finger. There is no eczema or excoriation of the anus or perineum, nor is there any evidence that the rectum resents the presence of the urine more—even less, perhaps—than that of any other fluid. The frequency of defecation depends largely upon the amount of fluid ingested, and upon the degree of activity of the lad. When playing about he requires to evacuate the urine at intervals of one, two, or three hours, but in bed at night he frequently goes six or even eight or ten hours without an evacuation. The following figures represent the intervals of an average day taken at random: Bedtime, six hours later, five hours, three hours, one hour and a-half, three-quarters of an hour, two hours, two hours and a-half, one hour and a-quarter, and two hours.

There is no evidence whatever of reabsorption of urine from the rectum. It seems reasonable to suppose that the mucous lining of the rectum may have the same disposition towards the urine that is observed in the bladder and kidney epithelium, since they have a common embryonic origin.

A remarkable feature of this case is the manner in which the cloaca seems to act habitually as a bladder, and only performs the function of a rectum at such times as a movement of the bowels should take place under normal conditions, namely, once or twice a day. This feature also occurred, and was ably commented upon in Fowler's case. He recalls O'Beirne's observations that between the acts of defecation the rectum is practically empty, the accumulation of faeces taking place in the sigmoid flexure.

For this extraperitoneal operation the following advantages are claimed:

1. There is absolutely no danger of peritonitis.
2. A prominent natural papilla is secured. This is the natural manner of debouchement of a duct upon a mucous surface, and affords the best possible protection against spread of infection up the ureters.
3. The ureters are further protected against infection or sloughing by lying undisturbed in their natural environment almost to the point of implantation.
4. The operation is easy of performance, and practically free from shock and exhaustion.

CASE OF MENINGO-ENCEPHALOCELE TREATED BY EXCISION OF THE MASS.

By ANDREW FULLERTON, M.D., F.R.C.S.I.,

Assistant Surgeon, Belfast Hospital for Sick Children; Surgical Registrar Royal Victoria Hospital, Belfast.

THE patient, a healthy little girl, was brought to the Hospital for Sick Children, Queen Street, Belfast, at the age of 3 days.

State on Examination.—There was found a round, softish, opaque, fluctuating swelling, rather less than the size of the patient's head, in the occipital region, becoming tense when the child cried. There was no pulsation to be detected. On pressure over the tumour the anterior fontanelle bulged. The pedicle of the mass was situated between the external occipital protuberance and the foramen magnum, and was about an inch and a-half in diameter. The opening in the occipital bone could not be very definitely defined. There was a small cicatrix on the most prominent part of the tumour. A little ecchymosis could be seen over the convexity, evidently produced during parturition. The skin was of normal colour, fairly thick, and devoid of hair. Hair was, however, abundant round the pedicle and at the base of the tumour. There was a "post-anal dimple" in the coccygeal region. The child was otherwise strong and healthy-looking. There was no history of congenital malformation in any other member of family. The mother was very anxious that something should be done to relieve the deformity, being quite satisfied to take the risk of any operation that might be decided upon. Accordingly, when the child was 3 weeks old, and after consultation with several of my colleagues, the following radical measures were adopted:

Operation.—On February 5th, 1901, under chloroform, an elliptical incision was made round the neck of the tumour down to and including the dura mater, which was here intimately adherent to the skin. When one-half of the incision was made a finger was introduced and brain matter of the size of a small hen's egg, covered by arachnoid, was discovered. A considerable quantity of cerebro-spinal fluid escaped from the meningocele portion. The projecting brain with its covering of arachnoid was now rapidly removed with scissors. The child at this stage developed alarming symptoms, becoming pale, with blue lips, and gasping in frequent

respirations. The skin incision was therefore completed as rapidly as possible and the edges of the wound brought together with silkworm gut sutures so as to close over the opening in the skull, which was large enough to admit the finger readily, and through which more brain tended to protrude. The bleeding was not considerable and was easily controlled by pressure. Sterilised plain gauze was applied to the wound and the whole firmly bandaged. A few drops of diluted brandy were placed in the child's mouth, and soon the patient's condition began rapidly to improve. The breathing for some time after the operation was of the Cheyne-Stokes type. This, however, soon passed off. The pulse became fuller and more regular.

Progress.—The subsequent history of the case was for nearly four weeks uneventful. The child's general condition became excellent. Cerebro-spinal fluid leaked more or less for about a fortnight and then ceased. Internal squint, apparently of both eyes, developed on the day after the operation, but entirely disappeared within a week. The wound healed rapidly with the exception of the upper part where the flaps did not fit accurately, and where healthy granulation took place.

On March 1st, however, when the child was brought to the hospital it was found to have acute bronchitis from which it died on the day following. A *post-mortem* examination was not allowed.

The occurrence of bronchitis was very unfortunate, as the child looked extremely well, with the wound almost entirely healed, two days before the chest symptoms showed themselves.

The excised portion of brain was examined by the pathologist to the hospital and found to be occipital lobe.

A NOTE ON THE SURGICAL TREATMENT OF SPINA BIFIDA.

By LEWIS MARSHALL, M.D. ABERD.,

Surgeon to the Children's Hospital, Nottingham.

For a year or two I have been accustomed to use a method in the treatment by excision of spina bifida, which has succeeded so well that I am induced to call attention to it. The knife has somewhat recently replaced Morton's fluid, and what was perhaps more humane, a masterly inactivity—anything which adds to the success of this procedure—must therefore be acceptable. A brief record of a case operated on by me recently will probably make clear the points to which I attach importance.

A baby a few months old was admitted into the Children's Hospital, Nottingham, with a large spina bifida in the lumbar region. Roughly it may be described as about the size of a tangerine orange; three-fourths of the skin was translucent and very tense. An incision, at first small, to admit of the slow escape of the fluid—was made in the middle line whilst the child lay on its face with the head low and the buttocks raised. When the sac was empty the inner lining was dissected upon either side as far as the spine. Then this was turned inwards and a Lembert suture applied as in suture of bowel. Then sufficient of the external skin—much of which recovers itself after the removal of the fluid—was placed over the inner pad and secured by silkworm-gut interrupted sutures. The dressing used was collodion and cyanide gauze, of which a thick layer was applied in successive layers. It should be stated that the opening into the canal admitted the tip of the index finger.

In the after-treatment of the case the raised position of the buttocks should be maintained for the first week in most of the cases; but in the one recorded a rise in temperature with retraction of the head required the trunk to be lowered, though not to be quite horizontal.

Two points I wish particularly to emphasise are:

1. The formation of the inner pad and flange.
2. The position of the patient at the time of operation and afterwards.

Whether operation for spina bifida succeeds or fails is, in my experience, due to the retention of the cerebro-spinal fluid. The measures advocated by me assist this and also expedite the healing. I have removed one very large lumbar spina

bifida in the last twelve months, amongst other cases, in a boy 7 years of age with complete success, and also a large meningocele in a baby in the occipital region. The meningocele case I have seen this week, and it is quite well.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

URINE, UREA, AND FORMOL.

On adding to urine in a test tube a few drops of 40 per cent. solution of formol, it will, if clear, generally remain so. If to the mixture a few drops of strong chlorhydric acid be added, there will appear after a few minutes an apparent crystallisation nearly filling the liquid. This substance is slightly soluble in hot water, and is a compound of urea, chloric, and formol. If to a pure solution of urea in water the same reagents be added the same reaction will take place.

On placing a little of the solid under the microscope it is found not to be crystalline at all, but to be composed of an infinite number of globular particles of different sizes in accordance with its slow or quick precipitation. On washing and drying, it gives when rubbed between the fingers much the same sensation as would powdered starch. It is insoluble in alcohol, formol, ether, or glycerine, and but slightly soluble in water. In urine these reagents carry down nearly all the urea in solution.

Melbourne.

ED. ALLEYNE COOK, L.R.C.P., etc.

DROPSY OF THE AMNION.

On June 4th I was called to E. A., pregnant for the eleventh time. Her previous pregnancies, labours, and recoveries had all been normal and satisfactory. She said she was about five or six months "gone," and complained of intense pain all over the lower part of the abdomen. She looked very much larger than many women at full term, and she said that she was bigger than ever she had been at full term in her former pregnancies. She thought the pain arose from over-distension. She was not able to lie down or sit in a chair; she was obliged to "squat" on her bed with her legs drawn up. I saw on the two following days, the pain increasing and wearing her out with want of sleep, etc. I was urgently sent for again on June 7th; the pain had become so bad that she could bear it no longer; it was constant, but of the same character, and there was no sign of natural labour. On vaginal examination, however, I found the os dilated and the bag of waters protruding. I ruptured the membranes, when there was an immense gush of water, drowning the bed, filling the chamber utensil, and flooding the floor. With the escape of water a small foot came down. I gave a dose of ergot and made pressure, and after a short time delivered her of one child which showed feeble signs of life. There was a second child which was born without difficulty, but each birth was succeeded by a large flow of amniotic fluid. On the whole, two or three gallons must have escaped. The woman is perfectly healthy, without any dropical tendency, and she has made an excellent recovery.

Oxford.

CHARLES BALLARD.

THE USE OF OILS FOR THE PRODUCTION OF SURFACE FILMS ON WATER.

IN connection with Major Ross's forthcoming experiments in West Africa on the feasibility of destroying large numbers of mosquitos in a limited area, I have carried out a series of experiments with the object of ascertaining what oils are the most suitable and economical for the production of surface films on water. Of the many oils available for this purpose refined petroleum has been generally recommended. It readily forms a film when placed upon water, but the covering is often incomplete, and tends to become broken up upon standing. In addition, owing to the low boiling point of ordinary refined petroleum, the films would soon evaporate in a hot climate. The same objections apply to the light oils of coal tar, several varieties of which have been tested.

With the object of finding a less volatile and more economical oil for this purpose, other petroleum and coal-tar products were tried, with the result that I find the necessary conditions are well fulfilled by either crude petroleum or crude creosote oil. Both produce very perfect and coherent films, which are formed immediately on placing a drop of oil on the surface of the water. These films remain complete for days; in one trial with crude petroleum the film was still quite intact after ten days standing.

The crude creosote oil experimented with had a specific gravity of 1040 at 21° C., and 65 per cent. distilled between 210° and 260° C. A slightly heavier oil gives equally good films, and by the addition of a heavier crude creosote in suitable proportion it is possible to control the nature of the film if necessary. There is little to choose between the two oils in respect to efficiency, but the film forms rather more rapidly with the crude creosote, whilst that with crude petroleum appears to be somewhat more permanent.

As both consist essentially of high boiling constituents they can lose little by exposure, even in a hot climate; and from the standpoint of economy they are all that can be desired. In addition, as both these oils are unfit for use in lamps, they are not likely to be stolen by native assistants, a point in favour of their use as compared with refined petroleum.

CHARLES A. KOHN, M.Sc., Ph.D.

University College, Liverpool.

ATHEROMATOUS CYST FORMING A HORN EXCRESCENCE OF THE SKIN OVER THE LEFT FRONTAL EMINENCE.

Mrs. A. W., aged 75, has had a sebaceous cyst, which she described at first as a "pimple," for the last four years. Until the summer of 1900 not much increase of size

was noticed, when, to use her own language, "the top scaled off." Since that time gradual extrusion of the contents has taken place in the shape of a horn, which in October of the same year was $\frac{1}{2}$ in. in length, and at the present date has reached the following dimensions:

An ordinary sebaceous cyst, of the size of a small hazel-nut, forms the base of the tumour. From its apex protrudes an elongated horny substance, $1\frac{1}{4}$ in. long and $\frac{1}{4}$ in. in diameter, which tapers slightly to a rounded, down-curved extremity.

The skin is freely movable over the subjacent bone. The interest of the case seems to lie in the site of the tumour, and to the resulting fidelity, wellnigh mimetic, with which a horn of the herbivora has been simulated.

Stamford.

W. DOWLEY EDDOWES, L.R.C.P.

THE PREVENTION OF POISONING BY BROMOFORM. With regard to the article on the above by Dr. F. W. B. Fanning in the BRITISH MEDICAL JOURNAL of May 18th, I would wish to mention that if bromoform is first mixed with liq. senegae co. and then the necessary quantity of water