frequency, and the sleep became tranquil and refreshing. The breathlessness subsided; the hands and feet desquamated freely between four and five weeks after commencement of treatment. She was for a time troubled now and then with a little sensation of faintness, for which small doses of stimulants were prescribed.

This case has gone on uninterruptedly well, and she now takes half a lobe every twelve or fourteen days. She is smaller in girth by 5 inches; she enjoys life, takes her position in her social circle, and says she feels better than she has done for years.

Her friends, who have not seen her for some months, state they would not have recognised her, and practically there is nothing to be seen in meeting her to indicate that she has ever had myxœdema.

There is still a little albumen in the urine, for which she is taking steel. The periods have ceased entirely. The points of interest in this case, I think, are the long duration and advanced condition of the disease; the grave mischief in the right kidney; the rapidity with which the remedy took effect; the lesson to be learned not to give too large doses and upset the digestion—resulting in nausea and vomiting—and the satisfactory results obtained by the administration of small doses. And especially I would direct attention to the large quantity of mucus passed in the urine from almost the first dose of the thyroid.

The gland administered was from sheep slaughtered two or three hours before, and prepared by fine mincing with sharp scissors in the glass from which the patient drank it after the addition of a little brandy and water.

For much valuable information on this mode of treatment, most courteously given, I would express my warm acknowledgments to Dr. Hector Mackenzie.

SARCOMA CAUSED BY PSOROSPERMS.

BY J. JACKSON CLARKE, M.B., F.R.C.S.,
Curator of the Museum and Pathologist at St. Mary's Hospital, and Assistant-Surgeon at the North-West London Hospital.

ON December 20th, 1892, I had the honour of communicating to the Pathological Society some observations which had led me to the settled conclusion that squamous epitheliomata not only contained parasitic sporozoa, but were caused by them. By subsequent study my conviction has been confirmed, and extended to cancers of the most varied kinds, and to some adenomata and cysts of the breast. To discuss this question adequately, giving references to the work published upon it, would be impossible in a single article, and as I hope very shortly to go fully into the evidence for and against the psorospermial origin of cancer and other pathological formations, I will here only relate briefly the result of a renewed examination of one group of malignant growths, namely, the sarcomata.

The first case of sarcoma I examined after learning to recognise psorosperms in various human growths, was a myeloid sarcoma, of which a beautifully prepared section was kindly given to me by my friend, Mr. John Griffiths, to whom the pathological examination of the growth had been entrusted by Dr. Glinn, who removed it. The section is stained with logwood and eosin.

Every part of the large specimen, which is a complete vertical section of the growth, abounds in sporozoa in various stages of development. The parasites are almost identical morphologically with those described[1] in cancer. I have represented them in the three woodcuts.

Fig. 1 shows a giant cell which contains to the right an encapsuled and to the left two amœboid psorosperms. Adherent to the left end of the giant cell is part of an encapsuled psorosperm in the plasmodium stage.

Fig. 2 represents a giant cell with two encapsuled plasmodia adherent to its right hand border, whilst the body of the cell contains several vacuoles, probably due to parasites having fallen out in the course of mounting the section.

Fig. 3 represents part of the most interesting region of the neoplasm—its advancing border. Along the entire peripheral zone the section could be examined from end to end without anything but amœboid psorosperms and remains of infiltrated connective tissue coming into view. In the centre of the field (Fig. 3) is a psorosperm in the plasmodium stage, in which spore-formation is commencing. Below is part of a giant cell containing one encapsuled and two amœboid psorosperms. In the field are also numerous free amœboid parasites, and to the left is part of a large plasmodium, within which are nuclei and fibres undergoing digestion. All the drawings were made under Leitz $\frac{2}{10}$ in. oil im. and Zeiss's oc. 2.

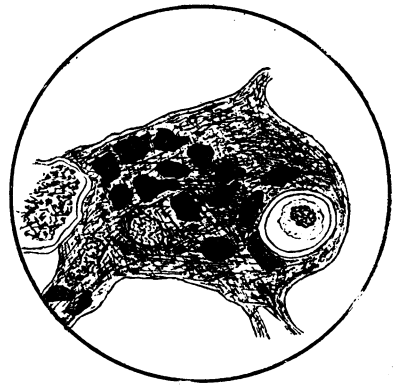

Fig. 1.

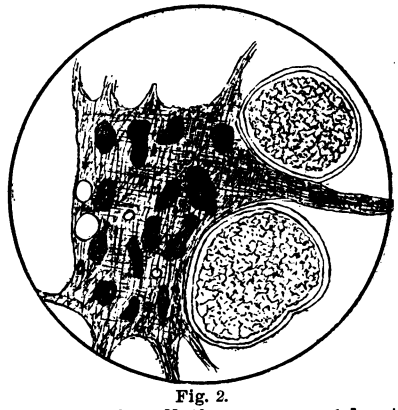

Fig. 2.

In this sarcoma, as in all the cancers (about 20) I have examined recently, there is in the advancing zone an army of amœboid psorosperms invading and digesting the tissues beyond, and thus determining renewed growth in the tissue with which the parasites have established a symbiosis.

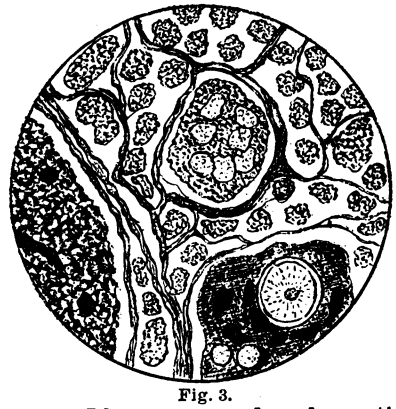

Fig. 3.

Other sarcomata I have now under observation show the same features as this myeloid of the jaw. In the latter the epithelium covering the growth is being invaded and destroyed by the parasites and shows no sign of proliferation.

[1] BRITISH MEDICAL JOURNAL, December 24th, 1892, p. 1387.

It would appear that in cancer the parasites exist in symbiosis with a certain epithelium, whilst they are parasitic as regards the other tissues, whilst in sarcoma there is a symbiosis which concerns the parasites, and a certain mesoblastic tissue and a parasitism affecting the other tissues.

Authors who recognise only the intracellular stage of psorosperms, made familiar to us by the admirable work of Soudakewitch, Ruffer, Walker, and others, give a very inadequate estimate of the number of parasites present in cancer. As in this sarcoma, I have found in some hundreds of sections of many cancers parasites in every field of the highest microscope powers at my command. Though at first difficult to recognise amongst the cells of a tissue, when once their life-cycle is understood the sporozoa are found to possess characters almost as definite as those of the itch-mite, etc. Their presence and disposition in the infected tissues explain the malignant and some other growths as completely as the acarus explains the phenomena of scabies. The sporozoa of cancer and sarcoma appear to me to be more closely related to the hæmatozoa than to the coccidia. Since one stage of their existence is passed in the interior of a cell of some other animal, it cannot be easy to make artificial cultures of them so long as we are unable to manufacture living matter. Indeed, desirable as it is to study the biology of these parasites, I think, in the face of the convincing objective evidence afforded by histological methods, pure cultures are in this instance unnecessary to establish a causal relationship.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

INCUBATION PERIOD OF CHICKEN-POX.

ON December 24th, at 9.30 P.M., I was called by a gentleman to see his son, a lad of 10 years. I found him suffering from varicella, the rash having appeared that morning. The boy had only returned from school in England on December 20th, and, beyond being a little "out of sorts," had not given any evidence of illness before. Immediately the eruption was seen he was severely isolated from the other three children in the house, but on January 7th they all simultaneously developed the rash. Taken in connection with Mr. Eyre's note in the BRITISH MEDICAL JOURNAL of December 31st, these cases appear to me to go far to prove a definite incubative period for varicella of fourteen days. My first little patient stated that some of the boys in his room at school had spots out on them, but that no notice was taken of them by the authorities.

Lismore. PATRICK R. DENNEHY, L.R.C.P.I.

RHEUMATIC NODULES WITHOUT CARDIAC LESION.

A BOY, aged 8 years, was admitted into the Manchester Southern Hospital on August 11th, 1892. He was then suffering from pains in several joints, and both wrists were found to be swollen. A large number of subcutaneous nodules were noticed in the following situations: about a dozen large and several smaller ones were found symmetrically distributed on each side of the spinal column, the largest being the size of a hazel nut. One was situated over the middle line of the sacrum, and one on each iliac crest. There were two on the spines of each scapula, several in the neighbourhood of each olecranon, and one on a flexor tendon in each forearm. A large nodule was situated on the back of each hand, and all the metacarpo-phalangeal joints were affected. On the day of admission there was some suspicion of a systolic murmur at the heart's apex, but this was certainly not present on the following day, nor was it, or any other sign or symptom of cardiac affection, discovered at any subsequent time. A succession of nodules appeared and receded between the date of his coming under observation and the end of December, when they finally vanished. In addition to the situations mentioned above, nodules were found on the parietal and occipital bones, on all the phalangeal joints of the fingers, around the margins of the patellæ, and about the malleoli. The distribution was always symmetrical. The temperature was recorded night and morning during the whole of this period, and was practically always normal, having exceeded 99° on four occasions only, the highest temperature being 99.6°

As is well known, subcutaneous rheumatic nodules have, except in very exceptional instances, been found associated with progressive heart disease, and many of the few cases in which the heart has appeared normal have been in adults. This case is, therefore, noteworthy in that it was that of a child, which presented a well-marked series of nodules without the usual concomitant valvular mischief.

Manchester. A. M. EDGE, M.D., M.R.C.P.

GASTROTOMY FOR FOREIGN BODY.

I HAVE read with much interest in the BRITISH MEDICAL JOURNAL of January 7th a case in which Mr. Cant of Lincoln performed gastrotomy for the purpose of removing from the stomach a razor which had been swallowed by a melancholic. Medical literature records the swallowing of the strangest articles by lunatics with suicidal intent. Five years ago I operated on an inmate of the Hull Borough Asylum who had swallowed a skewer. It was not necessary in this case to adopt the ingenious methods of diagnosis such as were resorted to by Mr. Cant, for the skewer had penetrated the left edge of the thorax below the eighth cartilage, where it was encircled by a slough the size of a crown piece. I opened the stomach, and on pulling the thing out found in its eye the stem of a clay pipe, with a fragment of the bowl. The patient recovered, and is still an inmate of the asylum.

D. LOWSON, M.D.,
Assistant Surgeon Royal Infirmary, Hull.

DISPLACEMENT OF THE ULNAR NERVE.

I WAS brought into contact with a case the other day which may be of some interest to your readers.

Mrs. G., a year ago, while coming downstairs stumbled, but in endeavouring to recover herself struck her elbow severely against the wall. Since that time, if any pressure was brought to bear on the internal condyle it gave rise to severe pain and tingling along the inner side of the forearm and little and ring fingers of the hand.

On examination I found the ulnar nerve displaced from its groove inwards on to the most prominent part of the condyle, and pressure on it produced pain and tingling in the forearm and fingers corresponding to the distribution of the nerve.

Displacement of the ulnar nerve is said sometimes to complicate fracture of the internal condyle, and to be an obstacle to the accurate apposition of the fragments in the treatment of that fracture. Here, however, there does not appear to have been any fracture, and the nerve is situated over the innermost part of the condyle, and not in front of it.

Aspley Guise, Beds. H. W. CUNNINGHAM. M.B.

THE DEPOPULATION OF FRANCE.—The returns for France for 1891 show that the excess of deaths over births—876,000 against 866,000—is 10,000; but for an excess of births over deaths of 9,000 among the foreigners it would have been 19,000. The English are the only class who do not contribute to this set-off, for their deaths numbered 478 against 368 births. The Belgians, on the other hand, show an excess of 4,000 births over deaths, and the Italians also an excess of 4 000. The Spaniards exhibit the smallest proportion of illegitimate births, 6 per cent., while the English rate is 11 per cent., the Italian is 10. the Swiss 15, the German 30, and the French 8. The 866.000 aggregate births compare with 838,000 in 1890 and 880,000 in 1889. There has been an almost uninterrupted decrease since 1881, when the number was 937,000. In 53 departments the deaths exceeded the births, while in 34—principally in Brittany and Flanders—the births exceeded the deaths. The excess of births over deaths was 108,000 in 1881, 97,000 in 1882, 96,000 in 1883, 78 000 in 1884, 87,000 in 1885, 52,000 in 1886, 56,000 in 1887, 44.000 in 1888, and 85,000 in 1889. In 1890 there was for the first time an excess of deaths over births, namely, 38,000, and in 1891, as above stated, that excess was 10 000; but the quadrennial census returns show that the influx of foreigners now prevents an actual decrease of the population, just as it previously to an appreciable extent swelled the slight increase.