habit, so that the removal of the major deformity has not resulted in a perfect restoration of functional usefulness, to the dissatisfaction both of the surgeon and the patient's friends.

If a careful study of a limb in the above category be made, it will at first sight appear that the entire extremity is inverted. If, however (as was pointed out to me by my friend and colleague Mr. Chance), the patella be placed in its normal position, looking directly forwards, it will be seen that the inversion wholly results from conditions existing below the knee. It may furthermore be added from abnormal relations of the skeleton at the lower third of the leg. To briefly define this abnormality: The post-axial line does not occupy its ordinary position in human anatomy, but the fibula is distinctly projected to a point anterior to its usual situation. The external malleolus is on a plane far anterior to the internal in the plantigrade position of the foot. This, then, must be regarded as the factor in the production of inversion of the lower third of the leg itself, and, as a consequence, of the foot.

Two theories may be held as to the causation of this abnormality: First, that the extremity of the fibula is tilted forwards by the traction exerted by the peronei tendons in their overstrained state. Secondly, that it may be explained by developmental arrest. If we examine the arrangement of the skeleton in the lower extremities of the higher anthropoids, an equino-varus is the normal arrangement; and if the sole be approximated to the ground, the external malleolus is very much anterior in its relative position to the internal—to that which is seen in man. This was pointed out to me very clearly by my friend Professor Frazer, R.C.S.I., in the dissection of the lower extremity of a chimpanzee. I would regard the condition, then, rather as an indication of reversion of type, and as in its essential explanation identical with equino-varus itself, and not the production of any concomitant accidental cause.

Regarding the practical management of this element of deformity, its importance has been fully recognised by orthopaedic surgeons, and many appliances have been devised for its removal. Dr. L. Sayre used a spiral spring for everting the entire limb. The same object may be obtained by adapting steels to a pelvic band, which are inserted into the boots by slots set at a suitable angle. Other contrivances have been resorted to for the same object, which it is unnecessary to enumerate. A good deal of reliance has also been placed on the voluntary power which education will cause the child to exert in the production of eversion of the limb; but if we investigate the result of the adaptation of any one of those means, we will see that the apparent correction of the deformity is produced by the creation of another. The femur is rotated unnaturally, so that the patella, instead of looking forwards in walking, will present its anterior surface outwards. Even if voluntary effort be successful in concealing the deformity, it means the imposition of a strained and unnatural method of progression, which violates the law regulating the economy of force.

For the rectification of this condition I have concluded that a section of the tibia at the junction of its middle and lower thirds, with rotation outward of the lower fragment of the bone on its own axis, is perfectly efficient. The external malleolus is thrown backwards, carrying with it the foot, which remains in a normal position. When the osteotomy has healed, I have applied this operation to a number of cases within the last six months with uniform satisfaction, and I am convinced that it is the proper corrective, being safe, easy to perform, and followed by perfectly good results.

ROYAL MEDICAL BENEVOLENT FUND OF IRELAND.—The annual meeting of this Society was held in the College of Surgeons, Dublin, on Monday, June 3rd, Mr. Thornley Stoker, President of the College, in the chair. The report stated that 75 applications for aid had been considered. The Society's stock amounted to £22,777. The speakers were Dr. W. G. Smith (President of the College of Physicians), Dr. Truett, Dr. Jaggart, Dr. Moorhead (Cootehill), Dr. Little, Sir Wm. Stokes, Professor Bennett, Mr. Croly, Brigade-Surgeon Potter, Dr. Jacob, Dr. Newell, Dr. R. Moore, and Deputy-Surgeon-General Beaumont.

CASE OF INJURY TO THE FOREHEAD FOLLOWED BY APHASIA, PARTIAL PARALYSIS OF RIGHT ARM, AND CONVULSIONS:

TREPHINING AND EVACUATION OF CLOT: RECOVERY.

By J. C. RUSSEL, M.D., and C. PINKERTON, M.D., C.M.

HISTORY OF THE CASE: By Dr. RUSSEL.

On March 3rd, 1894, J. H., a healthy and wiry man, aged 67; was thrown from his tricycle. His forehead struck the ground, and was cut, as was also his little finger. The wounds, which bled freely, were dressed at a neighbouring surgery. He was not stunned, but could not afterwards recollect how he got home.

I saw him for the first time on March 4th. He complained of feeling shaken, and of pain in the right arm and shoulder. Since the fall he had vomited everything he had taken. There was no other special symptom. The cut was about an inch and a-half long, situated above the outer half of the left eyebrow. No fracture or depression of bone could be found about it.

On March 5th no more vomiting had occurred, but it was observed that he was unable to speak properly. He left his sentences unfinished, seemed at a loss for words, and used wrong and meaningless words. He did not spontaneously use his right hand, though he could move it when told, and could grasp feebly. No paralysis of the face was observable. On the following day the aphasia was more complete. At 11 P.M. he had a sudden attack of convulsion; and on March 7th a second attack at 1 A.M., and a third at 9 A.M. These attacks were said to be all similar. They came on suddenly, lasted for two or three minutes, affected the whole body rather violently, and were accompanied by loud stertorous breathing. Those who witnessed them, not being skilled observers, could give no further particulars.

The occurrence of convulsions with aphasia and partial paralysis of the right arm following injury led to the diagnosis of effusion of blood on the surface of the brain causing pressure in the region of the speech centre and its neighbourhood. The friends of the patient were advised that trephining, in the expectation of finding and removing blood clots, was the proper treatment, and Dr. Pinkerton was invited to examine the case with a view to operating if he deemed it expedient. The consultation was held in the afternoon, and as there had been no convulsions since morning and the patient's condition seemed improved, it was decided to refrain from operation and await further developments.

On March 8th and 9th the general condition was improved. He was conscious, and spoke volubly but quite unintelligibly. During March 10th, 11th, and 12th he became worse. On the last named day he was lethargic and restless, he frequently moaned and raised his left hand to his head, he took no food, and towards night became quite comatose. The pulse was under 60, and full. On the morning of March 13th his condition was much the same, and the operation was performed in the forenoon.

THE OPERATION: By Dr. C. PINKERTON.

We first localised the fissure of Rolando, as follows. A point on the crown of the head, half an inch behind the middle of a line drawn from the root of the nose to the external occipital protuberance was taken as indicating the upper extremity of the fissure. A second line was then drawn, perpendicular to the first, so as to pass immediately in front of the meatus, and a point on this line two inches above the level of the centre of the meatus was supposed to indicate the lower extremity of the fissure. It appears from the result that the location of the fissure by this very simple method was substantially correct.

No shaving was required, owing to the baldness of the patient, but the integuments were rendered antiseptic. The incision at first was crucial, but was afterwards enlarged in an anterior direction, so as to convert it into an irregular crescent. A 1-inch trephine was then applied over what was supposed to be the spot for the arm and speech centres, but on reflecting the bone nothing abnormal was discovered. Having enlarged the scalp wound, the trephine was again applied immediately in front of and slightly below the first opening. The bone

here was much thinner and less dense, and this disc was soon cut through. On reflecting the bone it was first noted that a considerable branch of the middle meningeal artery ran across the upper third of the opening. At first the dura mater seemed normal here also, but on feeling it carefully all over with the finger, a point "of increased resistance," to use Dr. Russel's phrase, was detected in the lower third. The dura was here incised, and immediately black clotted blood began to exude with each pulsation.

The clot was gently broken up, the cavity syringed and dried very carefully, and, a drainage tube having been inserted, the wound was sewn up and dressed. It may be remarked that the edges of the wound in the dura approximated closely, and so they were not sewn together.

The operation lasted ninety minutes, and immediately afterwards he moved his right arm a little. He swallowed much better that afternoon, and was able to make signs when he wished to pass urine. The wound healed by first intention, except where the tube emerged, and the temperature did not rise above 99°, except early in the morning of the 17th, when it rose to 101.6°, owing to blocking of the tube.

At our morning visit on that day we found the temperature normal, and the tube, together with a quantity of bloody serum, expelled. After this the temperature did not rise above normal, and the wound was firmly healed fourteen days after the operation, and he now has a cicatrix which shows no sign of bulging.

On measuring his head on May 4th I found that the first trephine hole was further back than had been intended, owing to the liability to err when the flaps are reflected. The convulsion laid bare by the dural incision ran horizontally backward, and was presumably the third frontal.

In conclusion, I wish to say that Dr. Russel was strongly in favour of the operation from the morning of March 6th, and I have to thank Mr. Popert for his valuable assistance during the operation.

As regards the aphasia, improvement was noticed on the fifth day after the operation; it slowly advanced till the eleventh day, and then rapidly, so that by the twenty-fifth day, when he went to the country, he could speak fairly well, but still used many wrong and altered words and was at a loss for the names of places and things.

When seen on June 6th he was not entirely free from aphasia, but had no practical difficulty in expressing himself. His intellect had not apparently suffered. The movements of the right arm were free, but he could not use it behind his back. The pupils were so contracted that we were never able to get a view of the fundus oculi.

THE TREATMENT OF FRACTURES.

By EDWARD DEANESLY, M.D., B.Sc.LOND.,
F.R.C.S.Eng.,

Honorary Casualty Surgeon, Wolverhampton General Hospital.

WHILE agreeing entirely with Mr. Arbuthnot Lane's views on the importance of preserving the correspondence of the axes of the fragments, and on the fallacy of the vertical foot-piece in the treatment of fractures of the lower limb; I deny that the results obtainable by the ordinary methods of treatment are so imperfect as he represents. Mr. Lane has asserted that the average financial depreciation of the labourer as a machine after such an injury as an oblique fracture of the tibia and fibula sustained after middle life amounts to nearly 70 per cent. I do not know on how many cases this generalisation is based, but that it represents the average result of the ordinary treatment of this injury is entirely opposed to my own experience as House-Surgeon and Honorary Casualty Surgeon to the Wolverhampton General Hospital, where between sixty and seventy cases of fracture of the leg are admitted every year. The necessity of obtaining club certificates kept the great majority of these cases under my observation until they were able to return to work, and I cannot recall a single case that was unable to return to the same employment as before on account of imperfect recovery from the effects of the injury.

Neither does my experience bear out Mr. Lane's condemnation of the use of plaster-of-paris. During the two years that

I occupied the post of house-surgeon every case of simple fracture of the leg was treated by the application of a plaster case within a few hours of admission—generally within an hour or two. This was applied with the patient lying on his back with the knee and hip flexed to a right angle, while an assistant maintained traction on the foot; the vertical position of the thigh was maintained by a padded sling attached to the head of the bedstead, and serving as a counter-extension. In this way the most oblique fracture usually falls into position without difficulty, and by placing the sound limb in a corresponding position it is easy to satisfy oneself by comparison that the foot is in proper position as regards rotation. The plaster having set, the limb was kept in the same position in a sling-cradle until the fourth or fifth day, when, the swelling having subsided, the leg was allowed to lie in any position on the bed for another week or ten days, when the patient was allowed to go about with crutches. In cases in which the fracture was at or above the middle of the leg, the plaster was continued a little above the knee as soon as the limb was allowed to lie straight on the bed.

That this method is capable of giving perfect results even in very oblique fractures of the tibia and fibula I have often proved, so that only very exceptional reasons would induce me to adopt the exposure and screwing together of the fragments recommended by Mr. Lane. Quite apart from the risk of wound infection, which varies with the personal equation of the surgeon but can never be entirely eliminated, Mr. Lane does not conceal the mechanical difficulties of the procedure, and any surgeon who has attempted to do it (as I have done in a case of compound fracture) will admit that it is most difficult to wire or screw the fragments sufficiently firmly to resist the powerful displacing forces at work in a recent fracture. I am quite sure that any surgeon who is skilful enough to perform the operation recommended by Mr. Lane could obtain an equally good result by less risky means.

MEMORANDA:

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

A CASE OF DIPHTHERIA TREATED BY ANTITOXIN SERUM.

On March 30th, 1895, I was sent for 13 miles up country. I found two children—a girl, aged 4, and a boy, aged 2½—with well marked diphtheria; the cervical glands were slightly swollen, and the tonsils of both children were covered with membrane. They were ordered ½ gr. of iodide of mercury every three hours. On April 1st the girl seemed slightly better; the boy had then nasal diphtheria, a profuse discharge issuing from both nostrils. On April 4th, at 3 p.m., the girl was quite well, the membrane quite gone from the tonsils, and the glands quite reduced. The boy, however, was very ill and exhausted; the pulse was rapid and very weak, the breathing loudly stridulous, the lips cyanotic, the face of an ashy grey colour, there was recession of the chest walls and epigastrium. Seeing that the child was practically *in extremis*, and having heard the day before that the Government had just landed some antitoxin, I drove hurriedly back, and telephoned to the Wellington Hospital. Dr. Ewart promptly sent me a tube out by train, and I drove back to my patient, and at 9 p.m. injected about a drachm into the skin of the abdomen, using a new Koch's tuberculin syringe—the only one I had handy. I had intended to inject 3 drachms altogether. Unfortunately the child struggled a great deal, and as the father, who helped to hold it, was very nervous I had to desist after the first syringe. I saw the child again at 10 a.m. on April 5th. It was a little better, though still very ill; the pulse was still rapid and weak, the breathing still markedly stridulous. I now injected 2 drachms, using with antiseptic precautions an ordinary new 20 minim hypodermic syringe.

On April 6th, at 11 a.m., I saw the child again; it was decidedly better, the face of a fair colour, the breathing not