lost 4 lb. (the abdomen 3 in.). She was kept to the same diet for a month, when her improvement allowed a little more latitude in her diet, and in two months she could take almost anything. The general result was that she lost 31 lb. in weight, 1 in. in measurement round the chest, 1 in. round the waist, and 6 in. round the abdomen. Nearly all her discomforts have disappeared, and she can now walk from six to eight miles with little fatigue. The other cases gave as satisfactory results. The method of treatment will compare favourably, I think, with those of Ebstein, Oertel, or any other of the many Continental methods.

Westhoughton, Bolton.

ON THE EXTRAVASATION OF BLOOD IN TUBAL PREGNANCY.

By JAMES OLIVER, M.D., F.R.S. EDIN.,
PHYSICIAN TO THE HOSPITAL FOR WOMEN, SOHO-SQUARE, LONDON.

DURING the evolution of a natural pregnancy there results not only an augmentation in the size of the bloodvessels of the uterus, but a hypertrophy of the tissues of this organ generally. When, however, the fecundated ovum develops in the Fallopian tube it seldom happens that any vigorous local growth is excited by its presence, although the bloodvessels in the involved tube become greatly enlarged. Apart from any intrinsic disease the integrity of a bloodvessel depends greatly upon the manner in which it is supported by the surrounding tissues. When, therefore, the pressure exerted by the Fallopian tube against a growing ovum is insufficient to support the correlatively enlarged bloodvessels they rapidly become thinned, and rupture with extravasation of blood takes place on the slightest provocation. When the developing ovum is located in the cavity of the uterus we are accustomed to believe that accidental hæmorrhage from the maternal vessels never takes place until after the fourth week of pregnancy. Whether this belief be correct or not it is evident that in tubal pregnancy accidental hæmorrhage from the vessels in the mucous lining of the Fallopian tube may occur as early as the seventh or tenth day after impregnation. In ectopic pregnancy, therefore, blood may be extravasated from the maternal vessels before the chorionic villi become vascular—a phenomenon which happens during the third week of pregnancy when the chorion becomes incorporated with the allantois. The paroxysmal attacks of severe pain which are sometimes experienced in cases of tubal pregnancy are due to these effusions of blood, and, although the primary hæmorrhage occurs always whilst the ovum is living, subsequent hæmorrhages may nevertheless happen after this body has died. Rupture of the Fallopian tube itself, which has gradually become more and more thinned, may be induced by the first or any succeeding extravasation of blood; and as this accident may occur as early as the fourth week of pregnancy before the chorionic villi have begun to participate in the formation of a true placenta—for the ovum is everywhere placental at this period—the breach in the continuity of the tube is not in all cases at least attributable to a thinning at the placental site, or to a penetration of the tube by the villous processes. A portion of the external hæmorrhagic discharge—vaginal—which is observed in the early days of some tubal pregnancies comes directly from the ruptured vessels in the tube.

Gordon-square, W.C.

BILATERAL VARIATION OF TEMPERATURE.

By BINGLEY G. PULLIN, M.R.C.S. ENG., L.R.C.P. LOND.,
L.S.A.

A CASE of typhoid fever, contracted in the South of Europe, was lately under my care during its course, which ended fatally from peritoneal abscess. The subject of temperature revealed itself in an altogether new light. Accidentally, I found that the temperatures on the opposite sides of the mouth varied at the same time and with the same clinical thermometer. I became interested to ascertain whether or not this difference existed from day to day, and requested the trained nurse to take the temperature on both sides of the mouth (between the cheek and teeth) every four hours. Strange to say, on nearly every occasion the highest

reading was on the left side (the abscess ultimately showed itself on the left side). During the time these records were taken exactly 100 temperatures were notified; on twelve occasions only did the temperature of the right side exceed that of the left, and only three times were the temperatures equal. It would be impossible to notify in an article each record, so I merely take the averages of the day's temperature for the last fifteen days of the illness.

First	day	.....	0.9°	higher on the left side.
Second	"	.....	0.6	" " " " "
Third	"	.....	1.0	" " " " "
Fourth	"	.....	0.9	" " " " "
Fifth	"	.....	0.5	" " " " "
Sixth	"	.....	0.9	" " " " "
Seventh	"	.....	0.9	" " " " "
Eighth	"	.....	0.7	" " " " "
Ninth	"	.....	0.6	" " " " "
Tenth	"	.....	0.4	" " " " right "
Eleventh	"	.....	0.5	" " " " left "
Twelfth	"	.....	1.2	" " " " "
Thirteenth	"	.....	1.2	" " " " "
Fourteenth	"	.....	1.0	" " " " "
Fifteenth	"	.....	0.5	" " " " "

The greatest difference recorded was 3.2° in favour of the left side; many times a difference of 2.0° was noted. Now, looking at this case, supposing that each time the temperature was taken it had been taken on the right side, what would have been seen? Nothing certainly alarming in the temperature of the case, as the highest record on that side was 102°—very rarely did it exceed 100°; whereas on the left side it rarely fell below 102°, and did on one occasion reach 104.8°. If we are to be guided by temperature charts, is it not of the highest importance that both sides of the body should be tested? It would certainly, to my mind, aid one very much in deciding on which side in most cases we have to meet disease, for it is evident that under the influence of some irritating cause the vascular system of the opposite side of the body is contracted, consequently there is less blood and the temperature is lower; *vice versa* on the offending side. Many cases of a minor degree have since this been noticed by me.

Sidmouth, Devon.

NOTES OF A CASE OF THREATENED FATAL RESULT FROM CHLOROFORM ANÆSTHESIA.

By J. C. MAXWELL, M.A., M.B., C.M.,
SENIOR HOUSE SURGEON, HALIFAX INFIRMARY.

THE patient, a strong healthy man aged thirty-nine years, was being anæsthetised on Jan. 3rd previously to operation for a small omental hernia in the neighbourhood of the umbilicus; chloroform was the anæsthetic selected, and was administered on a folded towel, the patient's head being kept low and the jaw pulled well forwards. The patient took the anæsthetic well, did not struggle, breathed regularly and quietly, and had been receiving the anæsthetic for about seven minutes without being fully anæsthetised; the abdominal muscles contracted when touched, and there was a well-marked conjunctival reflex in both eyes. The pupils were about 2.5 to 3 millimetres in diameter and reacted to light. The right carotid pulse was of good volume. Administration was continued, but no fresh chloroform was poured on the towel. In less than thirty seconds after the above observations the pupils suddenly dilated and became immobile, and the conjunctival reflex disappeared. The towel was removed, but after two or three breaths respiration entirely stopped and the carotid pulse became much feebler. The head was pulled over the end of the table, the tongue pulled out, and artificial respiration (Sylvester's method) at once resorted to. During its performance two hypodermic injections, each $\frac{1}{160}$ grain of sulphate of strychnia, were given and a current of oxygen gas was played about the nostrils. At the end of twenty minutes the patient vomited and showed signs of recovery, his pulse became stronger, and respiration took place normally. He was still much collapsed and the operation was abandoned. About two and a half drachms of chloroform had been used.

The case seemed to be one of paralysis of the respiratory centre in the medulla, coming on practically coincidently with the abolition of the abdominal and corneal reflexes. A week later the patient was again anæsthetised, this time with ether from a Clover's inhaler. The patient took the anæsthetic quietly and did not struggle or hold his breath till five minutes after the commencement of the administration. He

then passed into a condition of complete muscular rigidity, the chest-walls being rigid, the teeth clenched, and the arms and legs stiff. The pupils were dilated. The pulse-beat was much feebler. The mask was removed and in a little the spasm relaxed and the patient began to breathe. On re-application of the mask he passed off, without causing further trouble, into normal anaesthesia maintained for thirty-five minutes. It may be of interest to mention that he had retention of urine for three days after the operation.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prooemium.

WEST LONDON HOSPITAL.

A CASE OF TRAUMATIC TETANUS TREATED BY ANTITOXIC SERUM; RECOVERY.

(Under the care of Dr. ALDREN TURNER and Mr. G. LENTHAL CHEATLE.)

THE cases of acute traumatic tetanus treated by the antitoxic serum are sufficiently rare to warrant the publication of this one, which was under observation for a considerable time in the wards of the West London Hospital. It is an illustration of the effect of a comparatively new remedy, which, according to Dr. Turner, was of undoubted value in lessening the frequency of the general spasms. Cases of tetanus have recovered under nearly every form of treatment, and there are many remedies, but no specific cure. Chloral hydrate has probably given the best results, but is uncertain. It is important that the antitoxin should have a fair trial, but few surgeons would be inclined to practise preventive inoculation with it. Tetanus is now a very rare disease, even in our large hospitals, and the cases are usually admitted from without, whilst the thorough antiseptic cleansing of contused and lacerated wounds when they present themselves for treatment is most effectual in preventing its development. For the notes of the case we are indebted to Mr. E. Bromet, house surgeon.

The patient, a boy aged six years, was brought to the hospital on Aug. 1st, 1895, his mother making the statement that he was suffering from stiffness of the legs and neck. On further inquiry it was found that about a fortnight previously he had fallen on a piece of barbed wire and sustained a wound on the ball of the left thumb. Rather more than one week after this injury the patient is stated to have had a fit, in which, according to his mother's account, he became stiff all over and bit his tongue; and after the fit he was unable to open his mouth properly. At the time that the stiffness commenced the wound, which had not been treated surgically, showed an unhealthy appearance. The patient had never previously to this attack had anything of the nature of a fit. The mother was not absolutely sure of the dates, but as far as cross-examination could elicit the length of time between the injury and the onset of tetanic symptoms was eight days. On admission there was found a small suppurating wound on the ball of the left thumb. The limbs were stiff and painful when moved. There was also slight opisthotonos. The mouth could not be opened further than to admit the tip of the index-finger. The fingers were rigid and contracted. The child was quite sensible and complained of the stiff feeling of the limbs and soreness about the lower jaw. The slightest movement or attempt to administer food set up a typical tetanic convulsion. The jaws were tightly closed, the face muscles were rigid, with a well-marked risus sardonicus, extreme opisthotonos, clenching of the hands, rigidity of the muscles of the abdomen, expansion of the chest, and a peculiar sobbing noise during inspiration. About 6 P.M. on the day of admission the house surgeon, acting on the advice of Dr. Turner, freely excised the wound under chloroform. The piece of tissue, which consisted of one or two small granulations, some cicatricial tissue,

and healthy skin, was submitted to a careful bacteriological examination by Dr. W. Bulloch of the British Institute of Preventive Medicine, but no tetanus bacilli were detected after staining by the usual methods. On recovery from the effects of the anaesthetic, the spasms again set in with renewed vigour and frequency, so as to necessitate the constant administration of chloroform. The slightest reduction of the anaesthesia was immediately followed by recurrence of the tetanic spasms already described. The chloroform anaesthesia was maintained from 8 P.M. on the day of admission (Aug. 1st) until midday on Aug. 2nd. During the afternoon of this day the spasms, which still remained very frequent, appeared to be less severe. At 5.30 P.M. a supply of antitoxic serum arrived from the British Institute of Preventive Medicine. One gramme of this was injected, under strict antiseptic precautions, subcutaneously into the abdominal wall.¹ For the purposes of injection the serum, which had been sent in the dry crystallised form, was dissolved in distilled water previously boiled. During the six hours which elapsed between the first and second injections only one convulsion occurred, and during this period the boy sat up in bed and asked for milk. Previously he had been fed by enemata, and the urine was drawn off by the catheter. At 11.30 P.M. on Aug. 2nd the second injection of one gramme was given. During Aug. 3rd there was only one slight spasm recorded. A good deal of muscular rigidity still remained, more especially of the abdomen. During this day the general condition had improved, he took milk freely by the mouth, and passed urine and faeces naturally. At night 0.5 gramme was injected. From Aug. 4th to 7th no further spasms occurred, although rigidity remained. Under the belief that this abdominal rigidity was of a tetanic nature another gramme was injected on Aug. 7th. The total amount injected was therefore 3.5 grammes (equivalent to 35 c.c. fluid form). On Aug. 11th several localised abscesses were detected in the abdominal wall at the seat of the injections. An erythematous rash in blotches was observed for the first time on the abdomen and face. On Aug. 13th the rash was more profuse and the abdomen tender and rigid. The abscesses were opened and dressed in the usual way. On Aug. 18th the abdominal rigidity had almost entirely disappeared. The general health was excellent. The patient was allowed out of bed. On Aug. 24th an abscess which had formed in the left lumbar region at the seat of the last injection was opened. On Sept. 4th the patient left the hospital in good health. On Nov. 13th the mother stated that slight "jerking attacks" had been at times observed after leaving the hospital, but they were infrequent and mild. The boy was in the best of health. No attacks had been observed for the past ten days.

Remarks by Dr. ALDREN TURNER.—The points to which attention is especially called are, firstly, the nature of the case, and, secondly, the method of treatment. It is difficult to say in how far recovery was entirely due to the treatment by the antitoxic serum; but the case is of value for statistical purposes, and for the same reason it is hoped that the unsuccessful as well as the successful cases may be recorded. From the point of view of incubation the case may be regarded as acute, this period being of eight days' duration. But the more or less gradual onset of the symptoms places it amongst the milder forms, which, according to the statistical tables drawn up by Kanthack,² as a rule present a favourable prognosis. Setting aside the question whether the case would have recovered without the aid of the antitoxic serum, I submit that no drug, or other method of treatment at present at our disposal, could have brought about the extraordinary arrest of the tetanic symptoms mentioned in the report. For the twenty hours preceding the first injection the spasms were so severe and so frequent that it was necessary to maintain a chloroform anaesthesia. During the six hours succeeding the first injection one spasm occurred, and during the twenty-four hours following the second only one slight spasm was recorded, since which there has been no recurrence with the exception of the slight "jerking attacks," to which further reference is made later. Not only was the arrest of the spasms remarkable, but the improved state of the general health was most noteworthy. As regards the method of treatment, I desire to point out that the serum was obtained in its dried form, being sent direct to the

¹ According to Dr. Hewlett one gramme of the dried serum is equivalent to ten c.c. of the fluid form.

² Medical Chronicle, 1895, p. 92 et seq.