returned to the fingers. I used the galvanic battery for some weeks afterwards. At first, owing to the wasting of the anterior interossei, which are supplied by the ulnar nerve, when he attempted to straighten the fingers, the whole of the fingers went back behind the plane of the hand, as the root of the finger was not fixed as it should have been (Fig. 2) by the anterior interossei muscles.

Fig. 2.

The man is now quite well, the skin of the fingers is normal in thickness and temperature, he has perfect sensation, and can grasp firmly.

OPERATIVE TREATMENT OF SQUINT.

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À PROPOS to Mr. Snell's suggestion to divide the internal rectus from above, will you allow me to remind your readers that von Graefe always operated from above; a fact to which I called attention when lecturing on squint ten years ago in the following words: "von Graefe incises the conjunctiva over the insertion of the internal rectus, inserts a small hook along the upper border of the tendon—not the lower, as usually stated—and divides it with scissors close to the sclerotic." Whenever I saw von Graefe operate, Dr. Waldau, who

was like a third hand to him, always kept the eye everted with forceps during the whole process; von Graefe, however, exposed the tendon, and I gather Mr. Snell operates sub-conjunctivally. For my own part, I have for years operated from above, but in a somewhat

different fashion; I pinch up and incise the tissues just below the internal rectus, insert a small hook under the lower border of the tendon, cause its extremity to project beyond the upper border, and cut upon it, dividing the attachment to the sclerotic under the small bridge of conjunctiva which is allowed to remain.

The puncture and counter-puncture is an advantage, as it permits the escape of blood, and the upper border of the tendon, so apt to slip off the hook in the ordinary operation, is in this way certainly secured. I usually divide both recti, but prefer to have an interval between the operations. Children require ether or chloroform, but when cocaine is also used, a few whiffs of either anæsthetic suffice. There is one point I did not see mentioned during the discussion on squint, that is the limiting suture which is used in order to avoid over-correction; this should be inserted during anæsthesia, and afterwards tightened or withdrawn according to the after-effect of the operation. As a rule, children who squint do so because they cannot see unless they do; their eyes are so flat that many of them are obliged to make an effort to see even at a distance, and in some cases the maximum of accommodation has to be exerted in order to read. This cannot be done without convergence; convergence means squint; squint means double images, and double images are embarrassing, hence one eye soon comes to be used exclusively for working, and the other gets weak. I am aware that this doctrine of amblyopia from exclusion, weak sight of one eye from disuse, has been much discredited of late. Some surgeons even aver that it does not exist (Schweigger), but admitting that in certain cases weak sight of one eye is precedent to squint, I cannot doubt that in a large proportion it is a result of the deformity, if only from the marvellous improvement which I have seen follow total exclusion of the best eye, whether such exclusion has been the result of inflammation, accident, or intention on the part of the surgeon. An excellent means of compelling the weak eye to work is to paralyse the accommodation of the best eye for a time with atropine. Spectacles are usually required after operation, but will not suffice of themselves. The operator should aim at under, rather than over, correction, as immediate brilliant results are apt to be followed by divergence; and when this is the case, it may become necessary to divide one or both external recti, and perhaps also to secure temporary convergence by a new suture.

CASE OF LUMBAR SPINA BIFIDA; INJECTION OF MORTON'S IODO-GLYCERINE SOLUTION; CURE. A NEW INSTRUMENT FOR THE OPERATION.

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M. R., aged 3 months, a well-nourished infant, was brought to me in June, 1887, for treatment of a lumbar spina bifida, the size of a small hen's egg. It was perfectly round in shape, and the central part was more translucent than the rest, and of a pinkish bluish tint. There was no club-foot nor any other deformity.

On June 10th I performed Morton's operation, Mr. A. H. Baines, of Birkdale, very kindly assisting me. The lower part of the sac was punctured on the right side; the instrument used was a small trocar and cannula. A considerable quantity of pale straw-coloured fluid escaped when the trocar was withdrawn. The tumour had collapsed to about half its original size before half a drachm of Dr. Morton's iodo-glycerine solution could be injected. The opening was sealed with collodion on salicylic wool, and over this a sublimate wood-wool pad, fixed by a broad flannel bandage, was applied. Within five minutes after the puncture had been made, the child became extremely pale. A feeble, fluttering pulse, sighing respiration, and an occasional low, moaning cry, with icy coldness of the extremities and inability to take the mother's breast, were noted, and lasted for fully two hours, and only gradually disappeared with the application of warmth to the surface, and the frequent administration of brandy in half-teaspoonful doses.

On June 11th the pulse and temperature were normal. The child was well, but very sleepy. The antiseptic dressing was changed, and found partly soaked with iodine-stained fluid, which had continued to escape through the puncture. A fresh antiseptic dressing was applied as before.

On June 18th, the first operation having evidently made no impression whatever on the tumour, which was of exactly the same size and appearance as before, a second puncture was made. The instrument employed was one constructed on the model of an ordinary German hypodermic syringe, but larger and graduated for half drachms, with the smallest of its three needles corresponding in size to a large sized hypodermic needle, and with a metal top screwed to the glass barrel

of the syringe, so that the latter could be easily charged with the iodo-glycerine solution. With the medium-sized needle of this instrument I punctured the lower part of the right half of the tumour, and without previously drawing off any of the contents of the sac, in-

Fig.

jected about half a drachm of Dr. Morton's iodo-glycerine solution. The child cried a little, but no fluid escaped; the opening was easily and effectually sealed, and not the slightest symptoms of shock resulted.

Fig

On June 20th the child was very well and hearty. The tumour was red, and the skin over the right side corrugated; two days later a distinct hardness could be felt on the right side of the spina bifida the central area of translucency disappearing, and the entire mass was smaller.

On June 26th another puncture was made (with the new instrument) on the left side, but all the inside of the sac here was found to be solidified, so that no more iodo-glycerine solution would pass into it by injection. The tumour was greatly diminished in size, the right half being more shrunken than the left.

On August 1st the child was well; the spina bifida had entirely disappeared, and its place was taken by a firm, leathery, keloid-like, shrunken, solid mass of tissue, with distinct depressions at the points where the punctures were made. By November 1st this mass had undergone further shrinking and diminution in size. Fig. 2 shows the condition at this date.

The grave symptoms of shock following the first, and their absence after the second operation, bring up the question of the kind of instrument employed. The large escape of cerebro-spinal fluid which occurred when the trocar and cannula were used, and which undoubtedly gave rise to the symptoms mentioned, led me to discard these instruments at the second operation. My operating syringe, as above described, was made by Messrs. Wood, of Church Street, Liverpool.

CLINICAL MEMORANDA.

PNEUMATURIA.

In the *BRITISH MEDICAL JOURNAL* (vol. i, p. 39, 1884), a letter by Dr. H. Philpot appeared, inquiring whether it is possible that, during the formation of acetone from the decomposition of aceto-acetic acid, or ethyl diacetate, in the urine of diabetic patients, a gas might not be formed which would account for that rare phenomenon, pneumaturia. An editorial note appended to this letter considered the suggestion plausible, but went on to say that pneumaturia, when it occurs, seems to be parallel to those cases of extreme flatulent distension which we sometimes meet with in hysterical and hypochondriacal patients.

Having somewhat recently met with an instance of well marked pneumaturia, I think it advisable to put on record the facts, as far as I was able to observe them, since such cases are extremely rare. The facts are as follows. A middle-aged man had been attending some weeks as an out-patient at the London Hospital for heart disease (aortic stenosis and regurgitation); his urine was examined on several occasions, and nothing abnormal was detected. As he was becoming very weak, he was made an in-patient; and, shortly after admission, it was noticed that he was rambling slightly, and was very drowsy. On the day of my seeing him, my clinical clerk (Mr. St. John) had examined, about an hour before the visit, the patient's urine, freshly passed, and noted the specific gravity at 1024, and that it contained sugar. On my examining the same sample, rather more than an hour afterwards, I found the specific gravity 1040, and the urine, when agitated, yielding bubbles of gas. After each agitation, the urinometer was forced up a few degrees. The urine contained, on a rough estimation, about 3 per cent. of sugar. The urine was then poured from one urine glass to another, when the disengagement of the gas was so great as to force the index of the urinometer quite above the fluid, even exposing the upper surface of the bulb. Unfortunately, I had no appliances ready in the ward for collecting and testing the nature of the gas; but I directed that, if he passed a similar urine again, I should be made acquainted, when I intended making a full investigation. However, the phenomenon was not again observed, and in a day or so the urine became quite free from sugar, and the comatose symptoms disappeared. It is possible in this case that the excitement and worry of leaving home, and the despondency caused by the advancing character of the heart affection, may have caused acute diabetes, whilst the drowsiness and slight delirium may have been a threatening of diabetic coma. Under such circumstances, the urine may have contained large quantities of acetone, which, undergoing decomposition, yielded large quantities of carbonic acid. With regard to this, the only doubt that occurs to me is: Would the decomposition take place so rapidly as it evidently did? On the other hand, supposing the sugar and the nervous symptoms to have been developed by a highly neurotic subject, labouring under hysterical emotion, might not a large quantity of carbonic acid gas have rapidly diffused out of the blood into the urine, just as we know it does into the intestines in cases of phantom tumour and in some cases of extreme flatulent distension? In this case its rapid disengagement would be accounted for