the youngest of four children—the others are alive and well. Two of these children are said to have had rickets when quite young. The patient was a full-term child and fed for the first few weeks on the breast. She was then fed on cow's milk and water, on which she developed diarrhoea at the age of 6 months. For the next few months she was fed on a diet consisting of arrowroot, cornflour, and water. For a number of years the child has taken a fairly full diet. The parents are of moderate means and her diet has been that of any other normal child. As a baby she had intractable diarrhoea, since when she has always had to "leave the table in a hurry." Her bowels were inclined to be especially loose in the summer. She has had measles, mumps, and whooping-cough, all when quite young.

Present Illness.—She first walked at 13 months, and her present difficulty seems to have dated from about her fifth year, when she started school. She has progressively become worse since. At one time she seemed quite normal mentally, but in the past three or four years she has become more and more "childish" and nervous. She has hallucinations of sight and hearing and has a continual fear of being murdered. She is inclined to repeat the same sentence over and over and is fast becoming more and more mentally backward. The rash was first noticed when quite young, perhaps at 3 or 4 years of age; certainly it has been present ever since 1915. Every spring her hands, feet, face, and neck become red and peeling and at times large blisters appear on them. The rash remained all summer. During the period the rash is present all the child's symptoms are aggravated.

On admission she was seen to be a well developed and moderately well nourished child. Her complexion was fair and her hair almost auburn. She had a dull face and it gave one the impression that she was mentally defective at the first glance. The most striking thing about her, however, was a red peeling condition of the whole of the face, neck, and exposed parts of the body, including the hands and feet and shins. In the popliteal spaces there was also well marked peeling. The skin felt harsh in these areas and reminded one of an exaggerated "ichthyosis." At the neck there was a sharp line where the red peeling condition suddenly gave way to the normal white skin. Her mentality would be about that of a child of 3 or 4. She was babyish in her speech and ways. She had marked hallucinations and believed that an attempt was being made to poison her. She was extremely emotional and cried for small things in an unreasonable way. She screamed out at night that someone was trying to cut her throat with a knife, or was trying to poison her. Her reflexes were all exaggerated. The plantars were flexor, and pseudo-clonus was present. The ankle-jerks were brisk. There was no ocular paresis and no ptosis or strabismus was present. Her speech was slow and deliberate. She walked in a spastic manner and with a broad base, and seemed quite unable to lift her feet properly from the ground. As she walked she held her head forward and kept the arms held out from her sides as if to balance herself. Sensation was not impaired to heat, cold, or pain. All the cranial nerves were normal. Her co-ordination with her arms was good.

While in hospital she had recurring attacks of diarrhoea. The stools were loose, offensive, and contained slime and undigested food. At these periods she would lose her appetite. A test meal showed that her gastric acidity was about half that of the normal. Her cerebro-spinal fluid was normal and the Wassermann reaction in both this and the blood was negative. The blood count showed 16,000 white cells present in normal proportions. The urine was normal. An examination of her discs showed no neuritis.

By October, 1922, the rash had completely disappeared. The mental condition showed well marked improvement. She seemed to be walking better. In April, 1923, her mother wrote: "She is still about the same, walking about the house a little, but resting every minute. Her face is already burnt with the sun and peeling again. She continued to improve right up to the beginning of March, but then her legs began to fail and she got tired very easily. She is inclined to dribble her saliva."

When shown at the Children's Section of the Royal Society of Medicine in the latter half of April the rash was not present, as by keeping the child protected from the sun her mother had prevented the reappearance of the rash to any extent. Mentally she seemed improved, but her walking was much the same as it had been ten months previously.

Comment.

In both these cases the rash and affection of the nervous system appear to be typical. Apart from the fact that at some period prior to the onset of symptoms both children were fed on large quantities of "cornflour," there is nothing in the history which would fit in with the various theories of the causation of pellagra. In Case II, at all events, the diet seemed to have contained a sufficiency of protein of high biological value.

These children had both resided all their lives in England and it is probable that the disease is commoner in this country than is at present realized, many cases remaining undiagnosed.

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A CASE OF FRACTURE OF THE SKULL CAUSING DEATH AFTER ELEVEN YEARS.

(With Special Plate.)

BY

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The following case is of considerable medico-legal interest:

An Egyptian, aged about 40, when admitted, was said to have been struck on the head with a stick during a quarrel eleven years earlier. He was rendered unconscious and removed to hospital, where he remained for one month and was discharged cured without paralysis or other disability. For eleven years he worked as a labourer without having the slightest trouble.

On May 15th, 1923, while sitting with some friends he suddenly became unable to speak and felt numbness and heaviness in his right arm and leg. There had been no quarrel, no excitement, nor undue exertion. On May 16th he was taken to hospital. He was then semi-conscious, could understand a few words, and responded by indistinct syllables to all questions. There was no squint, no nystagmus, no conjugate deviation. Right arm and leg motionless, muscles not atrophied, no tremors or twitching. Pupils normal.

Superficial Reflexes.—On the right side the plantar, abdominal, cremasteric, and corneal superficial reflexes are all absent. On the left side the plantar is flexor type, corneal and abdominal present.

Deep Reflexes.—On the right side, biceps, triceps, supinator, and wrist-jerks are all exaggerated; knee- and ankle-jerks almost normal. On the left side all are normal.

There are no deformities. Blood pressure: systolic, 100; diastolic, 70, pulse 72, full. Diagnosed right hemiplegia with aphasia and an old depressed fracture on the left side noted.

The patient remained in hospital till June 2nd—that is, sixteen days—and was prepared for operation, when he died. There were no signs of abscess or other septic condition. The temperature was between 37° and 38° C. throughout.

On post-mortem examination the limbs on both sides were found symmetrical, no contraction or atrophy being observed. There was a transverse scar 3 cm. in length adherent to the skull over the left side of the frontal bone. Under this was found a depressed fracture of the frontal bone 2 cm. to the left of the middle line measuring 3.25 cm. in the antero-posterior diameter and 3.9 cm. in the transverse, about two-thirds of the depression being on the frontal and one-third on the parietal bone. Its position was slightly above Broca's area and a little in front of and impinging on the Rolandic area. The posterior and lower segment of the wound was depressed to a greater extent than the rest, the floor of the depression gradually sloping upwards to the normal level. The sharp posterior margin was smoothed and rounded. To the right of this depression there was a healed fissure which passed forwards for 5.5 cm. from the fronto-parietal suture. On the right of the middle line on the fronto-parietal suture the frontal bone was raised above the level of the parietal, due to the opening of this suture by the blow, and 5 cm. from the middle line to the right a healed fissure arising from this suture and passing downwards towards the base with an inclination backwards could be seen.

Internally there was a roughly circular depression 4.2 cm. in diameter composed of five depressed fragments and showing fissures which could not be seen externally; there was no callus formation. All the edges were smooth and no signs of sepsis could be observed. (Figs. 1 and 2.) The dura mater was not thickened nor were there any special adhesions. The brain was congested and oedematous and there was a depressed area in the cortex opposite the fracture. The cerebro-spinal fluid was increased in amount. The cortex of the brain appeared normal, but on section the deeper tissues and wall of the left lateral ventricle were found lined with soft pulsatous material, and similar brownish material was found in the ventricle, the cavity of which was larger than the right. The optic thalamus and caudate nucleus appeared very soft and broke up on the slightest touch.

The other viscera, including the kidneys, appeared normal; there was no atheroma to be observed. There was no middle-ear disease or any other septic focus.

The brain was submitted for microscopical examination to the Pathology Department, and Dr. Serour found, in sections from the softened area, foci of sepsis with areas of interstitial haemorrhage and necrosis, and very slight thickening of the blood vessels.

This case appears to be of considerable interest from many points of view—namely, the rapid and apparently complete recovery and subsequent freedom from symptoms with a considerable area of bone depressing the cerebral cortex over the motor area; the rapid onset of cerebral softening without premonitory signs or apparent cause; the extraordinary period intervening between the injury

and onset of symptoms; the nature of the injury itself and the manner of its infliction.

First, as to the causation of the original injury, the appearance of the bones at once shows that a blow from a stick was not the causal factor. The acute, sharp-edged depression of the posterior and lower margin of the main area, the shelving of the floor, and the characters of the floor indicate that a blunt rounded instrument of heavy nature and small striking surface was used. Such weapon was in all probability a hammer or the blunt end of a fass (a kind of grabber used by the fellaheen in their work and a common instrument of offence). The blow was struck from the front by a right-handed man, the weapon being swung laterally. One blow only was struck, the forward drive of the weapon causing bending and compression of the skull, and bursting of the fronto-parietal suture was the natural consequence. The anterior and posterior fissures were caused simultaneously, the first by the bending at the site of impact, the second arising when the opening suture reached a point in the bone where it became thin enough to offer less resistance than the suture. This is a common feature of skull fractures.

Secondly, the rapid recovery after injury with definite pressure on the cerebral cortex is relatively common in this

country, and we regularly see cases of fracture of the skull, which in Europe would appear hopeless, in which recovery takes place without sequelae and without medical attention.

Thirdly, the sudden onset on May 25th of aphasia of the right limbs, followed by paralysis of the right side, indicates either rapid damage to both the motor area and Broca's speech centre or to the fibres passing from such areas, and as the softening was most marked about the optic thalamus and caudate nucleus we may assume that the motor and sensory tracts in the internal capsule were affected.

Such a condition would naturally lead to the diagnosis of thrombosis of the middle cerebral artery with consequent softening of the parts supplied. There was, however, nothing to indicate that there was any disease of the vessels whatever, and no reason for either thrombosis or embolism, the slight amount of thickening in the small arterial vessels being quite insufficient to account for thrombosis. The presence of septic foci in the softened area, the localization of this area under the old fracture, the absence of other disease, injury, or other cause, raises the assumption that the old injury to the skull and brain was the cause of cerebral necrosis and death after a period of quiescence of eleven years.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, 1923.

SECTION OF RADIOLOGY AND ELECTROLOGY.

S. GILBERT SCOTT, M.R.C.S., L.R.C.P., President.

DISCUSSION ON THE X-RAY EXAMINATION OF THE URINARY TRACT.

OPENING PAPER

BY

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(With Special Plate.)

SINCE the advent of x rays urology has undergone an enormous advance in more accurate diagnosis. This advance has only been obtained by the co-operation between urologists and radiologists. In the earliest years of radiology it was thought almost sufficient if a shadow of a stone could be demonstrated; but as years have passed, experience accumulated, and technique made more perfect, very much more is expected of the radiologist, and, in the more obscure cases, the technique has to be much elaborated. For some years only a positive result was of value, but now a negative one is, or should be, of almost equal value. The success of x-ray examination of the urinary tract may be said to depend on two main factors: (1) proper technique, and (2) accurate interpretation; the latter can only be got by combining the experience of the radiologist with that of the urologist.

As the technique is so important it will not be unprofitable to deal with it in full. As regards the x-ray apparatus, this should be capable of making the correct exposure in a fraction of a second, or at most in two or three seconds. The more rapid the exposure the less time the patient has to bear the compression and the easier it is to ensure immobility of the kidneys with resulting sharpness of outline. If the outfit is not so powerful it is still possible to do good kidney work with longer exposures, provided the kidneys are kept at rest by proper compression. Even with rapid exposures it is better to apply some form of compression for the purpose of displacing the coils of intestine to one side or the other, and so giving

a less thickness of solid parts to be traversed. A pneumatic bag which can be blown up to various degrees of distension is very satisfactory for this purpose.

If the examination is to be of any value it is necessary that the patient be prepared beforehand. For this two days should be allowed, during which he keeps on light diet and takes an aperient on each of the two evenings preceding the examination, so that the bowels are well cleared out. Early on the morning of the examination an enema should be given and as light a breakfast as possible taken. For the patient's comfort it is therefore better to make the examination early in the day rather than late. As regards the aperient, it does not matter much what is used, although some avoid castor oil as causing too much distension of the bowel with gas. Preparation of the patient, however, should not be overdone, as it is believed that if the intestines are empty and quite collapsed it is more difficult to show the outline of the kidney than if a certain amount of gas is present.

The patient having been properly prepared, one is ready to make the exposure. The tube should be soft rather than hard, with just sufficient penetration to get through the parts. The patient may be lying on his back or on his face according to the radiologist's method of technique. If the patient is supine the film is placed under his back in such a position that the last two ribs and the top of the iliac crest will be included. It is important to observe whether the skin of the back is free from papillomata or scars, and that it is in close apposition to the film. This can generally be managed when the compression is applied, or by some little manipulation, such as raising the knees or shoulders or both.

The tube should be tilted so that its extension tube points under the costal cartilages and thus avoids any calcification which may be present. As the centre of the kidney is normally at the level of the second lumbar vertebra the central ray should pass through this level, so that the kidney outline will show the least amount of distortion. It is immaterial whether both kidneys are done simultaneously on a larger film or whether each one is done separately, but it is most essential that the entire urinary tract of both sides should be done in all cases. Cases turn up every now and then in which the pain from a stone is referred from one side to another, and if both sides are not examined the examination would be more misleading than if it had not been done.

The films of the kidney region should show clearly the whole of the kidney outline, the last two ribs, the transverse processes of the lumbar vertebrae, outer margin of psoas muscle, and part of the crest of the ilium. The writer prefers to use unscreened films, but there is no objection to screens of the first quality such as Patterson's.

FIG. 1.—The hands and wrists in Case 1.

FIG. 2.—The knees in Case 1.

FIG. 3.—Appearance of face in Case 1.

SYDNEY SMITH AND MOHAMED EMARA:
FRACTURE OF SKULL.

FIG. 1.—Showing external aspect of bone.

FIG. 2.—Showing the internal aspect.