probably one of the earliest evidences that rickets has invaded the nervous system.

If the above symptoms be overlooked or ignored, our next acquaintance with the disease will probably be in a fully developed, it may be an irremediable, form.

Oxford-terrace, Hyde-park.

EXTRACTION OF A REVOLVER BULLET FROM THE SKULL.

By SAMPSON GAMGEE, F.R.C.S.,

SURGEON TO THE QUEEN'S HOSPITAL, BIRMINGHAM.

A FEW minutes before 1 A.M. on Wednesday, the 22nd ult., I received an urgent note from my house-surgeon, Mr. Westwood Moore, reporting that a gentleman had just been admitted into the Queen's Hospital after firing a revolver bullet into his right ear. I proceeded to the institution at once, and found the patient in bed. He was sensible, with a fair pulse. A little blood was oozing from the right meatus, and the ear was most sensitive to touch, but not wounded; only slightly bruised at one point. On the left side of the neck, reaching below the larynx, and upwards on to the cheek, was a large, hot, brawny swelling, which, the patient informed me, had been in process of formation for about ten days. Everything had been done most judiciously and promptly for the patient's comfort by the hospital staff. Restoratives, ice, &c., were continued; and I resolved not to interfere, beyond removing a strong metal plate with artificial teeth from the upper jaw.

The patient continued for the next two days in much the same state, as denoted by the subjoined extracts from the temperature chart. For brevity, I only quote the maximum numbers:—23rd, temperature 99·4°, pulse 96, respiration 16; 24th, temperature 99·4°, pulse 104, respiration 22; 25th, temperature 99·3°, pulse 96, respiration 24.

The swelling on the left side of the neck increased greatly, and on the 25th, I could feel indistinct fluctuation in its centre. Through an incision I gave exit to about one ounce and a half of very fetid pus.

Next morning (Sunday, 26th ult.) the swelling just referred to had so much diminished, and the patient was generally in such a favourable condition, that I determined on exploring the right ear; while Mr. Brett, our resident obstetric surgeon, administered ether. There had been a slight but continuous oozing of bloody serosity from the earhole.

With a narrow scalpel I made an incision in the roof and floor of the meatus, so as to admit the tip of my little finger, a metallic probe having previously detected a rough, hard substance within the passage. The inner ear was evidently blocked; but whether by bone or bullet, or both, I could not tell until I introduced a Nélaton porcelain probe. This soon solved the problem. On withdrawing it I found a shiny black mark on the white bulb; only lead could produce that. The diagnosis cleared, arose the question what to do, for the obstructing body seemed immovably rammed into the temporal bone.

I allowed the patient to wake, to have a little nourishment, while messengers were sent to all the members of our honorary staff urgently requesting them to favour me with their opinion in consultation. Their response was most cordial, their counsel and practical assistance most valuable. My friend, Mr. W. G. Archer, of the general hospital staff, was also good enough to attend and assist me, as was Mr. T. P. Salt, our surgical mechanician.

The propriety of attempting the extraction of the bullet having been unanimously agreed upon, rose the question of means. Mr. Brett again placed the patient in a beautiful sleep under ether. Bullet forceps proved of no use. I made all the room I prudently could with the knife, but there was no space for ordinary bullet extractors. By working with the left hand a steel elevator, as a lever against my right index-finger as a fulcrum, I succeeded in extracting the bullet. It weighs 126 grains, and one of the bullets left in the revolver weighs precisely the same. The patient quickly regained perfect consciousness, and took liquid nourishment. Next morning the temperature had risen

to nearly 103°; pulse 144; respiration 24. The state in the evening was: temperature 101°; pulse 136; respiration 24. Perfect rest enjoined; ice internally and to the head, and attention to the bowels by enemata. Some refreshing sleeps were enjoyed. There was no sickness and no paralysis for the first thirty-six hours after the operation; but then coma rapidly supervened; the pupils became fixed; the body motionless. At 10.30, 28th ult., temperature 103·6°; pulse 168; respiration 17. Death occurred twenty minutes later, forty-two hours after the operation.

The post-mortem examination was conducted by Dr. James Oliver, with the assistance of Mr. R. Fitch. There was a considerable amount of sero-purulent effusion in the cavity of the arachnoid, and its vessels were injected. A thin, purulent deposit covered the surface of the brain, especially of the right hemisphere. Much punctiform redness interspersed the cerebral substance. On removing the dura mater a ragged fissure was visible through the roof of the right temporal bone. On laying open the interior of the petrous portion it proved to be tunnelled with an irregular dirty cavity with broken walls, demonstrably the place of lodgment of the bullet.

In the next issue of this journal I hope to offer some comments on the case, with illustrations of the bullet as moulded into the inner ear, and also of the lead mark on the porcelain probe.

(To be concluded.)

TREATMENT OF CHOLERAIC DIARRHŒA BY THE HYPODERMIC INJECTION OF MORPHIA.

By W. HARDMAN, M.B. EDIN., C.M.

IN THE LANCET for Sept. 27th, 1879, appeared a communication from me on the subject of the treatment of choleraic diarrhœa by the hypodermic injection of morphia. I will recapitulate the conclusions I there ventured to draw from an extensive experience of over three years' routine use of this method:—

1. Choleraic diarrhœa can be always immediately stopped by the administration of morphia hypodermically.

2. If severe diarrhœa have persisted over two hours in spite of the administration of morphia or opium by the mouth frequently, the hypodermic injection of morphia should be at once resorted to.

3. If cramps and collapse be present, the purging persisting, no time should be lost in administering morphia subcutaneously in full dose.

4. The treatment is absolutely free from danger, even if temporary suppression of urine or albuminuria be present.

5. Where not curative the treatment is diagnostic, enabling us to foretell with certainty the advent of dysenteric symptoms.

6. The best preparation of morphia for this and other hypodermic purposes is the sulphate, on account of its smaller liability to undergo change into apomorphia. For a knowledge of this last fact I am indebted to my friend, Mr. H. O. Thomas of Liverpool. Obstinate vomiting may persist for twelve to forty-eight hours after the purging is stopped, but need occasion no anxiety. It is the purging that kills.

I am anxious for the beneficial and gratifying results of this treatment to be as widely known as possible; and with this object in view I give a few illustrative cases.

CASE 1.—Mrs. S—, aged fifty-six, has been purged violently all day. Watery stools; now nearly unconscious and voiceless. Purging continues. A third of a grain of sulphate of morphia was administered hypodermically at once. This was on July 23rd. She was never purged again, and was convalescent on the 25th.

CASE 2.—On August 6th was called to a delicate woman, a Mrs. T—, aged about fifty. She had purged all night violently; and up to my seeing her, which would be about 9 A.M., I found her passing colourless, watery stools, sometimes involuntarily, and vomiting almost constantly. She was pale, sunk, cold, with blue lips and finger-nails, fear-

ully cramped, hoarse weak voice, and quick, small, irregular pulse. The people of the house thought her dying. Administered one-third of a grain of sulphate of morphia hypodermically, at once.—Aug. 7th: Never purged again.—Aug. 8th: Convalescent.

CASE 3.—Miss M—, choleraic diarrhœa for twenty-four hours. Cramped; motions like rice-water. Gave a third of a grain of sulphate of morphia at once. Next day convalescent. Never purged again after injection.

CASE 4.—July 19th: Mr. F—, choleraic diarrhœa for twenty-four hours. Gave half a grain of sulphate of morphia at once.—July 20th: Not another stool. Convalescent.

CASE 5.—Was called up on July 26th to a Miss H— about 4 A.M. Was sent word she was dying. I found her unconscious on the floor in a faint, having been purged violently involuntarily. The motions were like rice-water. I ascertained that the purging had been going on since 8 P.M., and that between that time and 4 A.M. she had been moved copiously more than twenty times; she had also terrible vomiting. Gave half a grain of sulphate of morphia hypodermically at once.—11 A.M.: Not purged again; rallying.—July 27th: Convalescent, but weak; never purged again since the injection.

CASE 6.—Miss N— was attacked on August 7th with severe choleraic diarrhœa. Gave one-third of a grain of sulphate of morphia at once.—8th: Convalescent. Never purged again.

CASE 7.—Was called up about 6 A.M. on Aug. 11th to a Mrs. D—, aged sixty. They sent word she was dying. Found she had suffered from diarrhœa for some days, which had become choleraic during the last twelve hours, having had from twenty to thirty motions during the night, which were pale, colourless, and odourless; vomiting incessant; cold sweats; pinched features; voiceless; blue lips; cold extremities; and very thready, weak, irregular pulse; fearful cramps all over; semi-conscious; passing stools involuntarily; countenance changed. Gave half a grain of sulphate of morphia at once. 11 A.M.: Never purged again; rallying; vomiting continues.—Aug. 12th: No more purging; vomiting better.—Aug. 13th: Convalescent and up. This was a very bad case.

CASE 8.—Was called on Aug. 12th to a Mr. S—, who had been vomiting and purging all day and night. I saw him in the evening, receiving a message that he could not last long. Found him hoarse, pinched, and cramped. Gave one-third of a grain of sulphate of morphia at once. Aug. 13th: Never purged again. Up.

CASE 9.—Was called about three weeks ago to a Mr. D—, who had been violently purged about twenty-four hours, with violent cutting pains in belly; had also vomited. Gave half a grain of sulphate of morphia at once. Motions loose and watery-yellowish. Saw him again same evening. Purging, after being better some hours, had returned as bad as ever. Gave opinion that case would develop into dysenteric diarrhœa. Next morning motion still watery, but on slanting the vessel, the characteristic bloody slime was seen adhering to the bottom. He was gradually cured by the administration of ipecacuanha and opium.

Whatever the evacuation, cutting pains in the belly usually denote that the diarrhœa is of a dysenteric nature, and will not yield to morphia alone. Cramps occur only in choleraic diarrhœa, the purging of which is usually, but not always, painless in the commencement.

CASE 10.—On August 10th, 1879, was called to a Mrs. W—, who had been seized with violent vomiting and purging in the night. Temperature 104.4°. Gave a mixture containing chalk and opium after every liquid stool. 8 P.M.: Worse. Motions assuming the rice-water character. Temperature 101°. Motions come from her without her knowledge if she moves. One teaspoonful of the medicine every quarter of an hour until the purging stopped. 10.30 P.M.: Worse than ever. Gave half a grain of sulphate of morphia at once.—Aug. 11th, 10 A.M.: Better. Laughing and cheerful. Says in about a quarter of an hour she felt the injection produce a most wonderful effect. A pleasant, warm feeling spread all over her, and then the purging ceased. Was not purged again, and not the least sleepy.—12th: Convalescent.

CASE 11.—Was called to an old lady, aged sixty-seven, on August 21st, 1879, who had been weakly and failing some time, and who had been purging violently all night. Motions watery, with yellowish flocculi. Gave mixture of opium with chalk after every liquid stool, but after a few hours' trial the

purging was as bad as ever. Gave a quarter of a grain of sulphate of morphia hypodermically.—9 P.M.: Purging, which stopped after the hypodermic injection, has returned again, and she has been purged five times. Mixture of opium with chalk, one drachm every quarter of an hour until purging stopped.—Aug. 22nd: Still purged and vomiting severely. Motions yellowish, watery, with yellowish bilious flakes floating in the fluid. 9 P.M.: Motions assuming the greenish slimy dysenteric character. Patient was now treated for dysentery, and in a few days made a good recovery.

CASE 12 is with difficulty distinguished from genuine Asiatic cholera. Miss F—, a delicate elderly spinster, was seized on Sept. 16th, 1879, about 11 P.M., with violent vomiting. This continued until 12 P.M., when violent purging was superadded; these continued with violence until 1.30 A.M., when I was called up to her. I gave a mixture of opium with chalk after each liquid stool. 2.30 A.M.: Was called up again, as they thought her dying. I found her nearly unconscious, cramped all over body and legs, vomiting violently every minute or two, purging every few minutes, the purging being involuntary and under her. She was showing the whites of the eyes, and the countenance was changed. She was certainly all but gone. Gave at once two-fifths of a grain of sulphate of morphia hypodermically. She did not feel the prick of the needle in the least. 10.30 A.M.: Never purged since injection, but vomiting tiresome. 8 P.M.: Vomiting a little better.—Sept. 18th: Convalescent.

CASE 13.—On August 12th I was called to a Mr. M—. He began purging on the 10th, and got worse and worse until I saw him on the evening of the 12th, when he stated that he had been purged more than thirty times in the preceding twenty-four hours. Motions watery and yellowish. I gave him a mixture containing compound ipecacuanha powder, to be taken every hour until the purging stopped.—13th: Purged all night; very weak; voice going. Gave at once half a grain of sulphate of morphia hypodermically.—14th: Never purged again since injection. Convalescent.

These thirteen cases, which are taken, almost at random, from a considerable number of which I possess notes, illustrate my propositions. Cases 1 to 8 are ordinary cases of choleraic diarrhœa, where hypodermic injection of morphia was resorted to at once, and constituted the sole treatment. One dose usually is sufficient, and convalescence is rapid. Cases 9 and 11 illustrate the proposition that if the purging return it will ultimately prove dysenteric. Cases 10, 12, and 13 show the rapid and complete results of the hypodermic administration of morphia after the equally complete failure of opium by the mouth. I can hardly conceive it possible that this plan of treatment will not prove equally successful in Asiatic cholera, for the more purely choleraic the cases the more perfect and rapid the result. There is a form of diarrhœa attended by vomiting of bile and the passage of yellow, powdery, liquid stools. This form of diarrhœa seems due to an excessive formation of bile by the liver, and will not be cured by the administration of morphia hypodermically. As regards genuine choleraic diarrhœa, I can only repeat what I wrote in THE LANCET last year, that "in the whole range of medicine there is no one deed so gratifying to both patient and practitioner as the administration of a hypodermic injection of morphia in choleraic diarrhœa."

Blackpool.

A HARELIP TROCAR AND TUBE.

Contrived by

SURGEON-MAJOR E. AMBROSE FITZGERALD,
BENGAL MEDICAL SERVICE.

THIS little instrument, to which I wish to draw attention, is devised on the trocar and cannula principle. The piercing portion of the trocar is thin and round, with the point strong, sharp, and somewhat spear-shaped, and made of the best steel. The tube, about two inches long, is made of coin silver, sufficiently stout as not to bend on ordinary pressure or straining, and admits of slight expansion and contraction in its entire length, so as to fit on accurately to the trocar. When a harelip operation is to be performed, the edges of the fissure having been pared, the trocar, armed with a silver tube