and the ether will rapidly boil. When the ebullition has ceased the material will be ready for use. The ether will not boil unless the tube is shaken, and it must not be allowed to remain in the bath long enough for the serum to become thoroughly heated.

If the blood corpuscles have not been entirely separated from the serum before sterilisation they will be completely laked by the hot ether, and the resulting medium will be more or less deeply stained with hæmoglobin, but nevertheless quite transparent. No precipitation or cloudiness appears during the process; on the contrary, the fluids are rendered unusually clear. Within our experience this method has never failed to sterilise either ascitic fluid or serum.

Among the more obvious advantages of this procedure over any other, it will be noticed that the albumins are unchanged by heat, and thus the fluids are as efficient media as if they were collected aseptically from the living animal. The sterilisation is rapid and certain to such an extent that it is unnecessary to prove the sterility before use. Finally, the method is applicable to the preservation of certain immune sera; thus we have found that the activity of hæmolytic immune serum is not reduced by ether sterilisation.

London Hospital Medical College.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF TETANUS OCCURRING TEN WEEKS AFTER INJURY.

BY ALEXANDER DON, F.R.C.S. EDIN.,

MAJOR, R.A.M.C. (T.F.), 1ST SCOTTISH GENERAL HOSPITAL, ABERDEEN.

A PRIVATE of the First Gordon Highlanders, aged 40 years, received a shrapnel wound on Dec. 21st, 1914; the bullet entered the right shoulder, fracturing the head of the humerus, the glenoid cavity, and the body of the scapula, and emerging opposite the inner scapular angle, 2 inches from the centre line. The wound was cleaned on admission on Dec. 31st. The scapula was much comminuted and several loose pieces were removed. Antitetanic serum was administered two days after the injury (Dec. 23rd) at Boulogne. On Jan. 28th, 1915, he was sent to Aboyne Auxiliary Hospital, and was readmitted on March 2nd with symptoms of tetanus. The tetanus bacillus was discovered in the pus and in a piece of bone which extruded from the wound.

Three thousand units of serum were given the same night subcutaneously, also gr. xxx. potassium bromide and gr. x. chloral hydrate every four hours. Up to March 18th 147,000 units in all were given, doses varying from 3000 U.S. units a day to 20,000, according to the condition of the patient as regards frequency of spasms. It was noted that the severity of the spasms and of pain varied inversely as the number of units injected. On three occasions, March 4th, 5th, and 6th, he had 4000 units intravenously, by puncturing a dilated vein in the arm through the skin. On all these occasions a distinct red irritated area appeared within the next 24 hours.

Twice an attempt to give an intrathecal injection was made. At the first attempt no spinal fluid escaped, and the operation was abandoned. His back was very much curved by the opisthotonic

spasms, but from daily experience of spinal anaesthesia I feel that I had reached the dural sac. On the 6th he was very bad, and a second intrathecal injection was attempted. Again no fluid escaped, but 2000 Lister Institute units were injected at high pressure, and the night following he became unconscious, passing faeces and urine in bed, and seemed moribund. He appeared to have cerebrospinal meningitis, which was attributed to irritation from the serum. He recovered somewhat towards morning, and became conscious again shortly after.

For some days his condition was very critical, but by March 18th the spasms had entirely ceased, and no more serum was given. It seemed that the concentrated serum, supplied in 4000-unit ampoules, was irritating both intravenously and intrathecally. Also that the effect of the serum in controlling the spasms lasted for less than 24 hours, and modified the severity of the spasms in three or four hours after injection. A quarter of a grain of morphia controlled the pain and gave a more restful sleep than the chloral hydrate with the bromide. Morphia was not, however, given except during the night, and on instructions. Chloretone rectally in olive oil had no marked effect.

The patient all along took nourishment well. The wound was in no way red or inflamed. The spasms were most severe at first on the side of the injury and at the root of the neck.

The long period between the wound and the first symptoms of tetanus suggests either (a) a recent infection, or (b) a delay in the appearance of the disease, due to the prophylactic dose given at Boulogne. The pulse-rate reached 140 on March 5th and 6th at night, but the temperature was seldom above normal, and seemed to depend more on the amount of discharge from the wound than on the severity of the tetanic spasms. The patient is now progressing satisfactorily, but there is still some "position" rigidity, which is gradually wearing off.

COMA IN A CHILD.

BY J. H. DONNELL, M.B., B.C. CANTAB.,

CAPTAIN, R.A.M.C. (T.F.).

ON Saturday, May 16th, 1914, at 7 P.M., I was called to a case which presents some interesting speculations.

The patient was a boy, aged 8 years, residing in a neighbouring village. He was in a state of coma. The history obtained was that after running about a cricket-field on that rather warm afternoon, he had come in to tea, and during this meal, at 5.45 P.M., had suddenly become unconscious. There were no convulsions at the time, merely unconsciousness. When I saw him his limbs were flaccid, his pulse and colour good, the breathing was quiet, temperature 99° F., and the pupils were moderately dilated but reacted to light. I inquired from a brother who had been with him for the possibility of any herbal or other poisoning, but failed to elicit any information. Two drachms of castor oil in milk were slowly given by the mouth. At 8.45 P.M. convulsions set in and continued with but brief intervals till 10.15, when they became less frequent, the last occurring at about 11.30. He remained unconscious until 3 A.M. During this period the pulse and colour were good. The information was now elicited that some boys had said the lad had eaten some chestnut leaves. Later, after recovering consciousness, he vomited and there were some "green" red currants in the vomit. On questioning the boy on the morning of the 17th he confessed to having eaten unripe gooseberries and green red currants, but denied eating any chestnut leaves. He had never previously had convulsions in his life nor any epileptic fits, neither was there any history of similar conditions in the family. On this morning he complained of slight gastric pain, but otherwise he appeared well, and the castor oil had been effective.

The details of the above case suggest the question whether it really was a case of poisoning from the unripe fruit. I take it that in children convulsions are due not to an intoxication but to a gastro-intestinal irritation; also the patient was old for an infantile convulsion, and the sequence of coma first and convulsions later is not of the usual type. The sequence is equally wrong if an epileptic fit is suspected, and, as pointed out above, if it was an epileptic fit it was his first, and rather an unusual one in its characteristics.

Hinckley.

Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Adeno-carcinoma (Mesothelioma) of the Kidney.—Congenital Cystic Kidneys.

A MEETING of this section was held on May 7th, Professor E. J. MCWEENEY being in the chair.

Mr. T. T. O'FARRELL read a paper on a specimen of Adeno-carcinoma (Mesothelioma) of the Kidney. The specimen was a tumour of the left kidney removed by operation by Dr. M. C. Staunton, to whom Mr. O'Farrell tendered his thanks for leave to exhibit the specimen. The patient was a girl aged 6 years. Since she had been two years old she suffered from vague abdominal uneasiness and for the past two years the abdomen had been noticeably distended. There were no marked symptoms apart from occasional attacks of pain; there had been no wasting, hæmaturia, or evidence of any secondary deposits. Since operation the child appeared much improved and at the present time is running about apparently in the best of health. To the naked eye the kidney was uniformly enlarged, showing some prominences in places; the tumour seemed continuous with the organ, but in part, more particularly towards the pelvis, the kidney substance was flattened out and formed a shell about the tumour. The specimen measured 15 by 9 by 7 cm. On section the tumour was soft and divided into distinct lobules, which varied in size from 8 cm. to 0.5 cm. in diameter. The greater bulk of the tumour was towards one pole, but the kidney substance was almost everywhere infiltrated by the growth. Microscopically sections taken from different parts showed typical adeno-carcinoma, with regular and irregular acini. After careful examination no other neoplastic cellular element, such as sarcoma, could be found. The naked-eye appearances of the specimen exhibited, taken with the youth of the patient, were strongly in favour of a diagnosis of teratoblastoma, a not uncommon kidney tumour of children. But though he kept in mind that in these tumours one element—the carcinomatous one—may preponderate, the specimen exhibited could not be regarded as such, for not even a trace of other element than the carcinomatous one could be found, and hence he thought it should properly be called a true blastoma, a tumour arising from unpotent cells, in this case a mesothelioma, and accordingly an extremely rare one in such a young patient.

Professor MCWEENEY said that after examining Mr. O'Farrell's microscopical specimens he had no doubt that, apart from embryological considerations, the tumour should be called an adeno-carcinoma.

Professor H. METTAM said he did not see why a new growth in the kidney should not be of a compound papillomatous nature, such as is met with in the ovary.

Mr. O'FARRELL, in replying, said he was pleased to have had his diagnosis confirmed as to the adeno-carcinomatous appearance of the specimen. The presence of muscle fibres was, he thought, a not uncommon finding in kidney tumours, and was probably due to inclusions from the sclerotome.

Professor MCWEENEY exhibited the Kidneys of a male, aged 47 years, who died at the Mater Misericordiæ Hospital in a uræmic seizure. The patient was alcoholic, but had enjoyed good health until three weeks prior to admission, when he began to suffer from "fits." He complained of

headache, tenderness over the left hypogastrium, violent pains in the calves of his legs, and diarrhoea. The seizures consisted of clonic spasms lasting about 15 minutes, giving place to coma, with stertorous breathing, which lasted about three hours. The pupils were unequal and knee-jerks absent. After a seizure the patient was quite collected and intelligent. On palpation a large tumour could be felt in the left hypochondrium. The patient only lived two and a half days after admission. Shortly before his death a white frost-like efflorescence was noticed on the skin of the face. The urine had a specific gravity of 1010, and contained a small amount of albumin. Samples were difficult to obtain, and it was not fully examined. At the necropsy the left kidney measured 20 by 10 by 10 cm. and weighed 1250 grammes. The right measured 17 by 10 by 8 cm. and weighed 850 grammes. The pelves and ureters were remarkably small. The kidney substance was reduced to small patches of parenchyma wedged in between innumerable cysts, and there was no distinction between cortex and medulla. The cysts were of all sizes up to that of a walnut, and the contents of some were thinly liquid, whilst others contained solid translucent brownish material like inspissated glue. Some of the cysts contained minute yellow spherical concretions with laminated and radiated structure, and consisting of an albuminous matrix with lime salts—chiefly carbonate. The largest seen measured 0.3 mm. in diameter. Microscopically very few glomeruli were visible, and of these the majority were hyaline, with a laminated Bowman's capsule. The cysts were lined with a single line of cubical epithelium, tending to disappear in the larger ones. The connective tissue was much increased and contained patches of lymphoid cells and unstriped muscle. There were patches of cells of epithelial aspect lying free in the connective tissue and suggestive of carcinoma, but presenting no evidence of mitotic activity.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—

A meeting of this society was held at the West London Hospital on June 4th, Colonel T. H. Hendley, I.M.S., being in the chair.—Dr. F. S. Palmer read a paper on the Functional Palsies and their Recognition, in the course of which he said that excluding cancer and tuberculosis there were few terms more awe-inspiring and loosely applied than that of paralysis. To the lay mind its significance was serious and unmistakable, and the popular view was probably based on the results seen in organic cases alone. The recognition of the functional examples was of paramount importance to the clinician. No distinction could be drawn between the words hysterical and functional as applied to paralysis. Organic disease and functional disorders might co-exist, as sometimes seen in cases of cerebral tumour. Many grave diseases of the nervous system developed on functional lines and for a time masked the underlying cause, especially the irregular forms of disseminated sclerosis; in their earlier stages they were sometimes indistinguishable. The diagnosis of the functional palsies was made by the exclusion of organic signs, evidence supplied by the examination of reflexes, and the recognition of hysterical personality. Ordinarily recovery was the rule except in long-standing cases with fibrotic changes in the joint and tendons. Sensation might or might not be disturbed, but usually marked anaesthesia in some form was present. Although it was often profound, and frequently changed its position, it never corresponded to the anatomical distribution of the paralysis, which varied from slight motor weakness to absolute loss of power. Within recent years some special signs had been noted of great diagnostic value to practitioners. Besides several local palsies the types usually encountered were monoplegia, hemiplegia, and paraplegia; diplegia and quadriplegia were so rarely seen that they did not require attention. Much importance was attached to the study of the reflexes, especially the plantar response, gait, pupillary and electrical reactions, together with the use of the ophthalmoscope. Of the local palsies hysterical aphonia due to paralysis of the adductors, in the eye concentric contraction of the visual fields, and in the ocular region pseudo-ptosis from spasm of the orbicular muscle were the most common. Some of the functional palsies were comparatively easy to recognise, but others were problems of great difficulty.—Mr. N. Bishop Harman, Dr. Alastair MacGregor, Dr. A. Ogier Ward, Mr. O. L. Addison, and others took part in the subsequent discussion, to which Dr. Palmer replied.