this same fact I attribute the success of the treatment employed.

The form of treatment in which I am particularly interested—viz., electricity—has been frequently tried in this disease but with disappointing results. When I came to look into this matter I found that in every case the method employed was the faradic current applied by means of a wire brush. Bearing in mind that pain is a usual if not the chief symptom it is strange that a method should be used which from its very nature was practically bound to make the condition worse. Indeed, if any benefit took place after such applications, I should say it could only be in spite of, rather than on account of, such treatment.

Except in those very rare cases of neuralgia where the counter irritant action of an induction coil is useful, pain is a direct contra-indication for the use of induction coil or rapidly varying currents of any kind. Is it any wonder then that electrical treatment has so far been unsatisfactory in the treatment of this condition? It would never occur to me to use any but the constant current, in the first instance at least, but it was only in the last case that it was given a fair trial. In the first the patient was so overjoyed to find he had not anæsthetic leprosy that he took the first available ship to India without waiting to undergo a thorough course of treatment. In the second the patient was so disappointed at not being completely relieved after some half-dozen applications that treatment was given up. The case was one of considerable standing, and patience and persistence were necessary to get good results. In the third case treatment was begun early. The indifferent electrode—negative—was placed across the lumbosacral region, while the active electrode was applied over the affected area, and especially over the place where the nerve pierces the fascia. This electrode was one of 100 square centimetres area and was moved to a fresh part of the affected area every two or three minutes. The current passing varied between 30 and 50 milliamperes. Definite improvement began after the third application and steadily progressed. Eight applications were given in all, the last being on Dec. 10th, 1907. The patient has remained perfectly well ever since but in view of his hunting proclivities recurrence is not improbable.

Queen Anne-street, W.

PERFORATION OF THE ŒSOPHAGUS BY A RABBIT BONE:

SEPTIC INFLAMMATION OF THE MEDIASTINUM;
ULCERATION INTO THE AORTA; DEATH
FROM HÆMORRHAGE.

By R. LAWFORD KNAGGS, M.C. CANTAB.,
SURGEON TO THE LEEDS GENERAL INFIRMARY.

A YOUTH, aged 16 years, was eating some rabbit-pie when something "stuck in his throat." After his meal he went to see a football match and on his return he vomited. From that time he had had a painful sensation in the lower part of the sternum and had taken practically no solid food, but this was apparently because he had no appetite for it and not from any difficulty in swallowing. Two days after the occurrence he went to the Leeds General Infirmary and the resident casualty officer passed a probang into the stomach without meeting any obstruction. In the interval before his admission on the seventh day, the patient stated that he had been under the care of a medical man who said that he was suffering from pneumonia. On the day of admission he began to vomit large quantities of bright blood and he passed dark blood from the rectum two or three times.

When admitted to the infirmary the lad was extremely ill, very pale, sweating profusely, and mentally quite clear. He was not in pain. He brought up a small amount of bright frothy blood. The pulse was 130 and poor, the respirations were 30, and the temperature was 98° F. There was a definite pericardial rub and signs of fluid at the base of the left chest, which on exploration proved to be thin turbid odourless serum. Death occurred four hours after admission.

Post-mortem examination by Dr. G. W. WATSON.—On opening the body there was marked œdema of the tissues over the front of the chest. When the sternum was removed an acute inflammation of the tissues in the mediastinum was found. The soft tissues of the whole mediastinum extending

quite down to the diaphragm, but chiefly affecting the upper part, were of a dirty greyish-black colour and there was also a little exudation. There was no offensive odour. The pericardium was adherent to the pleura on the left side and when the sac was opened *in situ* an extensive simple plastic pericarditis was revealed. There was slight recent pleurisy in the left chest and about half a pint of turbid effusion. In the œsophagus, about three inches below the cricoid cartilage, were two perforations situated opposite to one another, as if caused by something that had lain transversely and been impacted in the tube. There was very little sign of inflammatory reaction of the tissues in these situations. The perforation on the left side extended into the cellular tissue for about an inch. On the right side a probe could be passed through the other opening in the œsophagus into the middle of the dirty-looking material in the mediastinum. Further investigation showed that the abscess in the mediastinum had ulcerated into the aorta just at the commencement of the descending portion of the arch on its upper and posterior aspect. The ulcerated aperture was three-quarters of an inch distant from the origin of the left subclavian artery. A probe could be passed without any force whatever from the œsophagus into the aorta. No bone could be found anywhere. All the abdominal viscera were quite healthy, but the stomach and intestines were full of pure blood. The blood in the stomach formed a large clot which was a complete cast of that viscus and from it there was a prolongation into the œsophagus for several inches. At the other end the pyloric portion was continued into a cast of the first and second parts of the duodenum.

Leeds.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Phagocytosis carried out by means of Melanin.—Administration of Tuberculin (I.R.) and other Vaccines by the Mouth, together with (a) Normal Saline Solution; and (b) Fresh Horse Serum.

A MEETING of this section was held on March 24th, Dr. S. J. GEE, the President, being in the chair.

Mr. S. G. SHATTOCK and Mr. L. S. DUDGEON communicated some observations upon Phagocytosis carried out by means of Melanin, more particularly with reference to the part taken by the leucocytes in infective diseases.¹ When melanin (from the eye of the ox) in salt solution was mixed with immune blood the phagocytosis might be below normal, or normal, or considerably higher. Melanin was opsonised. An immune serum could be largely deopsonised by saturation with melanin. That could only result from opsonisation of the melanin. Conversely, saturation of a tuberculous serum with tubercle bacilli largely reduced the phagocytosis of melanin. That showed that the chief increase of opsonin was not of a specific kind. The phagocytosis of melanin, however, was diminished after heating the immune serum. In this Mr. Shattock's and Mr. Dudgeon's observations accorded with those of R. Muir and L. B. M. Martin, which proved that thermolabile opsonin (in normal blood) was non-specific, since it could be removed by very different micro-organisms. Mr. Shattock and Mr. Dudgeon maintained that the leucocytes of immune blood were in some cases more active than those of normal blood. An increased phagocytosis of melanin occurred in some cases if melanin was presented to the "washed" leucocytes of an immune blood in normal serum, as compared with washed normal leucocytes in normal serum; or, if melanin was presented to "washed" immune leucocytes in immune serum, and to "washed" normal cells in immune serum, the ingestion done by the patient's cells was in many cases greater than that done by normal cells. They concluded, therefore, that the calculation of the opsonic value of the patient's serum alone did not give a complete estimate of the patient's hæmophagocytic resistance; it might be too high or too low, or as a coincidence it might exactly represent it. The method of making a hæmophagocytic estimate

¹ This communication is based upon one made to the Royal Society of London through Professor J. Rose Bradford.