

no pain and his urine had remained quite clear. The last examination of the urine gave—sp. gr. 1020, acid, with no chemical reaction for albumen, pus, or blood. Microscopically it showed oxalates and a very few pus cells. On Dec. 15th, 1893, Mr. Louis E. L. Beer wrote: "The patient has been under my observation since he left the hospital after the operation. His general health has been excellent; in fact, I have never known him to be so well. Occasionally his friends have been alarmed by deposits in his urine; these, however, have consisted of urates more rarely mixed with phosphates, but never with blood or pus. I have never found any albumen." On leaving the hospital his parents were told to give him an alkali water to drink if the urine became very acid or loaded with pink deposit, and his father says he has done this, the mineral water being taken twice daily at intervals.

*Remarks by Mr. MORRIS.*—This was the youngest patient upon whom I had at that time operated for hydronephrosis and the youngest I have ever nephrectomised; but I have since performed double lumbar nephrotomy for congenital hydronephrosis, operating at the twenty-second hour after birth. The child is now, several weeks after the operation, still living and passing all its urine through the lumbar fistulæ. It is impossible to state what was the cause of the hydronephrosis in this boy: whether it was a contraction of the ureter after the passage of a stone, or the lodgment of a calculus in the tube. The occasional passage of blood might lead one to suppose that the ureter must have been clear immediately before and after the operation; but experience has taught me that this is not so. A calculus may be fixed in the ureter and give rise to much, but not to complete, obstruction, and thus pus and blood, even in large quantities, may reach the bladder from the kidney by passing on their way the impacted stone.

CASE 2.—A man twenty-two years of age was admitted into the Middlesex Hospital on May 14th, 1893. He had fallen against the wheel of a traction engine and his left knee was injured. The parts around the knee-joint were very swollen and painful, and there was considerable effusion into the joint. On the inner side of the patella there was an oval wound two inches by one inch and one-eighth, and the skin was destroyed over this area. Above the patella the skin was destroyed for two inches. Over the region of the tubercle of the tibia an area three inches by two inches was devoid of skin, and the skin bordering the wound was undermined for about three inches. The wounds were most thoroughly irrigated with perchloride of mercury (1 in 2000). The injured parts were covered with a cold mercury compress and the leg put up on a back splint with foot-piece. The wounds looking dirty and the inguinal glands being inflamed, the above treatment was changed next day to carrot poultices. A day or two later, the parts around the knee-joint being swollen and inflamed, an incision was made over the outer part of the joint and a large quantity of fetid pus and sloughing cellular tissue escaped. Carbolic fomentations were then applied, and by May 29th the wounds were nearly healed, except superficially. About this time the patient began to complain of his jaw being stiff, and the glands under the rami became swollen; and on June 1st he could not open his mouth at all well.

June 3rd.—The patient has pain about the jaw, he can only open his mouth half an inch, and he has had clonic spasms in his injured leg occasionally yesterday and to-day. The temporal and masseter muscles are hard. He was given ten grains of chloral hydrate every four hours, and opium fomentations were applied to the knee.

7th.—For the last day or so he has appeared to be a little better, but to-day he is much worse again. His abdominal muscles are hard, and his back is very painful. The patient now suffers from violent attacks of spasm, causing him to shriek out, and during these attacks all the above conditions are much increased, the muscles becoming as hard as boards. The dose of chloral hydrate was doubled.

9th.—The spasms are more frequent, the pain greater, and the jaws stiffer. The patient is very ill. Three grains of carbolic acid were injected per rectum three times a day in addition to the chloral hydrate by the mouth every four hours.

13th.—The patient can open his mouth better, but on attempting to sit up he is always seized with violent abdominal spasms, causing opisthotonos. He was given one-sixth of a grain of extract of physostigma every six hours, and ten grains of chloral hydrate every four hours.

15th.—The patient is taking nourishment well, but does not

get much sleep, although he has injections of morphia. He perspires profusely. The spasms of his abdominal muscles are much worse; they appear on the least movement; the pain, which causes him to keep shrieking out, shoots down the legs. The pain in the back is better and he can open his mouth much wider.

17th.—The patient can open his mouth wider to-day. The pains and spasms are much less severe and less frequent.

20th.—He is very much better in every way. There are no pains or spasms, and the jaws were open all day.

23rd.—He is to leave the hospital, being convalescent.

*Remarks by Mr. MORRIS.*—The wound in this case was one that was very likely to be followed by tetanus. The carbolic acid was given per rectum mixed with mucilage with the view of carbolicising his blood, thus rendering his tissues obnoxious to the bacilli; but after four days this was discontinued, and the extract of physostigma was given every six hours. I have had in another case of subacute tetanus within the last year or two the satisfaction of seeing the patient recover whilst taking the physostigma. It is to be noticed that the patient was taking ten grains of chloral hydrate every four hours as well as the extract of physostigma, and, in addition, had a subcutaneous injection of morphia at night.

## LEICESTER INFIRMARY.

### TRAUMATIC TETANUS TREATED BY INJECTIONS OF TETANUS ANTITOXINA; RECOVERY.

(Under the care of Mr. J. ST. THOMAS CLARKE.)

TETANUS is now recognised to be an infectious disease resulting from the entrance into the body of a certain poison produced by the tetanus bacillus. The investigations of Nicolaier had established this fact to a great extent when his statements were fully confirmed by Kitasato, who succeeded in producing the microbe from tetanic pus, and produced tetanus in animals by inoculations of the cultures. A most important advance was made when Tizzoni and Cattani succeeded in producing immunity against tetanus even in animals susceptible in a high degree, and showed that the blood serum exerted an antitoxic action and could produce immunity against and cure of the disease. They succeeded also in obtaining this antitoxine in a solid state by the addition of alcohol to the serum and drying the precipitate *in vacuo*. It was not long before the effect of this remedy was tried in a case of tetanus occurring in a human being, and Gagliardi of Molinella, and subsequently Schwartz of Padua, Pacini of Tuscany, and Nicholadoni of Innsbruck, reported cases of cure by its means. Since then also Casali, Barth, Morgagni, Gattai, Lesi, and Roux have reported the successful treatment of cases. Roux's communication is probably the most important, for he gives seven cases in which the treatment was tried with only two cures. So far as we are aware the following case is the first treated successfully in this country by this method, and we congratulate those in charge of it on the result. The case was not one of the worst met with in surgical practice, and until we have more experience of the working of the remedy it is not advisable to place too much confidence in it; Roux's failure in five out of seven cases emphasises this fact. There are numerous cases of recovery from tetanus reported, and ascribed to drugs. We hope this new remedy may prove successful; it promises well. It is evidently not infallible, yet certainly deserves a trial, and a careful record of cases should be made whether the result appears satisfactory or not. For the notes of this case we are indebted to Mr. G. Winfield-Roll, senior house surgeon.

A boy fourteen years of age sustained a crush of the top of the thumb, which set up suppurative of the nail matrix and beneath the thumb-nail. A week later he began to suffer from stiffness of the neck-muscles and spasms. He was sent by Mr. Willan of Melton Mowbray to the infirmary, being admitted on Oct. 23rd. He then appeared to be a well-nourished, robust-looking lad, lying supine with his head thrown back. The face was distorted with the characteristic risus sardonius of tetanus. At intervals of about half an hour he was seized with a spasm in which the back was arched, the head more extended, and the teeth were tightly clenched, the face and lips becoming intensely livid from suspension of respiration. In the

intervals between the spasms he was unable to separate the teeth more than half an inch, but he could swallow fluids without great difficulty. He was ordered bromide of potassium and chloral hydrate mixture—fifteen grains of each every four hours. This was continued during two days without benefit, the spasms becoming more frequent and more severe. Owing to the great difficulty in swallowing it was then stopped. On Oct. 27th injections of antitoxin were commenced. This was very kindly forwarded to Leicester by Dr. Roux of the Institut Pasteur, Paris. The total amount used was fifteen grammes of dried serum, dissolved in ten times its weight of distilled sterilised water; 100 fluid grammes were injected in the first twenty-four hours, fifty at 6 P.M. and fifty at 11 A.M. On each occasion chloroform was administered, the fluid being injected subcutaneously with a sterilised syringe in very many punctures in the thighs, buttocks, arms and chest. In the second twenty-four hours the remaining fifty grammes were injected in two parts at 8 30 P.M. and 5.30 P.M. The punctures determined a slight and transient redness of the skin at the points of puncture. No pain was complained of on recovering from the effects of the anæsthetic. On the second day of injection the convulsions were noticeably diminished in severity, the lividity and the clenching of the teeth being less marked, as well as the arching of the back. From this time there was a slow and gradual abatement of the severity of the spasms, though they did not entirely cease for another week; their frequency was also very much less. On Oct. 30th he again took fifteen grains of bromide of potassium every four hours and continued to do so during one week. The improvement was undoubtedly simultaneous with the injections, and the severity of the spasms was less from the day they were commenced. It is only reasonable to ascribe the benefit to the antitoxin, as the drugs appeared to have little or no effect. As regards the local treatment, on the day after admission the thumb-nail was removed under chloroform and the suppurating matrix freely incised and dressed with fomentations of a 1 in 20 carbolic acid solution. It is remarkable how little constitutional disturbance was caused by the injections of such large quantities of serum, and the absence of constitutional disturbance shows the thorough aseptis of the preparation and preservation of the serum. The only elevation of temperature was on the second day, when it reached 100° F.

### SOUTH DEVON AND EAST CORNWALL HOSPITAL.

A CASE OF CEREBRAL HÆMORRHAGE IN A CHILD SEVEN YEARS OF AGE, FOLLOWING MITRAL DISEASE.

(Under the care of Dr. Fox.)

CEREBRAL hæmorrhage in children is an unusual occurrence, and in this case the symptoms were possibly dependent partly on the thrombosis of the sinus and veins, for the clot was of small size, the influence of age and the changes in the vascular system which it produces are well known, and we very rarely find cerebral hæmorrhage in a patient under twenty years of age.

On Oct. 24th, 1893, a child seven years of age was admitted to the South Devon and East Cornwall Hospital suffering from mitral disease. There was some ascites and also dropsy of the legs. Early in November the quantity of urine passed by the patient became very small, and the child was at first fretful, then drowsy, and finally quite comatose. There were lucid intervals. In a day or two the child was seized with convulsive attacks, which were left-sided. The head was turned towards the left, and there was conjugate deviation of the eyeballs in the same direction. There were violent twitchings of the left side of the face, particularly of the lower muscles and of the left arm. The legs were not much affected. The left leg twitched very slightly. The pupils were dilated and the pulse was rather hard. A hot bath always put an end to these attacks. The patient died and a post-mortem examination was made. The vessels running in the pia mater about the upper part of the right fissure of Rolando, the longitudinal sinus, and some veins over the cerebellum were thrombosed. About half an inch below the surface of the brain, at the upper part of the right fissure of Rolando, there was a round dark clot the size of a large cherry.

*Remarks.*—It is worthy of note that although the clotting

in the vessels, which by pressure on the cortex must have caused the convulsions, took place most thoroughly at the upper part of the motor area, the leg was very little affected. This could be easily accounted for by the pressure on, and tearing of, the nerve fibres on their way to the leg, which was brought about by the rupture of a vessel and the formation of the clot.

## Medical Societies.

### ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

#### *Spontaneous Disappearance of Solid Abdominal Tumours.*

AN ordinary meeting of this society was held on Jan. 23rd, Dr. CHURCH, Senior Vice-President, being in the chair.

Mr. J. GREIG SMITH (Bristol) read a paper on the So-called Spontaneous Disappearance of Solid Abdominal Tumours. Three cases were recorded, the common leading features in which were the presence of a solid tumour in the abdomen, absence of pyrexia, clinical evidence of malignancy on abdominal section, and ultimate disappearance of the tumour, with complete restoration to health. The first case was that of a young man aged twenty-five. Intestinal obstruction existed due to a solid tumour as large as a cocoanut situated in the lower abdomen. The tumour, being on inspection diagnosed as malignant and being adherent to intestines, was not disturbed. Enterostomy was performed for the obstruction. The tumour slowly diminished in size, and six months later, when the abdomen was opened for the performance of enterorrhaphy, it was found to have disappeared. The patient, after four years and a half, continued in good health. In the second case, that of a woman aged fifty-five, the tumour lay in the umbilical region, and was adherent at and around the umbilicus. It was globular in shape and as large as a child's head at birth. On abdominal section the intestines were found to be adherent to its surface on one side. Diffusing malignancy was diagnosed, and no attempt at removal was made. A small collection of muco-pus at the umbilicus was evacuated, and the slight discharge from a fistula which formed there continued for over two years. The tumour disappeared, the sinus closed, and the patient was now quite well. A girl aged nineteen was the subject of the third case. Here the tumour was as large as an eight months' pregnant uterus, filling and distending the upper and right side of the abdomen, but not dipping into the pelvis. On abdominal section the tumour was diagnosed as malignant and unremovable. A fæcal fistula formed; the tumour gradually diminished in size and ultimately disappeared. The intestinal opening was closed by operation, and the patient was at present in good health. Comparative observations were made on solid tumours of myomatous, tuberculous, and inflammatory nature, which in the writer's experience had been found to disappear after operation. An explanation as to the origin of the tumours in question was made to rest on the process of phagocytosis and the heaping up of embryonic protective cells around a minute fistulous opening communicating with intestine. Cure was accidental, but not spontaneous, depending in one case on a diversion of intestinal contents and in the two others on an external opening of the fistula.

Dr. CHURCH remarked that it was just in such cases as those under discussion that the quacks made capital. He suggested that some inflammatory lesion or enlargement of a Meckel's diverticulum might be the cause of some instances. An accumulation in a diverticulum, by preventing the passage of fæces along the intestine, would gradually lead to an increase of its own contents.

Mr. ALBAN DORAN said that the paper dealt with the very delicate subject of the erroneous or doubtful diagnosis of abdominal tumours. In cases of chronic peritonitis, accompanied by adhesions of intestine and by the accumulation of scybala, clinical signs might arise which closely resembled those of solid tumour. Chronic tuberculous peritonitis was not rare in tolerably elderly people, and as a result masses of inflammatory material might be formed on the surface of the intestine; these might subsequently disappear, and the temperature might remain for long periods little if any above the normal. Such inflammatory formations simulated a semi-solid or semi-cystic tumour and were