subsequent treatment can be conducted on any of the familiar lines with antiseptic ointments, occlusive dressings, or skin-grafting.

The advantages claimed for this method of treatment are: (i) It is simple and can be carried out satisfactorily by a native dresser after two or three demonstrations. (ii) It cleans up even the most septic ulcers more rapidly than any other method which I have yet used. (iii) It requires no anaesthetic such as is necessary for curettage or excision. (iv) It is reasonably economical. (v) While of use in all cases of tropical ulcer, it has been found to be of especial value in ulcers in which the tendons are exposed and grossly swollen and which are very slow to respond to other lines of treatment; also in the acute and rapidly spreading type of ulcer. In the latter case the spread is arrested almost immediately.

The method outlined above differs from that originally described only in that pure iodoform powder is used instead of a 20% iodoform dusting powder. I have found the former more effective.

FRANCIS E. STOCK, M.B., B.S., F.R.C.S., D.T.M.&H.,
Medical Officer, Colonial Medical Service, Nigeria.

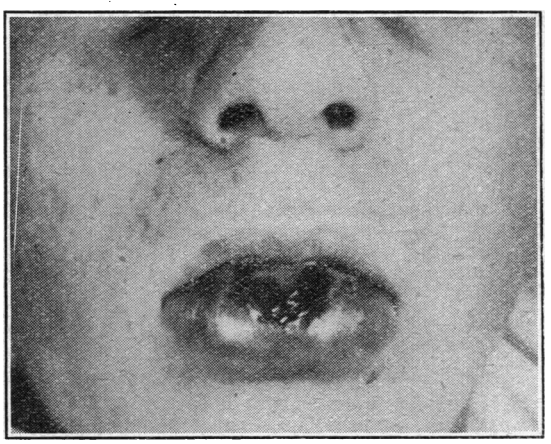
REFERENCE

Todd, K. W. (1939). *British Medical Journal*, **2**, 687.

A Case of Rat-bite Fever

The following case appears to be interesting enough to warrant a report.

A youth aged 18 was awakened one night by a rat, which, before he was aware of what was happening, bit his lip twice. There was considerable bleeding at the time, but the wound healed rapidly and he continued in his usual health. Some ten days later the bitten area swelled, became very painful, and signs of general infection appeared, with headache, backache, rigors, and sweating bouts. He was admitted to hospital 18 days after the bite, the above symptoms having continued. On admission the lip was grossly swollen and very painful, with a large black slough marking the site of the bite (see Fig.). There was marked tender enlargement of the lymph



nodes in the neck and in both axillae. He appeared ill, had a temperature of 101 to 103°, and was subject to frequent rigors. There was no rash or splenic enlargement. A blood count showed: R.B.C., 4,690,000; haemoglobin, 88%; W.B.C., 7,600, of which 66% were neutrophil polymorphs, 31% lymphocytes, and 3% monocytes. The Wassermann reaction was negative. On these findings a diagnosis of rat-bite fever was made.

Smears from the surface and fluid from aspiration of the lesion showed haemolytic streptococci and *Staph. aureus* only. Lymph-node puncture demonstrated several highly suggestive organisms. Blood was injected into white mice and guinea-pigs. While no growth was obtained from the former, in peritoneal exudate from the latter Dr. H. J. Slade found *Spirillum minus*. A blood culture was negative.

Three paroxysms of fever occurred during his stay. In the third his temperature reached 104.6°, when he was given 0.3 g. of N.A.B. Next morning it had sharply fallen to normal. His lip rapidly healed, the glandular enlargement resolved, and he was discharged well a few days later.

R. B. THOMPSON, M.D., M.R.C.P.
Royal Victoria Infirmary, Newcastle-upon-Tyne.

Unusual Termination of Intestinal Obstruction due to a Gall-stone

The following case seems worthy of putting on record on account of its rarity.

On Dec. 20, 1925, I was called to see a woman, 60 years of age, with a history of intestinal obstruction for 8 days. The onset was heralded by pain in abdomen and repeated vomiting, and for about 5 days no nourishment of any kind was retained. The bowels refused to move, and repeated enemas produced no result. The vomiting and pain then ceased and sips of water were retained, but the bowels remained costive and no wind was passed. On examination the abdomen was not much distended, no tenderness was elicited, the pulse was good and not quickened, the tongue not too dry, and thirst, thanks to the sips of water, not marked. She was a fat woman, in comfortable circumstances, living a sedentary life.

She had undergone vaginal hysterectomy in 1920, and had a recto-vaginal fistula. There was no history of colic or jaundice. The woman stated that she had never any trouble with digestion and always fed well.

She was admitted into hospital and a sigmoidoscope passed to the fullest extent. A faint click was felt and heard and a stone was seen. The sigmoidoscope was withdrawn, 1/2 c.cm. of pituitrin injected, and an enema given. A few minutes later the bowels moved, bringing with the faeces a large single stone, the shape of a gall-bladder very much enlarged. It was of light weight and speckled. Presumably it was formed without infection, and left the gall-bladder through a perforation into the bowel without causing any signs and symptoms felt by the patient. This, however, is not unusual with these single stones. The woman is alive and active for her age.

Newtown, Waterford. A. J. D'ABREU, M.B., F.R.C.S.Ed.