that the great-toe of this leg crosses the left ankle. The right buttock is much flattened. Behind the great trochanter are two sinuses, which discharge copiously. The apparent shortening is nearly three inches, of which the actual shortening does not amount to more than one-third." After a month devoted to a fresh trial of rest, during which the joint was fixed, it became evident that her condition deteriorated, and excision was her only chance. It was therefore done on the 8th November, the head, with the neck and greater trochanter of the thigh-bone, being removed through the usual curved incision. The acetabulum had lost its articular cartilage, and in some parts seemed to be carious. These softened suppurating spots were gouged out. The wound was washed out with a solution of chloride of zinc, twenty grains to an ounce, and closed with sutures, except at one point, through which a caoutchouc drainage-tube was inserted, the other end of which was brought out through a counter opening made in a large inter-muscular abscess, which was found running down the thigh. The limb was fixed in the customary manner with a De Morgan's splint and sandbags. She had a firm, thick, horsehair mattress placed upon a continuous flat board, and a water pillow was put beneath her breech.

On the third day she was cheerful, playing with her doll, and had slept well. On the nineteenth day one of the inguinal lymphatic glands was swollen and tender, and two days later an abscess pointed near the anterior superior iliac spine. It was opened, and a large quantity of very fetid pus was let out. On 14th December this abscess, the lower of the two sinuses in the thigh, and the greatest part of the wound had closed, and there was but little discharge. On the 22nd March, 1867, passive movements and pressing the end of the bone into the acetabulum gave no pain. Two small unhealed spots in the wound and two of the sinuses furnished a few drops of pus daily. She was quite easy, and had gained flesh. Early in May she was allowed to go into the garden with crutches, wearing a spica bandage stiffened with glue, and at the end of the month she went home.

March 20th, 1868.—After nearly a year her mother brought her to see Mr. Hulke. The girl had grown stouter, stronger, and taller. She still wore a stiffened bandage for support. In-doors she ran about the house without any artificial aid, but out-of-doors she still used a crutch, which, however, it was thought she would scarcely need if she had a suitable boot. The old sinuses had closed, and the wound had healed except at its centre, where a very small, apparently superficial sore sometimes yielded a drop of pus; it was then dry. She had a very fair amount of movement in the false joint.

In the early autumn of the same year (1868) she continued well. The right leg at this time was one inch and a half shorter than the left.

RADCLIFFE INFIRMARY, OXFORD.

CASE OF UNILATERAL CONVULSION IN A CHILD, SHOWING THE VALUE OF CHLORAL HYDRATE AS A REMEDY.

(Under the care of Dr. ACLAND)

FOR the notes of the following interesting case, and the appended remarks, we are indebted to Dr. C. A. Rayne.

E. W.—, a boy aged five, was admitted Sept. 2nd, 1874, suffering from convulsive seizures, sometimes as often as twenty in twenty-four hours. Three weeks before he was struck by a stone on the back of the head, and two or three days afterwards the fits first appeared.

On examination, a scar was detected close to the occiput, half an inch to the left of the middle line. It was stated that the boy's father had suffered from fits when about the same age. In the fit, as observed the day after admission, the head and eyeballs were turned to the right, and remained there, fixed, rigid, and motionless, the pupils being slightly but equally dilated. The right arm was rigidly extended, with a slight tremulous motion; the rest of the body unaffected. Consciousness appeared to be quite lost. The fit lasted about one minute, and recovery was rapid, almost abrupt, and complete, there being at this time no after-drowsiness. The patient's appearance and habits were lively and intelligent, and his general health good. In the

intervals between the fits there was nothing abnormal noticed. There being reason to suspect the presence of worms, a dose of santonin and castor oil was administered.

Sept. 4th.—Three large lumbricoid worms have been passed; the fits are much less numerous, and chiefly occur in the early morning. The vermifuge to be continued.

7th.—No more worms have been observed; the fits still continue, to the number of three or four in the day. Ordered three grains of bromide of potassium thrice daily.

14th.—No further improvement. The bromide continued in five-grain doses, and the nape of the neck painted with iodine liniment.

18th.—Fits increasing in number and severity. Ordered the bromide in ten-grain doses every four hours.

25th.—Condition becoming worse; fits are now as many as twenty in the twenty-four hours, occurring chiefly in the day-time, and necessitating confinement to bed. In the intervals the right side is distinctly weakened, and the boy walks with a falter of the right leg, frequently stumbling. He is still lively and intelligent in his actions, but has gradually ceased to talk. He does not answer inquiries, and is probably aphasic. He constantly cries to be allowed to get out of bed, and immediately his feet touch the ground he sets off running, apparently not caring where he goes, for he will run against a wall or into the fire. The special senses are not, however, affected, so far as can be discovered, nor does he appear to be in any pain, but the general health is rapidly deteriorating. Ordered tincture of belladonna in five-minim doses every four hours.

Oct. 3rd.—No improvement. The commencement, progress, and duration of each fit are again carefully observed. The onset is quite sudden, and attended with a faint cry; if standing, he falls to the ground; in bed, sitting up (his usual position now), he falls backwards, and apparently at once loses consciousness. The features are now blanched, and twitching commences in the frontalis muscle on both sides, the right angle of the mouth speedily taking up the action. The head and eyeballs, as before, are drawn to the right, and the latter are twitched repeatedly in this direction, the internal rectus of the left and the external rectus of the right eyeball being apparently affected with clonic spasm. The mouth is drawn to the right; there is rigidity of the right arm, with tremulous motion; conjunctivæ insensible; pupils equal and large. Duration of fit about one minute, after which patient now falls asleep for a quarter of an hour. In one fit it was observed that the head was at first directed to the left, but speedily took up its accustomed position. In all the affected muscles the spasm is acquiring more of a clonic character than at first; they are affected also with a certain amount of temporary paralysis after each fit. Ordered iodide of potassium in five-grain doses every four hours.

10th.—No improvement. Ten grains of the iodide are now given thrice daily.

20th.—The fits now number twenty to thirty in the day, and are more severe. The right side of the face has acquired a blank and expressionless aspect. The general health has suffered considerably, and patient looks pallid and thin; his appetite, however, is good. He is still lively and mischievous, but does not talk. He frequently exhibits vicious tendencies towards his neighbours, such as trying to bite them; and is very dirty in his habits, apparently wilfully. Ordered seven and a half grains of chloral every night.

22nd.—Fits now reduced to about fourteen in the day. Ordered ten grains of chloral thrice daily.

25th.—The fits are now much fewer in number and less severe; seven yesterday, and only two to-day; very slight, and no after-drowsiness.

Nov. 4th.—No fit since the 30th ult. Patient cleaner in his habits.

10th.—There has been no fit. Patient gets up now, and is very vivacious and troublesome, running about in a haphazard kind of way, and not unfrequently coming to grief. He looks out of health; the face has lost its intelligent aspect, and appears asymmetrical and ill-developed on the right side. The right side of the body appears weaker than the left. He makes no attempt to talk. Ordered to take the chloral now only at night in ten-grain doses, and a teaspoonful of cod-liver oil twice in the day.

20th.—No return of the fits. Great improvement in general health and intelligence. Ordered to omit all medicine except the cod-liver oil.

Dec. 2nd.—Patient has now recovered his usual health, and is discharged. He is, however, unable to talk.

A month later his mother wrote to say that he had had no relapse, that his health was good, and he was commencing to talk again.

Remarks.—The muscular phenomena in this case correspond very accurately with those which would be occasioned, according to Prof. Ferrier, by disease or injury affecting some of the left frontal and parietal convolutions.* Thus, he states that the *hand and arm centres* are localised in the ascending parietal and upper divisions of the ascending frontal convolutions; that the posterior divisions of the superior and middle frontal convolutions contain an area, stimulation of which causes *the head and eyes to be directed to the opposite side, and the pupils to dilate*; and that the *facial muscles and muscles of articulation* have their centres in the ascending frontal, in regions corresponding to the posterior extremities of the middle and inferior convolutions respectively. Though there was no opportunity of determining the precise seat of lesion in this case, it is extremely interesting and corroborative of these views to note that not only are all these parts in immediate relation to each other, but also that if we suppose a centre of disturbance to commence at the lower part of the ascending frontal convolution, and to spread over part or the whole of the ascending parietal and the superior, middle, and inferior frontal convolutions, we should have the succession of muscular phenomena *in the order in which they did actually occur*. It is worthy of note also—whatever may be the ultimate significance of the fact—that a large artery, a branch of the middle cerebral, runs along the anterior division of the Sylvian fissure, furnishing numerous lateral offsets to the parts in question. Any disturbance of this artery through its sympathetic nerve-supply, and extending to its branches, would probably affect these nerve-centres in the same order.

It remains a difficulty to understand why the occipital injury (if this was really the origin of the mischief) should have specially affected these particular convolutions. It is tolerably certain from the result that the real organic injury was slight, though its effects functionally were grave. Probably the chloral hydrate acted so magically merely by quieting the irritable nerve-centres, until they had had time to recover from the “bad habit” which they had acquired. It is instructive to note that this irritability, though *intrinsic* in the first instance, was capable of being greatly increased by *extrinsic* causes (worms in this case), and that it underwent great diminution for a time on the removal of these.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

THE ordinary meeting of this Society was held on Tuesday, the 9th inst., Sir James Paget, Bart., in the chair.

The meeting was occupied by a paper by Dr. WILLIAM M. ORD “On Urinary Crystals and Calculi; being observations on some of the circumstances determining the form of crystalline deposits in the urine, and on some of the conditions under which renal and vesical calculi are produced.” The paper was a *résumé* of some of the investigations on which the author has been for some time engaged on the influence of colloids on the variations in crystalline form, and especially of experiments made with the object of producing synthetically under determined conditions the various crystalline forms observed clinically in urinary deposits. Some of these researches have recently been published in the *Journal of the Royal Microscopical Society*. The paper, which was of some length, was illustrated by numerous diagrams showing the variations in the crystalline form of urinary deposits seen under various conditions of the urine.

The author first reminded the Society of the difference between the crystalline form of pure uric acid

and that of uric acid as observed in urine, the former occurring in oblong rectangular tablets, approaching to the square form, and of a thickness about one-sixth of their length, the latter usually in rhombohedra with rounded obtuse angles; the former is found in separate crystals, the latter very frequently in zeolitic masses. After a brief reference to previously published observations of the author showing that uric acid deposited in the presence of albumen or other colloids tended to sphericity, whilst in the presence of sugar and other crystalloids it is angular and mostly tabular, a series of experiments, made with the object of determining the causes of the altered forms of urinary uric acid, were related. These consisted for the most part in crystallising uric acid from saturated solutions in the presence of the principal organic and saline constituents of the urine in succession. The conclusions drawn from these experiments, which were very extensive and varied, was that mucus and the colouring matter of the urine are both agents in the production of the forms of uric acid ordinarily met with in the urine; that either agent is capable of exerting this influence without the presence of the other, and that these are probably the sole agents in ordinary urine.

The next series of observations referred to the forms of uric acid in *albuminous* urine. It was remarked that whilst they tend generally to sphericity, they vary much in the degree of their tendency; and from a series of observations, the results of which were given, the author inferred that a larger proportionate quantity of urea in albuminous urine constitutes an obstacle to the sphere-forming process in proportion to the amount; even a very small quantity exerting a considerable influence. The author stated that he had been unable to arrive as yet at any definite conclusions as to differences in the influence of other albumens on the form of the crystals. In *saccharine* urine two forms of uric acid crystals were noted as occurring, one a flat rhombohedron with chiselled ends, the other a six-sided tablet with sharp ends, the latter being a form of rare occurrence. *Purulent mucus* in urine appeared to possess a great power of converting uric acid to a spherical form, and of causing the aggregation of spheres into calculi. The author referred to the observations of Dr. Vandyke Carter on the structure of calculi, and argued that the experiments related agreed from a synthetic point of view with his analyses. He inferred that the influence of colloids, and particularly of mucus, in favouring the formation of calculi within the urinary passages, was of the greatest importance, and worthy of especial notice in its bearings upon practice. Catarrh of the pelvis of the kidney or bladder, or other conditions sending colloids into the urine, might thus be the determining cause in the production of stone. He believed that uric acid and other crystalline substances do not of themselves tend to form calculi, but are moulded by the other constituents of the urine. Although its influence had not been exactly measured, a higher temperature was shown to be active in promoting the formation of spheres, and the author attributed great importance to this point.

The forms of urates and the influence of chlorides, albumen, and mucus upon them, were next noticed. The formation of spheres was found to be favoured by the presence of mucus in a high degree, and in a less degree by that of albumen. Concentration of the urine and detention in the urinary passages were noted as important coefficients. This especially applied to the spherical form of urate of soda observed by Golding Bird, Thudichum, Beale, Roberts, and others.

The formation of dumb bells of oxalate of lime under the influence of colloids was next referred to, and several cases of spheroidal modification of oxalate of lime in urine containing colloids were brought forward, especially one in which both spheroidal form and the ordinary octahedron were passed at the same time, the urine containing albumen. With regard to triple phosphates, they appeared to be much less easily moulded by colloids than the other substances mentioned, but it was shown that mucus, aided by a warm temperature, can and does modify triple phosphates towards sphericity, and favours calculous deposits. The forms obtained under such conditions were found to agree in a

* Memoir on the Localisation of the Functions of the Brain. Presented to the Royal Society.