smooth, and the cavity contained no pus; the surrounding lung tissue being almost black and solid. A bronchus of the second dimension communicated by two openings with the cavity. The drainage-tube had passed into the cavity at a spot rather below its centre. The right lung was engorged and oedematous, and on incising its base pus could be pressed out, showing the passage of this fluid from one lung to the other. Heart normal.

Remarks.—This case, although unfortunately fatal, is published not only for its clinical interest, but as a contribution to the literature of a mode of practice unusual in this country, and also in the hope that it may serve as some guide in the treatment of similar cases in the future. In the first place, it may be observed, whilst no untoward symptom occurred from the operative interference, the man experienced marked and early relief from the cleansing and disinfection of the putrid lung cavity. It is true, cough and dyspnoea were both greatly increased on each occasion during the time the washing-out was being done, but the distress was not continued, and a comparatively long period of quiet followed. Again, the risks of sepsis were immediately greatly diminished, and the patient rendered less offensive to himself and others. It will be noted in connexion with this point that at the post-mortem examination pus was found in the right lung, having been carried there mechanically, and it seems reasonable to me to conclude that the pathological condition was, at least in part, due to its presence. The only healthy portion of lung was the left upper lobe, and the man's death appeared immediately due to the implication of the right lung in the pneumonic process, supervening as it did upon pre-existent grave constitutional disturbance. Cases of abscess and gangrene of lung are at all times of the most serious character, but in spite of the fatal issue in the present instance, the bias of my mind, as the result of the method adopted here, is in favour of further investigation and treatment upon similar lines.

Nottingham.

THE MICROBE OF RABIES.

PRELIMINARY NOTICE.

By G. F. DOWDESWELL, M.A., F.L.S., &c.

IN view of the great interest now taken in this subject in consequence of the brilliant investigations of Pasteur, I think it desirable to take an early opportunity of stating that I have found the microbe which appears clearly to constitute the virus of this disease. It is a micrococcus, not very minute, and of the usual form. It stains, however, with some difficulty; and this accounts for its having hitherto escaped observation. In the cases of dogs which I have as yet examined, its principal seat is evidently the central canal of the spinal cord and medulla oblongata; thence it pervades the other tissues of the central nervous system, occurring (sometimes in vast masses) around the walls of the bloodvessels, and in some cases within the vessels amongst the red blood-corpuscles. In the cortex of the hemispheres I have found it, but in very small numbers, and, so far, only in the perivascular and peri-cellular lymph spaces. In the cerebellum I have not found it at all, neither have I as yet succeeded in finding it in the salivary glands. I shall shortly publish the methods by which it may be stained with certainty. I must, however, state that it does not stain by hæmatoxylin, either with or without a mordant, as asserted by Fol.¹ I have repeated his methods carefully. Neither does it occur within the nerve fibres, as he states; and, lastly, it is fully three times the dimensions which he gives. I may add that it does not occur in the same situation, treated by the same methods, in normal animals. In the one case of a rabid dog, which I had examined to control my previous observations, the tissues were placed in alcohol so shortly after death as to preclude the possibility of the occurrence of septic organisms. In addition to which, all saprophytes, as far as yet observed, stain very readily with the usual aniline dyes, which this microbe does not. I must point out, in justice to the genius of Pasteur, that these observations on the occurrence of the microbe go far to confirm his statement of the seat of the virus; it may further afford a means of diagnosis in any doubtful case.

Preparations of the microbe were shown at the meeting of the Royal Microscopical Society on the 9th inst.

The Brown Institution.

TRAUMATIC TETANUS, TREATED WITH CHLORAL HYDRATE IN CONJUNCTION WITH URETHAN; RECOVERY.

By WILLIAM THOMAS JACKMAN, M.R.C.S., &c.

THE following brief notes of a case of tetanus which recovered under the influence of the new hypnotic, urethan, in conjunction with chloral hydrate, are of interest as suggesting a new use for this valuable drug.

J. C—, a lad aged fifteen years, came under my care on March 15th, 1886. The patient presented well-marked symptoms of tetanus, which were evidently the result of an injured finger on his right hand. This had been crushed by cogged wheels five weeks previously, and had healed up slowly under simple local treatment. The lockjaw was complete, and the opisthotonus well marked; severe paroxysms of pain were complained of, which were greatly exaggerated at night. The patient had noticed his neck and jaw muscles gradually becoming stiff for the past few days, but attributed this to a chill. Chloral hydrate in 20-grain doses every three hours was ordered. This relieved the paroxysms of pain slightly during the day, but the lockjaw, opisthotonus, and rigidity of the muscles of the legs remained the same, and the pains were just as severe and frequent during the night. Fluid nourishment was administered and the chloral treatment continued until March 25th, when, as no abatement of the symptoms was apparent, after consultation with my partner Mr. T. Simpson, it was decided to discontinue the chloral during the night, and in its place give the patient four grains of urethan every two hours, from 6 P.M. to 6 A.M. The first night of this treatment showed a marked decrease in the severity of the symptoms, and the patient made gradual and uninterrupted progress until April 20th, when his recovery was established. The failure of the chloral hydrate to relieve the severe symptoms during the nights, and the well-marked improvement under the influence of the urethan, seem to point to the latter being likely to prove a very valuable drug in the treatment of tetanus, either prescribed alone or as above in conjunction with chloral hydrate.

Coggeshall.

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. Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF EXPLORATION OF THE KIDNEY FOR SUSPECTED CALCULUS.

(Under the care of Mr. WARRINGTON HAWARD.)

THE question of operation in cases of suspected renal calculus is one which not unfrequently presents itself to surgeons connected with large hospitals. If the patient, in good health otherwise, has symptoms of the presence of a calculus, which symptoms from their severity prevent him from following his employment, and medical treatment has done no more than to produce temporary alleviation, most surgeons would follow the course adopted in the following case, and explore the kidney. This case is an example of the difficulty sometimes met with in discovering the stone, even when present, its small size preventing its being felt by the finger or struck by the exploring-needle. We have seen more than one instance of this difficulty in finding the stone, and in one case it was only found after the removal of the kidney, this severe measure being justified by the severity of the symptoms occasioned by the presence of this small calculus. For the following account we are indebted to Mr. R. Margerison, late surgical registrar.

¹ Comptes Rendus, Dec. 14th, 1885, vol. ci., p. 1276.

John S—, aged twenty-four, a healthy-looking man, was admitted on March 11th, 1885, after having been under observation for some time as an out-patient. Three years previously he began to suffer from occasional attacks of pain in the left lumbar region, accompanied by vomiting, retraction of the testicle, and pain shooting down the inner side of the left thigh. The urine was occasionally turbid, and often contained a deposit, which from the description was probably uric acid. Lately these attacks had grown more frequent, occurring at intervals of about a month, and often lasting for six hours. Active exercise had no influence on the pain, and did not cause any apparent difference in the character of the urine. A year before admission his medical man outside had detected blood in the urine.

When admitted, pressure in the left loin caused no pain, and palpation discovered no abnormality there. No pus or blood existed in the urine.

Three weeks after admission he had a severe attack of his old symptoms, vomiting, retraction of the testicle, &c.—in fact, well-marked symptoms of renal calculus; wanting, however, in the presence of hæmaturia. The urine became highly lithatic. Ten days later a similar attack recurred. It was then thought proper to expose and explore the kidney. This was accordingly done by means of a transverse lumbar incision on April 16th. The kidney and its pelvis were carefully examined by the finger, and a long needle was thrust into the kidney substance in as many places as was thought proper. No stone was found, and much natural disappointment was felt. The man made a good recovery and left the hospital on June 3rd. He has since been to report himself on several occasions. In October he came to say that in September, after one of his old attacks of pain, while at stool he felt a peculiar sensation in the urethra, and heard a distinct click as of a stone striking the earthenware vessel. He has been quite well ever since.

MANCHESTER ROYAL INFIRMARY.

RUPTURED FEMORAL ANEURYSM IN HUNTER'S CANAL;
LIGATURE OF THE FEMORAL ARTERY; CURE; SUB-
SEQUENT DEATH FROM HEART DISEASE;
NECROPSY; REMARKS.

(Under the care of Mr. WRIGHT.)

THE notes of the following case have been furnished by Dr. W. Thorburn and Mr. G. Barlow.

William S—, aged sixty-three, a labourer, formerly a soldier, was admitted on January 5th, 1886. There was a history of "brain fever" and of "bowel and liver complaint" while serving in India more than twenty years ago, and of "rheumatism in the hip," lasting a few days, two or three years before admission. There was no history of syphilis recorded. The aneurysm was first noticed about six months before admission, but gave no pain or trouble at first; it, however, increased gradually in size and became somewhat painful later on, though it never prevented him from walking about. On Jan. 4th it had reached somewhat the size of a goose's egg, and in the evening of that day he felt something give way with a crack; he fell down, and at once noticed that the swelling was much larger and very painful. He was admitted the following evening.

On admission the man complained of severe pain in the right knee, running up the inner side of the thigh, where there was a large, flat, obviously pulsating swelling, occupying nearly the lower half of the thigh. The aneurysm was firm, except at about its centre, where there was evidently fluid blood. Pulsation was expansile. There was a distinct thrill and a rasping bruit. There was no tenderness. The veins over it were distended. Pressure on the femoral stopped the pulsation, but scarcely lessened the size of the swelling. The calf of the leg and the foot were somewhat swollen, and there was no pulsation to be felt below the aneurysm. Urine: specific gravity 1020, neutral, free from albumen or sugar. The man's arteries everywhere were obviously atheromatous. He had well-marked arcus senilis, early cataract in both eyes, and chronic bronchitis, with profuse expectoration. Pulse 68 and normal. On the morning of the 6th, when Mr. Wright first saw the patient, the aneurysm was said to be considerably larger than on the previous evening. The foot was not cold. Immediate operation was decided upon. The femoral (superficial) artery was ligatured in the usual way, rather above the apex of Scarpa's triangle. As there was little subcutaneous

fat, the vessel was very easily secured with a single chromic gut ligature. The coats were not markedly diseased at this spot. The ligature was tied tightly and the wound closed, no drainage-tube being used. Full antiseptic (Listerian) details were carried out, iodoform and wood-wool dressings being applied. The limb was entirely enveloped in soft wool, and surrounded by hot bottles. Though it was not obvious externally, it was found that blood extravasated from the aneurysm had travelled up the sheath of the sartorius as far as the seat of ligature. Pulsation ceased immediately upon tightening the ligature, but the tumour otherwise was but little altered.

The after-history of the case is absolutely uneventful. There was a little dull aching pain at first, but the foot was never cold, and gangrene never even threatened. The highest temperature reached was 99.4°. The cough improved with a stimulating mixture. Sensation in the foot was never impaired. The size of the swelling slowly but steadily diminished, and the wound healed up at once. On Jan. 28th it was noticed that pulsation could be felt in the femoral to within about two inches of the point of the ligature; below this the vessel was felt firm, cord-like, and evidently plugged. On Feb. 9th there was no pulsation in the tibial vessels; the circumference of the thigh was two inches less than it had been four days after the operation, but there was evidently still some fluid blood in the centre of the swelling. The patient was sent to the Convalescent Hospital on Feb. 13th. He remained well, and the swelling had almost disappeared by the beginning of April, at which time he was allowed to get up, and was practically well as far as the limb was concerned, when he was suddenly seized one afternoon with pain in the chest, and died very shortly after.

Necropsy.—An aneurysm of the ascending part of the arch of the aorta of the size of an orange was found; this had not ruptured, but the heart muscle was very flabby and the vessels atheromatous. The femoral vessels and the aneurysm were removed, and an examination showed that the external iliac, common femoral, and profunda arteries were much dilated and atheromatous. About half an inch below the profunda the upper tapering end of an adherent clot was found. Just above its highest point two small uneven branches were given off. Below this the artery was entirely occluded by clot down to the aneurysm. The ligature had disappeared, but its site, about an inch and a half below the profunda, was marked by a dense white line running round the artery and in the clot; the line was about twice the breadth of the ligature. Below the aneurysm the artery was filled with coagulum as far as the popliteal, where it had been divided; this clot was less firmly adherent than that above the aneurysm, and was perforated at the lower end by two minute orifices. The aneurysm was about the size of a small hen's egg, and was filled with firm laminated clot, except at its most superficial part, where there was a cavity containing about a drachm of fluid blood; this was quite shut off from the artery by a thick wall of coagulum. The walls of the aneurysm were thick, white, firm, and well defined; the sac projected from the interior face of the artery, but no distinct orifice could be made out, nor any sign as to where the sac had given way. The muscles around the sac and also the femoral vein were firmly matted to the sac, but elsewhere there was only a faint discolouration and slight toughening of the cellular tissue to mark the previous extravasation. The course of the collateral circulation could not, unfortunately, be made out, as there was no opportunity for injection or dissection. The aneurysm lay in the centre of Hunter's canal.

Remarks by Mr. WRIGHT.—Cases of ruptured femoral aneurysm in Hunter's canal appear to be very rare, and for this and other reasons I have thought this case worth recording. It illustrates well most of the points discussed in Mr. Poland's paper in Guy's Hospital Reports, series 3, vol. vi., which gives probably the best account of ruptured external aneurysm, and to this I must refer. The sensation of bursting was present in only three of Mr. Poland's forty-two cases; here it was distinct. There was no loss of sensation or fall of temperature of the limb below in any case, though this is nearly universal; and yet in this instance the escape of blood was large and fairly rapid; in other ways the case followed pretty much the general rules laid down by Mr. Poland. As to the treatment of the case, the man was in many respects a most unfavourable subject for operation; he was, however, thin, and of placid disposition.