Dress carefully with iodoform, and pack round tube with

Fig. 2.—Blade for distended upper bowel. Blade for empty lower bowel. (For the drawings I am indebted to Dr. Baigent.)

wool, applying a suitable bandage to support the instrument. In from three to five days the ligatured peritoneal coat sloughs, when the whole apparatus must be removed and the faecal fistula dressed.

In cases of gangrenous inguinal or femoral hernia the operation is modified thus:

Fig. 3.

1. The sac is opened, and the gangrenous intestine exposed, cleansed, and drawn down till a healthy portion is reached.

2. A thick silk ligature is tied round both tubes and mesentery, and the diseased part beyond cut off.

3. The stump is cleansed, covered with iodoform gauze, and seized through the gauze with strong long clamp forceps such as are used in ovariectomy.

4. The forceps with enclosed stump are passed through the ring into the abdomen and projected from within at a convenient spot against the anterior abdominal wall.

Fig. 4.

5. A small opening is made over the forceps, which with the enclosed intestinal stump is passed through the opening in the abdominal wall.

6. The intestine is released, drawn out through the abdominal opening, the forceps drawn back, and the stages of the previously described operation gone through.

7. The sac may be quickly removed and ligatured at its neck in the hope of obtaining a radical cure of the hernia.

THE FALLACY OF THE VERTICAL FOOTPIECE.

By W. ARBUTHNOT LANE, M.S.,
Assistant Surgeon, Guy's Hospital.

It is curious that for such a number of years surgeons have thought fit to put up fractures of the lower extremity in splints with footpieces so placed in a vertical transverse plane that the inner margin of the foot, when attached to it, is vertical. I will now attempt to prove that nothing can be more unscientific or more fallacious than such treatment.

If one lies on one's back in an attitude of rest the thighs roll outwards and the hip-joints occupy the position of rest for this posture. It is, like all postures of rest, one in which the limb is retained in that position by ligamentous structures—in this case chiefly by the capsule of the hip-joint, no active contraction of muscles existing. It comes about very simply, since the weight of the leg bears such a relation to the hip-joint that when the muscles, by their active contraction, cease to retain the extended limb in any position, it at once rolls outwards until the movement of outward rotation is stopped, chiefly by the strain exerted by the oblique

fibres of the capsule of the hip-joint. The amount of rotation outwards is such that the inner margins of the feet include between them an angle of about 90 degrees, and if the pelvis be horizontally placed each margin forms with the vertical an angle of 45 degrees. Surgeons are not the only sinners in this respect, since one occasionally sees sculptors depicting a supine sleeping figure with the thighs so rotated that the inner margins of the feet are placed vertically and in apposition.

Having now shown what the position of rest of the thighs is in the supine posture, and the reason why that particular position is assumed, we will now pass on to observe experimentally, in the case of a solution of continuity of the segments of the leg, the results of placing the lower segment of the leg in a position of inward rotation through an angle of 45 degrees, while the upper segment is in the position of rest already described.

First, let us strip the muscles from the vicinity of the hip-joint posteriorly, and remove that portion of the capsule which covers in the back of this articulation. By means of a broad chisel or narrow saw divide the neck of the femur freely beneath the head in the position where intracapsular fracture so readily takes place in old people, because of the changes that the structure of this portion of the bone undergoes in old age.¹ If the thigh be left in the position of outward rotation into which it falls the cut surfaces remain in apposition, or the lower fragment of the neck presses forwards and slightly upwards against the front of the capsule, the variation depending on the amount of destruction of bone in making the section; the more the destruction the greater the rotation outwards. It is easy to see that this forward and upward displacement would be exaggerated in the living subject if the leg were allowed to rotate outwards, owing partly to the temporary active contraction of the muscles set up in the vicinity of the fracture, so that the diaphysial extremity of the neck is carried upwards and forwards away from the head, and comes into relation with the bone below the anterior inferior spinous process of the ilium.

If the thigh be rotated inwards till the inner margin of the foot becomes vertical, the lower fragment falls back upon the bone behind the acetabulum, and ceases to have any direct relationship with the head. In the living body this backward displacement would be associated with an upward one due to the temporary active contraction of the surrounding muscles.

Take another body, and by means of a saw or chisel divide the shaft of the femur more or less obliquely, and, fixing the upper fragment in the position of rest, rotate the lower segment of the limb inwards, through an angle of 45 degrees, and you will observe that the rotation produces a separation of the cut surfaces of bone, and a consequent shortening of the limb due to the winding up and alteration in the direction of the muscles surrounding the broken bone. This shortening of the muscles would in a recent fracture be much increased by hæmorrhage into and beneath the muscles. In the living subject this shortening is exaggerated by the temporary active contraction of the surrounding muscles which is set up by the presence of the fracture.

That shortening is not a necessary accompaniment of an oblique fracture of the femur is shown in Gowan's method of oblique section for knock-knee, where great care is taken that one segment of the femur is not rotated upon the other around a more or less vertical axis.

It is obvious that the lower the position of the fracture in the shaft of the femur, the greater the certainty of the upper fragment rotating outwards till it reaches the position of rest.

Again, excise the knee-joint and, fixing the thigh in a position of rest, rotate the leg and foot inwards till the inner margin of the foot becomes vertical, and then compare the relation to one other of the axes of the long bones of the leg, and you see at once that the relation of the side operated on is quite abnormal, and that it corresponds to the extent of the inward rotation of the lower segment.

Passing on to the leg below the knee, divide the tibia and

fibula obliquely at the same or different levels, and, retaining the thigh in a position of rest, rotate the foot and lower fragments inwards till the foot is vertical, and then examine the relation of the fragments to one another, when you will see the same conditions as have been already described in the case of the femur—namely, shortening, considerable gaping between fractured surfaces of bone, and in some cases the fragments will alternate so much in position that the four fragments must become ankylosed together. When the fractures are made transversely there is not the same displacement of the tibial surfaces off one another, but the lower fragment of the fibula is displaced forwards and inwards off the upper. Fractures of a certain obliquity forcing the foot into a vertical position may by the powerful leverage action of the broad cut surfaces of bone upon one another produce considerable inward rotation of the upper fragment and subsequently when the patient gets about the foot is found to be rotated considerably outwards.

Erase the ankle-joint by removing every particle of its synovial line by the method I described in a paper read before the Clinical Society in 1892,² by dividing the extensor and peronei tendons with the anterior and external lateral ligaments and displacing the foot inwards. Place the foot in such a position that its inner margin is vertically placed, and you observe at once that the outer malleolus no longer occupies its normal relation to the astragalus, but that it lies considerably behind it. If, therefore, after such an operation the foot be retained in this position, the mechanical arrangements of the ankle-joint are altered permanently, and to the considerable disadvantage of the patient. In the cases described in the paper just referred to, I divided the tendo Achillis as well as the peronei and extensors. Subsequent experience has shown me that this is unnecessary, and that the operation can be done quite as effectually without dividing it. As a matter of fact, in practice some of the deformity which ought to result from the vertical footpiece is sometimes obviated, partly by the foot slipping away from the vertical position, partly in some cases by the outward rotation of the upper segment of the limb being limited to some extent by the leg being slung, in the case of fractures of the tibia and fibula, and in fractures through the shaft of the femur to the upper part of the limb being fixed more or less firmly by bandages, etc., to the splint. In such cases a fairly good result is obtained in spite of the vertical footpiece. In a paper read recently before the Clinical Society, and entitled "A New Operation for Old Unreduced Dorsal Dislocation of the Hip-joint, with some Important Points in the Surgery of the Lower Extremity," I pointed out the importance of obtaining a firm joint in part of the transverse axis of pelvic rotation instead of an unsatisfactory one behind it, providing that bony union cannot be obtained between the fragments in the case of intracapsular fracture of the neck of the femur in the old subject. I have no doubt, however, that even in old subjects, bony or dense fibrous union of the opposing surfaces of bone will be obtained much more frequently when surgeons recognise the principles which should guide them in treating these fractures, for in the case of the young subject, where intracapsular fracture takes place through the growing line by retaining the bones in proper position, a good bony union can be obtained.

In this paper I have purposely avoided any reference to the varying angles formed with the vertical by the inner margin of the foot in positions of adduction and abduction, since they do not come into consideration during the occupation of the recumbent posture.

Mr. PYE-SMITH asked how far external rotation in the dorsal recumbent position depended on the weight of the femur as compared with that of the foot. If equally, Mr. Lane's advice applied to all cases of solution of continuity of the bones of the leg and thigh; but if the weight of the foot caused greater rotation than that of the femur, it would apply in modified degree only, and some angle less than 45° should then be provided for.

Mr. ARBUTHNOT LANE felt that it was useless to discuss the several forms of splints which he considered advisable

² Two cases illustrating a new operation by means of which the ankle-joint can be completely and thoroughly erased.

¹ "Causation and Pathology of the so-called Disease Rheumatoid Arthritis and of Senile Changes."—*Trans. Path. Soc.*, 1886, see p. 445. In that paper I pointed out, I believe for the first time, that the statements of the anatomists as to the neck of the femur yielding during old age were absolutely false, and I showed how the mistake had been made. This has been confirmed by subsequent observers.

when loss of continuity between several segments of the lower extremity was established, whether by injury or operation. What he considered necessary was that surgeons should be guided by definite and accurate scientific mechanical principles in the treatment they adopted. Surgeons were too often utterly devoid of principle; he did not mean that they were unprincipled in a moral but in a mechanical sense, and that they behaved as disciples rather than as scientific men following the methods of those who were their teachers, without troubling to analyse the mechanical principles, if any, upon which they were based. He could not agree with the President that the surgery of the hip-joint and its vicinity was satisfactory, since he considered that it was to a large extent wrong and empirical. Empiricism might be an important ally to medicine, but should not form part of the armament of the scientific surgeon. As regards any solution of continuity of segments of the lower extremity, he considered that the surfaces of bone must be kept parallel and in apposition by ensuring that the axis of the lower segment shall correspond accurately with that of the upper, and that the shortening consequent upon the hæmorrhage into and beneath muscles and upon the contraction of muscles resulting from the irritation of the fracture be met by extension, the latter being overcome within a few hours while the former takes many days to resolve.

THE APPLICABILITY OF THE PARTING TOOL OR ANGULAR GOUGE TO THE SURGERY OF THE SKULL.

By W. ARBUTHNOT LANE, M.S.,
Assistant Surgeon Guy's Hospital.

I HAVE for many years discarded the use of the trephine, as I consider it a clumsy and unsuitable instrument. Instead of it I have used gouges, and preferably those ground on their concavity, and with them I found that I could remove large pieces of bone with comparative rapidity. It occurred to me that an instrument with its sharp free margin, presenting the form of two sides of an equilateral triangle, if ground on its inner surface, would remove bone much more rapidly than the concave gouge; consequently I consulted Messrs. Down Brothers, and gathered from that that a precisely similar instrument was used in carpentry, and was called a parting tool.

They made me instruments of suitable temper, and I found that the results I obtained more than came up to my expectations, since I was able to remove areas of bone of any form without injury to the dura mater, and with great rapidity. I found it convenient to use two different gouges, so ground that one was more suited to the thicker dense skull of the adult, and the other to the less resistant skull of the child. At first sight one would imagine that there would be some risk in injuring the dura mater with the sharp angle of the instrument, but with the most ordinary care there does not appear to be any risk of doing so. Certainly, I believe that there is infinitely less risk to the dura mater in using the angular gouge than the trephine, and the mechanical advantages of the former over the latter only require a trial to demonstrate them.

Dr. DAVID NEWMAN said that for surgical operations on bone he had had an opportunity of using the instrument shown by Mr. Lane, but, as a boy, he remembered using exactly the same tool for working in wood, and for many purposes preferred it to a chisel or gouge. It was a tool to be found in every carpenter's chest, and was used in very much the same way as a gouge. On account of its angular form at the cutting edge the tool required less force to drive it along, and was, therefore, more completely under control than a gouge or chisel. To one who had not used it the instrument might seem dangerous, but he was certain that a little practice in its use was all that was required. They were indebted to Mr. Lane for transporting the parting tool from the carpenter's shop to the instrument case of the surgeon.

We understand that the accident to Prince Louis of Battenberg's eye at Elswick last week was trivial, and that he did not seek advice for it.

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

TWO ATTACKS OF SCARLATINA IN FOUR MONTHS.
DR. BARKER's case of a second attack of scarlatina in three months, recorded in the *BRITISH MEDICAL JOURNAL* of October 14th, tempts me to publish a precisely similar case which came under my notice in the early part of the present year.

C. W., aged 13, was attacked with scarlatina on March 13th. The illness was moderately severe, with all the cardinal symptoms of a well-marked case; she desquamated freely, and was well at the end of six weeks, when she went to the North. The only disinfection of the apartments she occupied during her illness consisted in abundant fumigation with sulphur; there was no whitewashing or repapering.

She returned from the North on May 8th, and occupied the same rooms as during her previous illness. These rooms were also daily frequented by other members of the family, consisting of six children, none of whom had had scarlatina, and none of whom took it. These were in the room daily, but did not sleep there as the other child did. On July 13th C. W. was attacked a second time; the illness was rather more severe if anything than on the previous occasion; there was slight transient albuminuria, which there had not been before, and the peeling was rather more copious. She recovered in six weeks.

The probabilities are that she took the second illness from some poison left undestroyed by the previous fumigation. Second attacks of measles within short intervals are not very uncommon; certainly I have seen more than one case in which a second attack has occurred within a twelvemonth, but in all the second illness seems to have been modified by the first, and was much less severe. In the case recorded above not only was the interval very short, but the immunity or resistance derived from the first attack appears to have been *nil*; indeed, the second was the more severe of the two.

CHARLES P. CHILDE, B.A., L.R.C.P.Lond., F.R.C.S.
Southsea.

IRON IN SEVERE DYSENTERY.

R. C., aged 19 years, three months in India, was admitted to hospital on May 8th, 1893, with enteric fever. The motions were irregular and costive, the bowels being moved only after castor-oil or enemata, which were required every three or four days. The stools were of the ordinary enteric character; the temperature showed a morning fall and an evening rise; the highest point reached was 105.6° F. He was convalescent on the twenty-ninth day. Four days later diarrhoea set in without fever, and lasted five days. He was then fairly well for a fortnight. At the end of June dysenteric diarrhoea began, and went on almost uncontrollably till the beginning of August. From June 29th to August 7th he had 1,001 stools, or an average of 25 every day, 45 being the greatest number in any one day. The majority of the stools contained blood. He was treated with ipecacuanha in various ways and amounts without any appreciable effect, also with salol, naphthaline, opium, bismuth, bael, hazeline, ergot, isphagoul, calcium chloride, iron, nux vomica, cannabis indica, perchloride of mercury and cold water and astringent enemata. The large cold enemata had a good effect for a short time, the other remedies had none, except the iron which began his cure; the nux vomica and cannabis indica completed it. He is now, in September, quite fat and well, though in July he was merely a living skeleton.

H. A. HAINES,
Station Hospital, Dalhousie. Surgeon-Captain A.M.S.

HOSPITAL SUNDAY.—At the close of the financial year on October 31st the Hospital Sunday collections in London this year amounted to £39,300, as against £41,500 in 1892.

The fifth Congress of Russian Medical Practitioners will be held in St. Petersburg from January 8th to the 16th. The municipality of the city has voted a subvention of 1,000 roubles towards the expenses of the Congress.