of the first week the patient was convalescent; she left the hospital at the end of the month. There was no trouble with the long abdominal wound.

The flatulence and obstruction followed by diarrhoea probably represented an attack of peritonitis, which was presumably localised, else vomiting and other well-known symptoms would have been present. Want of space prevents me from entering into questions relating to the beneficial or evil effect of actions of the bowels, spontaneous or otherwise, during the first week after abdominal section. Nor can I dwell on certain minute details of treatment except that I must observe that in my opinion careful and frequent emptying of the drainage tube greatly contributed towards saving this patient. I only wish to emphasise the essential features of the case in respect to the nature of the tumour. The case proves that a new growth in the ovarian ligament may develop so as to form a large, solid tumour, bearing a pedicle which may be safely secured by ligature. Owing to the fact that the ovarian ligament is practically uterine tissue, ligature of its pedicle apparently causes disturbances often seen in other operations where uterine tissue is tied or clamped. I observed similar disturbances in a former case where I removed a sessile ovarian cyst with a small portion of the adjacent cornu of the uterus; the opposite ovary was left alone, and the patient still menstruates. I relate this because the fact that I removed both ovaries in the present case must be taken into account, nor can I doubt that the double oophorectomy at least had a share in causing the profuse metrostaxis.

THE ARREST OF GROWTH IN CANCER BY A POWERFUL INTERRUPTED VOLTAIC CURRENT (ELECTRO-NECROSIS).

By J. INGLIS-PARSONS, M.D.,
Assistant Physician, Chelsea Hospital for Women.

MANY of those gentlemen interested in my paper in the JOURNAL of April 27th, who have written to me on the subject, have confused my method of treatment with electrolysis. The following details will explain the difference between the two.

Electrolysis, as the term is now understood in the profession, consists in the concentration of a continuous current for a given time by means of a small electrode in contact with the object to be electrolysed. Whenever this occurs, three distinct actions take place:

1. The decomposition of molecules in the immediate neighbourhood of the poles.
2. The formation of acids and alkalies, at the positive and negative poles respectively, with the caustic action resulting from their presence.
3. The transport of elements from one pole to the other going on through the interpolar region.

This last action, even when a continuous current is used with an intensity of 300 milliamperes, and applied twenty times or more, with a duration of from ten to fifteen minutes at each application, has no appreciable effect on tumours. No change can be detected to have occurred in the interpolar region. The cases and experiments detailed in my previous paper bear out this statement.

But in the immediate neighbourhood of the poles a destruction of tissue occurs, due to the molecular decomposition and the caustic action of the acids and alkalies resulting therefrom. When a current of 200 milliamperes is kept on for half an hour, this local destruction does not extend for more than an inch round from the point of the electrode. At each application, then, the result produced consists in a local destruction of a small amount of tissue. It has, however, this great disadvantage, shared also by caustics and the knife, that not only is diseased tissue destroyed, but also the healthy as well. Like other caustics and the knife, it leaves untouched the outlying foci of cells, whose presence cannot be detected, and yet are known to be scattered about in the tissues surrounding the primary growth. The existence of these was shown by Dr. Heidenhain, of Berlin, at the recent Surgical Congress. He demonstrated by numerous preparations the presence of minute cancerous foci in the lymph channels after operations by the knife, and especially in the pectoral muscle after removal of the breast. Many so-called cases of recurrence are in reality nothing of the kind, if we may judge from these preparations, but are nothing more nor less than a

continuance of growth in these foci of cells which have not been removed or destroyed. Lying hidden away in the healthy tissues, and giving no indications of their presence in the early stages when they first form, they cannot be detected, and escape the knife of the operator, while the older portion of the growth, which has attained its full development, and may therefore be said to have done its worst, and might almost as well be left alone, is the only part entirely removed. The outlying freshly-formed proliferating cells are most to be feared; it is they that form the new growths and secondary deposits. The older portions, if left alone, are very likely to atrophy.

Electrolysis, used as it has hitherto been, utterly fails, for the same reason that the knife and caustics do, to remove the whole of the disease, sometimes even at a very early stage. It has, however, one advantage over both the knife and ordinary caustics. Isolated glands and nodules can be destroyed without injury to the skin, beyond a minute puncture, when ordinary caustics would necessitate a destruction of the overlying healthy tissue. Again, where a secondary growth is in close proximity to important vessels or nerves, a fine needle can be introduced until the growth is pierced. The current being then turned on, the caustic action can be localised, and handled as required, when an operation by the knife would be out of the question.

The great advantage claimed for my method of treatment by a powerful interrupted voltaic current, and which I propose to call electro-necrosis, is that it can be passed through healthy and diseased tissues alike; and if my theory of the nature of cancer and observations on cases treated in this way be correct, it takes advantage of the difference in resisting power between the two, and kills the latter, while it leaves the former only partially damaged, and able to recover. By this means, all outlying cancer-cells can be reached and destroyed, even when their exact location cannot be made out. In addition to this, the applications can be repeated as often as necessary, should recurrence occur, whereas with treatment by the knife, or with caustics, there is a distinct limit to the number of applications.

Faraday found that electrolysis occurred with every form of electricity, whether voltaic, franklinic, or faradic, when passed through an electrolyte; and there is no doubt that some electrolysis occurs with my method of application, but it is comparatively small. The duration of each flash is at the most two seconds, and the number of flashes required for each portion of the tumour, before reinserting the needles, is not more than from twenty to thirty, so that the actual total of the time during which the current is flowing only amounts to one minute. Further than this, the alternation of the current at each flash causes the acids and alkalies formed at their respective poles to neutralise each other at each succeeding flash. By this means the caustic action round the electrodes is reduced to a minimum, consequently very little healthy tissue is cauterised, while the whole of the cancer-cells in the interpolar region appear to be destroyed. Nor is there any development of heat to speak of. The very fact of the needles used being insulated with gutta serena proves this beyond a doubt.

NOTES ON THE BIRTH OF A DOUBLE FŒTUS RESEMBLING THE SIAMESE TWINS.¹

By ALEXANDER SCOTT, M.D.,
Tollcross, Glasgow.

On the night of November 21st, 1888, Mrs. T., aged 30, was taken in labour in her third pregnancy, having previously borne two perfectly normal children. The membranes had ruptured about eleven o'clock, and at four o'clock next morning she was seen by my assistant. It was a mento-anterior face presentation. For a time the pains were severe and continuous, and the progress, though slow, was quite satisfactory till the outlet was reached. At this stage, notwithstanding the administration of ergot, the pains almost ceased. With some difficulty the occiput was brought down, and the head expelled with the cord firmly wound round the neck, and in which pulsation was quite distinct. Further progress seemed impossible.

I arrived about 7 A.M., and found that the head and shoulders of a child had been born, but that there seemed to be the utmost difficulty in effecting further delivery. There was now no pulsation in the cord. On applying slight traction and leverage in all directions, I discovered that the point of greatest obstruction was

¹ Read before the Glasgow Obstetrical and Gynaecological Society.

towards the pubes; but, owing to the extreme tension of the parts, I could not make out the cause of this obstruction by digital examination. I thereupon passed my hand along the spine of the child, and effected delivery by bringing down its feet, which were in turn, followed by the feet, arms, and head of another foetus. The cause of the obstruction to delivery was then apparent, for the bodies were firmly united in the middle line in front, and the head of the second child had been firmly impinged upon the pubes of the mother.

On examination of this double foetus, it presented the following peculiarities: The bodies were united throughout the whole length and breadth of the sternum down to within an inch from the umbilicus. They appeared to have been born at full time, and were well developed. They faced each other at a distance of about two inches, and were both males. Dissection was not allowed; but they appeared to possess a distinct individuality, and I was unable to make out any vascular connection of a foetal type.

The placenta, which was large and single, was expelled without difficulty. From its centre sprang a single umbilical cord, which bifurcated about half an inch from the bodies, giving a branch to each umbilicus. The father and mother are strong, healthy people, and can adduce no maternal impression or reason for the present occurrence.

The case, I think, is an interesting one—whether we regard it as an illustration of foetal development from a bipartite germ, or as affording another illustration of the wonderful power shown by Nature in overcoming seemingly insurmountable difficulties in parturition, especially when we remember that the head of the second child must have made a complete ellipse before delivery.

In conclusion, I have to express my regret that these children, unlike the Siamese Twins, were not born alive.

PRESENTATION.—The staff and nurses of the Wilton Fever Hospital, Salford, have presented Dr. John Tatham, B.A., the newly appointed medical officer of health to the City of Manchester, with a large photograph of the staff, and a spirit case, a gold bangle for Mrs. Tatham, accompanied by an appropriate address, “as a slight mark of the esteem in which he was held by all connected with the hospital, and the kindness he had always shown to them all.”

TERATOLOGICAL MEMORANDA.

CASE OF AMELUS OR LIMBLESS MONSTER.

I SEE in the JOURNAL for March 9th a case of a limbless monster described by Dr. R. T. Caesar, of Wellington, Salop, with a photograph. There was also a similar case of Dr. Cholmogoroff's, of Moscow, in the JOURNAL for January 19th.

In September, 1887, while in Sussex, I attended, in her confinement, a woman, aged 27, who was delivered of a limbless child. It was a breech-presentation. The trunk and head were those of a healthy female child at full term, and well developed. The only trace of the lower extremities was a small nipple-like projection of skin on either side, as seen in the photograph. There was absolutely no trace of the upper extremities, the side of the chest going straight up to the ends of the clavicle and acromion process, immediately below which was a slight cicatricial-like puckering of the skin on each side. There were no glenoid cavities or acetabula. This child lived a month. The mother had had four children before this, and has had one since (sixteen months after), all healthy, and with no deformity.

The only way she could account for anything being wrong this time was that, on going in next door where a fishman lived, she had “seen fish that she never thought existed.” These fish seem to have troubled her a good deal in early pregnancy. Her husband told me “she could not get them out of her mind.”

The photograph I enclose was taken a few days before death when the body was considerably emaciated.

St. Clears, South Wales.

HARRY GRAVELY, M.R.C.S.

SURGICAL MEMORANDA.

A CASE OF NEPHRO-LITHOTOMY.

Mrs. M. W., aged 41, was first seen on December 17th, 1888. She was then suffering severe pain in the left side, just below the last rib and shooting down to the vulva. There was occasional vomiting. The temperature was 101.6°, and she was perspiring freely. Micturition was very frequent, scanty, and attended by so much straining that she found most relief by supporting herself by the bedpost and bearing down violently. I examined her carefully, but could find no physical sign of disease, beyond a very tender spot on deep pressure below the twelfth left rib. There was no swelling or tenderness of the abdomen. She had never noticed any unnatural appearance in the urine. The urine was acid, specific gravity 1020, and contained a trace of albumen. She had for the last four years suffered from pain in the left loin, and within the last four weeks had had three similar attacks.

February 5th, 1889. She had now had twelve attacks since my first visit. The day before an attack the urine was passed in greater quantity, was paler, and of lower specific gravity. In the first few hours after the attack, the urine was loaded with pus,