exposure of twenty minutes or so. In the treatment of joints, however, I prefer diathermy. It seems on the whole to do a little better, and as the greatest heat is developed midway between the electrodes, it should theoretically be more efficient. After twenty minutes, then, of either radiant heat or diathermy a rhythmically interrupted electric current is applied. Of the rhythmically interrupted currents we have—

The faradic as used in the Bergonié apparatus.

The sinusoidal, interrupted by such a device as the Lewis Jones interrupter.

The static wave current.

The static induced current.

The Bergonié apparatus produces very efficient muscular contractions. It is a little troublesome to adjust. The interrupted sinusoidal is a very useful and efficient current. The static induced current penetrates very deeply and gives rise to strong contractions. Any static machine will give them of sufficient penetration for the purpose. The static wave current requires a machine of high efficiency. As a rule, ten minutes of the static induced or twenty minutes of any of the other currents is given at a sitting.

Usually there is very definite and early improvement; my experience is that during the first week of daily treatment the patient is able to detect it, and the increased confidence inspired doubtless helps to increase the effects. I append notes of a few cases:

CASE I.

A man wounded in the shoulder in April last. On July 13th the wound was healed, but he could not use the arm owing to pain and stiffness. There was wasting of shoulder muscles chiefly, but extending also to the arm and in less degree to the forearm. The static wave current was applied to the muscles of the shoulder for ten minutes and to the biceps for other ten. He had fifteen treatments. Improvement was marked from the first. He discontinued treatment to enter a munitions factory, having then complete, but of course not perfect, use of his arm.

CASE II.

An officer, wounded in the right foot in September, 1914, had treatment by massage and electric baths without improvement. The condition on April 19th, 1915, was as follows: Wasting of right calf, $\frac{1}{2}$ in. less as compared with left. Pain in instep and great toe on walking with two sticks. Bad limp. On walking, great toe dorsally flexed and patient cannot then bend it. The treatment was light to the foot for twenty minutes; static wave to the sole of the foot for fifteen minutes; and static sparks to the joint and muscles of leg. He had twenty treatments, and discontinued to rejoin his regiment; he walked much better without a stick, but still limped. There was no pain, but the limb was weak. The great toe behaved normally.

CASE III.

A private, wounded at the back of the arm, at the junction of the lower and middle thirds. He was operated on, but afterwards could not extend the third, fourth, or fifth digits, nor flex them when extended. There was wasting of the interossei and hypothenar eminences. When the hand was forcibly opened there was a dragging sensation along the ulnar flexors. He had been treated by electricity (a portable faradic coil?). The treatment instituted was static wave current to the scar, and static vacuum tube discharge to the muscles. After eleven treatments there was marked improvement, and the patient returned home.

CASE IV.

A bombardier wounded on September 27th, 1914, two inches above the elbow-joint, through the soft parts anterior to the humerus. When seen on February 16th, 1915, he could not bend the index and middle fingers beyond a right angle with the palm, and there was numbness of thumb palmar surface and the first and second digits, and loss of tactile sensation. Treatment was by static wave current over the wound, and static vacuum tube discharge to muscles and skin. After eight treatments he was very much better, could flex the fingers fully, and had increased power in the hand, but sensation was not improved.

These cases are samples of a moderate number treated. Some fail quite unaccountably to benefit, but they are the exception.

An officer was wounded on the outside of the thigh. There was loss of sensation on the outside of the leg and foot, most on the dorsum of the foot. When seen he had deep-seated pain in the front and the outer side of the thigh and leg. Pressure on the scar caused local pain. I expected that this case would do well, but failed to afford any permanent relief.

TYPHUS IN SERBIA.

BY

B. WHITCHURCH HOWELL, F.R.C.S.,

HÔPITAL TEMPORAIRE D'ARC-EN-BARROIS (HAUTE-MARNE), FRANCE.

As a sequel to Dr. Maitland's notes on the epidemic in Uskub, reported in the *BRITISH MEDICAL JOURNAL* of August 21st, the following observations, gleaned from a much more limited experience of the disease at Vrnjatchka Banja, may be of interest.

Admission of Patients.

It was found essential that the hair of the head and pubic region should be cut short (and in some cases shaved) and then treated with paraffin oil or unguentum hydrargyri. Even then fresh broods of lice made their appearance. The patients were washed in bed, being in various stages of collapse. At the time I was in Vrnjatchka Banja the typhus barracks had no bath-room accommodation.

The Disease.

The majority of patients were Austrians, and, as Professor Morrison pointed out recently, the mortality amongst them was noticeably greater than among the Serbs, owing probably to their being prisoners, of poor physique, and not accustomed, like the Serbians, to live on "pork and beans."

I thought on the whole that the more intense the rash the graver the prognosis—generally the malignant type of case. I noticed also that the rash appeared fairly commonly on the palms of the hands—a fact not often alluded to in the textbooks—generally in the form of faint discrete macules. It seemed to bear no relation to the gravity of the disease.

As a rule the fever fell by lysis, as Dr. Maitland remarked, with, occasionally, "kicks" on the temperature chart; this is contrary to the usual teaching. Some of us thought that the pulse was slowed out of proportion to the temperature. Although I noticed this from time to time it did not seem to be a general rule.

The initial symptoms may be like influenza, as in the case of two of our nurses who contracted the disease; they had aches and pains all over, frontal headache, and pain behind the eyes. The drunken look about the eyes is very characteristic; hence the diagnosis could often be fairly safely made before the appearance of the rash.

When we first took over the fever *Barraques* pulmonary complications were common, several of the cases dying of a rapid form of bronchopneumonia. Later, as the difficulties in nursing were surmounted, the infections of the lung and parotid gland became less and less frequent. It seemed to me at one time as if the typhus-pneumonia were contagious, as I had side by side, not in the same stage of the fever, three cases in whom the lungs were simultaneously affected.

Deafness was frequently present, and one nurse suffered from it for a long time after she returned to work.

I had only one case of melanuria, in a nurse well over 40; this occurred about the twelfth day, and caused some anxiety, especially as the liver was much enlarged. She rallied, however, and about the sixteenth day it had completely disappeared, and the temperature and pulse were normal.

I saw one case of hemiplegia in the sister of a Serbian general; it came on suddenly during the disease, and lasted some days. The patient recovered from the typhus and from the hemiplegia.

Treatment.

This varied in detail only; in general it was, of course, stimulating. As Dr. Maitland states, the Serbians were not in favour of alcohol; we, on the other hand, used it a good deal in $\frac{1}{2}$ oz. doses, increasing it steadily as the pulse got weaker, especially about the eighth to twelfth day. The most critical period was during and after the lysis.

Digitalis was given by the mouth and hypodermically—we had no digitalin—by the mouth in 20 to 40 minim doses every four hours; subcutaneously in 10 to 20 minim doses. Strychnine also was given hypodermically. I sometimes

prescribed ether in 10 to 20 minim doses subcutaneously in very severe cases, generally alternating with strychnine. The ether injection sometimes gave rise to local necrosis of the skin, but this was of small moment, as I am sure the patient occasionally rallied as the result when all else had failed.

A CASE OF LEPROSY DIAGNOSED BY X RAYS.

By MAJOR A. NEVE, F.R.C.S.E.,
KITCHENER INDIAN HOSPITAL, BRIGHTON.

THE following case is of considerable interest, as the disease was so atypical as to remain in doubt, even when examined by experts, until the x rays showed clearly the well-marked osseous lesions of leprosy.

Jemadar M. S. was invalided in April, 1915, with the diagnosis of rheumatism. He had served through the winter campaign, and had latterly complained of headache and other ill-defined pains. He also had a widespread papular rash, with some pigmentation in the face; this, he states, has been of many years' duration. His left eye was operated upon four years ago for pterygium, and there is a slight opacity of the cornea in that eye, with injection of the conjunctiva. There is a slight stare, not due to exophthalmos. He has occasional pains in the back, and also in the feet, of a burning character. When he arrived the feet were swollen; this was attributed to exposure in the trenches. From the history it seemed that he might have had syphilis, as potassium iodide had been prescribed years ago with benefit.

The points that raised a suggestion of leprosy were (a) a little clubbing of the fingers, of which the terminal joints were not quite straight and symmetrical; (b) the toes appeared slightly shortened, and one of them was crooked.

He was carefully examined for certain signs, which were all negative:

1. There were no maculae on the back or extensor surfaces of the limbs.
2. No tubercles on eyebrows, ears, or elsewhere.
3. No anaesthetic patches on feet, hands, or body.
4. No thickening of the ulnar nerve.
5. No naso-pharyngeal ulceration or tubercle, and no laryngeal symptoms.
6. No paresis of the lower eyelids.

A radiogram was taken on July 11th by Captain Gale; it showed entire disappearance of the terminal phalanges of most of the toes. The proximal phalanges have also become greatly decalcified; in the right foot the second phalanx only is intact and in the left foot the third, while

the big toe of the left foot is only represented by a triangular piece of bone three-quarters of an inch long, and the fifth phalanx has quite disappeared.

The distal portions of all the metatarsal bones are extraordinarily thinned.

In the fingers slight changes are perceptible in all the terminal phalanges on both sides. Those of the thumbs

are peculiarly eroded and shaped like pollarded willow trunks, and the terminal phalanx of the index finger is a mere stump.

In leprosy it is the osseous framework of the phalanges which first becomes irregularly absorbed. At a later period the metatarsus or metacarpus; the former is more affected, perhaps on account of traumatism, and sepsis spreading from trophic ulcers of the sole of the foot, which also affects the tarsal bones, and spreads to the ankle-joint. Amputation is then resorted to, and it is found that the bones of the foot are so softened as to be readily cut by a knife. It is seldom that a case with slight and doubtful general symptoms shows such extensive osseous changes as to make them the decisive diagnostic factor. Hence the value of the Roentgen rays in this case was peculiar.

I am indebted to Colonel Sir Bruce Seton for permission to publish this case.

DR. HENROT gave recently to the Académie de Médecine an account of the bombardment of the hospital at Rheims. The bombardment did great damage. A breach of about 10 metres was made in the hospital, causing the falling of the façade and the roof. The patients' beds were seen suspended to the walls. The maternity department, situated in a separate wing, by some happy chance was not touched, but by way of precaution the patients were moved to the cellars, as the bombardment was continued every day during half an hour in the morning and half an hour in the afternoon. One night 2,000 shells fell on the town between 9 p.m. and 5 a.m. In the cellars the patients lay on mattresses or on the ground; they were so close together that it was difficult to reach any one. The women pupils, who stuck to their posts, had to give the necessary injections and enemas on their knees. Such was their care and devotion that in spite of privation, fatigue, and mental distress the sanitary condition of the women remained good. During the months of August, September, October, and November (1914) no case of infectious disease occurred. Only two women died—one of eclampsia, the other owing to faulty insertion of the placenta. Some poor women died on their way to the hospital of exposure or want in railway stations, in the train, or in the street. Most of the women were more or less exhausted but they bore their sufferings cheerfully. M. Henrot relates a remarkable case. One day a fine child was presented to him. When he asked for the mother he was told that a fragment of shell had torn open the abdomen and the uterus, and the child had simply to be extracted. As M. Henrot says—this is a form of the Caesarean operation of which there is no previous record.