A CASE OF LEPROSY TREATED WITH RADIUM AND DIATHERMY.

By C. E. IREDELL, M.D. LOND., M.R.C.P. LOND.,
SURGEON TO THE ACTINO-THERAPEUTIC DEPARTMENT, GUY'S HOSPITAL.

CASES of leprosy occurring in medical men are rare, and I believe that none so far has been described in which radium and diathermy have been used. The case here recorded is that of a medical man who was superintendent of a leper asylum from 1901 to 1908.

In 1910 the patient first noticed a sensation of pins and needles in his left arm. This sensation gradually increased, and in the month of September while shaving he noticed on his left arm some maculæ with fawn-coloured centres and dusky borders. He at once thought that he might be going through the preliminary stages of leprosy, and on making himself sweat profusely he noticed that there was a dry patch on the left wrist extending over the fourth and fifth metacarpal bones, the other side and the rest of his body being quite wet. He then went to Dr. F. M. Sandwith, who hoped he had psoriasis but thought it might be leprosy, and also to Dr. J. M. H. MacLeod, who, on finding that a test-tube of boiling water produced no sensation of heat in the left arm, considered that he was undoubtedly suffering from maculo-anæsthetic leprosy. Shortly after this a macule appeared on the right hip. His blood taken from the macule, when examined by the late Dr. H. R. Dean, contained no *B. lepræ* and gave a negative Wassermann reaction. Cramps in the flexor plantar muscles and twitchings of the muscles of the hands, especially of the left adductor pollicis, next appeared, and in June, 1911, the numbness of the left little and ring fingers became more marked and the maculæ had increased in size and number. On the right cheek there was a leproma of the size of a pea. By this time the patient was never absolutely free from pain in the ulnar nerve, which, however, did not prevent sleep. This increase of pain was largely due to bruising the nerve by falling on stepping stones. He could not tell the position of the little finger without looking at it, and there was a feeling of discomfort in the left axilla. Over the left trochanter femoris was a patch of the size of the palm of the hand, which was less sensitive than normal. In November of the same year he felt that the right ulnar nerve was showing signs of being affected. He was unable to approximate the little and ring fingers of the left hand, and the ridges of the pad of the little and ring fingers were becoming obliterated. In January, 1912, he began to take iodated chaulmoogra oil. A swelling appeared on the lower lip which was considered by Dr. Sandwith and Dr. MacLeod to be a leproma. In May the maculæ had almost cleared up, but the nervous symptoms remained the same. In April, 1913, he noticed blood-stained mucus in the nasal passages, but on examination no *B. lepræ* was found. This search for the bacillus in the nose has been repeated frequently, always with negative results. In September, 1913, the leproma in the lower lip began to fluctuate, and Dr. J. W. H. Eyre found the *B. lepræ* in the pus from it. In October an application of radium of 25 minutes was given to the leproma, and a fortnight later, after discharging freely, it healed up. Between November, 1913, and April, 1914,

inclusive, six applications of 22½ mgm. of radium were given to the ulnar nerve. In January, 1914, he began to be troubled with abdominal symptoms, and in April last he wrote: "Four times since Jan. 3rd I have been in bed for three days at a time with pain in the abdomen shooting all along the large intestine from the epigastrium to the end of the sigmoid flexure. Some considerable constipation with difficulty in extruding the fæces unless by an aperient was present, and I sometimes vomited without any feeling of nausea. I took blue pill, Hunyadi Janos, &c., with little effect, and stayed in bed and had only milk puddings, &c. This day I had radium as usual, and then diathermy to arms and afterwards from the right hypochondrium to the left groin. The relief to my arm was marked, and the next day I passed a very copious solid motion, and this was repeated daily. I was also free from abdominal pain." On June 10th he wrote: "The radium seemed to relieve the pain in the arm, and certainly it broke down a leproma in the lip, so that now there is only a small, dry, hard sebaceous gland instead of a leproma bigger than a pea. On the other hand, I am under the impression that the diathermy gave me more relief. I am hoping that the atrophied muscles of the thumb are plumper and that the contraction of the little finger is less. I also notice that I now have only undulating contraction and movements of the fingers and no fibrillations."

In this case three facts are specially worthy of note: (1) that the patient is better in all respects than he was six months ago; (2) that his improvement began when diathermy was started; and (3) that he felt better directly after each treatment. The disease in his case has been characterised by (a) maculæ, (b) two lepromes, (c) neuritic affections, and (d) intestinal trouble.

(a) These were the symptoms of the first stage of the disease and passed off before treatment was begun.

(b) The leproma on the cheek disappeared spontaneously; that on the lip was not treated with diathermy, and therefore it cannot be said what the effect of diathermy would have been, but it certainly seemed to respond at once to radium treatment.

(c) The effect of diathermy on the patient's ulnar nerve was remarkable. For some time he had been in the habit of putting his arm in a hot bath in order to ease the pain. After holding two electrodes in his hands for 20 minutes' treatment the pain in the arm was far more relieved than it had been by the hot baths, and he found that he was able to move the little finger better than he did before. Some twinges of the left external peroneal nerve cleared up with one application.

(d) No less striking than the effect of the treatment on the nerves was the effect on the abdominal trouble. While the treatment was in progress peristalsis was distinctly perceptible to the patient, and in the course of the 24 hours following very copious evacuations followed, although no drug was used. This is in marked contrast to what had happened in the first three attacks, when it was found necessary to use aperients largely. Since April, when the treatment started, he has had five treatments at intervals of a few weeks, and on two occasions he has spent a week in town and had treatment daily with corresponding benefit.

Dr. W. H. Barber tells me that Professor Unna, of Hamburg, uses the cauterising action of the diathermy current in nodular leprosy with

remarkably successful results. So far as I am aware, however, the use of the non-coagulating action of diathermy in leprosy has not been described. In post-mortem examinations on cases of nodular leprosy the abdominal organs, especially the liver and spleen, are very generally found to be infected with the *B. lepræ*. Presumably they are affected in most cases clinically, and therefore no treatment which neglects them can be considered satisfactory. Pathologically the infection of these organs is of the same nature as that of the nerves in cases of anæsthetic leprosy. If, therefore, the thickening of the nerves can be reduced and the nervous symptoms relieved it seems possible that relief of abdominal symptoms by the same treatment might be attended by a corresponding diminution of the visceral affection. The improvement in the patient has been so marked as to encourage a further trial of it, and the patient, who has seen these notes and consented to their publication, is so much impressed by the treatment that he is contemplating going abroad to try it on a series of cases.

Cumberland-terrace, N.W.

ON SOME CASES OF ANOMALOUS FEVER.

By SEYMOUR TAYLOR, M.D. ABERD., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO THE WEST LONDON HOSPITAL.

DURING the past three years I have seen four cases which presented many features of great clinical interest and much difficulty in diagnosis. As these cases in their symptoms and duration were unlike any well-known fever in most respects, I have used the above nomenclature.

It would be tedious to narrate the symptoms of all these cases, as they each bore much similitude one to another, and it will be sufficient if I record one case only, the course and clinical events of which I observed and carefully noted. It is necessary to preface the following remarks by saying that all the patients were elderly, the youngest, a male, being 75 years of age, and the eldest 81 years of age. Three were males, one a female. Singularly enough, in each instance the illness occurred in the early months of the year—January, February, or March. Being at a loss, in each case, to ascertain the cause of the illness, I carefully examined the sanitary arrangements of the houses in which they dwelt, the kitchens and the culinary utensils in use also coming under my inspection. In two of my cases especially I found stew-pans and saucepans, especially the copper ones, in a very dirty and ill-kept condition; and I have ascertained since that in the two earlier cases a similar foul condition obtained in the cooking vessels. Old and incompetent, but trusted, servants, who put their cooking utensils aside after use without any attempt to cleanse them, were probably the guilty cause of the illness in each case, though I was not able completely to establish this suspicion. In each instance the course of the illness ran much on the same lines, and all happily ended in recovery. The following record of one case will therefore suffice.

The patient, aged 78, a man of means, was living in a large, gloomy house superintended by a housekeeper. He complained of no very definite symptoms, but merely a general feeling of illness and malaise. Beyond a slight quickening of the pulse (80) and a little rise in temperature (98.8° F.) I found no signs of any definite disease. The bowels were slightly

constipated and the tongue was somewhat furred. I ordered a simple saline purgative and put him on a light diet. On Feb. 12th the temperature had risen to 100.2° and the pulse to 95. He complained of sore throat. A general redness of the fauces was all that could be seen. The tonsils certainly were inflamed also and somewhat more prominent than normal, but there was no sign of diphtheritic membrane and no follicular tonsillitis and no skin eruption. In addition to his medicine he was ordered a warm gargle of weak solution of permanganate of potash. Previously to this a swab from the fauces was taken, but careful bacteriological examination failed to reveal the presence of any micro-organisms other than those often associated with ordinary inflammatory affections of the mouth. In other words, he had no Klebs-Löffler bacilli, but only a small amount of cocci, not of the Fraenkel type, and no evidence of Pfeiffer's bacillus. The teeth and their sockets were in quite a healthy state, as he paid periodic visits to a competent dentist, and had only recently been under his care. On Feb. 14th the patient complained of pain and tenderness in his larynx, and he was aphonic, also slightly deaf. The laryngeal mirror revealed some congestion of the aryteno-epiglottic folds; but the vocal cords were intact, though the mucosa of the trachea was somewhat red and congested. He had much cough, and expectorated with some pain and distress a glairy tenacious mucus, such as is usually observed in the early stages of inflammatory mischief in the upper air passages. His temperature had risen to 102.4° and his pulse to over 100. On Feb. 15th, the fifth day of his illness, the temperature still showed an upward curve, being 104°, though his pulse had only risen to 100. Auscultation of his chest revealed signs of rather extensive and general bronchitis, and the bases of the lungs were engorged. The tongue was dry, slightly fissured, and coated with heavy brownish fur. The face was flushed; he had sneezings and a profuse nasal discharge, which, however, was not offensive. The urine was entirely free from albumin and sugar. Towards the evening he became delirious and obstinate, and only with difficulty was kept in bed.

I prescribed with subsequent good results 1/6th grain of morphia, and it gave him some hours' rest and sleep. On Feb. 16th the patient complained of hiccough. He still had some mental obfuscation. The abdomen was distended. He had slight diarrhoea—three liquid stools during the day-time—but they were dark in colour, and not characteristic of typhoid fever, though extremely offensive. The patient had suddenly become very deaf, and the nasal discharge was muco-purulent. No spots were to be found on any part of the trunk; the spleen could not be felt, and there was no tenderness in the right iliac fossa.

As the temperature had now been steadily rising for six days and abdominal signs having become manifest, I had a "Grünbaum-Durham" (Widal) test examination of the blood made by a competent observer. The typhoid reaction was negative. I may here remark that this examination was repeated eight days later, with the same result. During the next week the progress of the illness was much the same. He continued to be delirious during the day time, and this symptom was aggravated during the night, entailing the constant care and attention of two nurses. Diarrhoea, with some attendant flatus, continued; the abdomen was still distended, but after careful and repeated examination for any rose-coloured spots none were ever discovered. Nor was the spleen enlarged, or if it were it was not sufficiently so to afford evidence thereof to palpation or percussion. He still continued to have dyspnoea and cough, and also expectorated a large quantity of tenacious mucus which was occasionally streaked, but not intimately mixed with, or stained by, blood as it is in true pneumonia. His face and lips were free from any signs of herpes.

Still the temperature curve suggested enteric fever, and his general condition certainly was that which is known as the "typhoid state." Further, a similarity to enteric fever was seen in the subsequent curve, which having remained at about 104° for two or three days gradually began to fall, until about Feb. 24th, or 14 days after the beginning of his illness, the downward line became very marked, and the thermometer registered 98.4° on Feb. 27th, the seventeenth day of his illness. When the chart was made out it was seen that the curve of the temperature was a typical "brick arch" curve, a gradual rise to a rounded top, and followed by a slightly more abrupt line of fall to