knife into the brain for about half an inch, when it entered an abscess cavity and pus at once escaped. On further dilating the opening with a pair of sinus forceps the pus was forcibly ejected. A drainage tube was inserted and the abscess cavity thoroughly cleansed by syringing with warm boracic lotion. The flap was sutured and the drainage tube brought to the surface through an opening made in the middle of the flap. Three ounces of pus were collected and fully half an ounce of pus was lost, so that the abscess contained three and a-half ounces.

The immediate effect of the operation was very marked. The pulse, which before operation was 48, rose to 72, and the respiration, which before operation was 8, rose to 28. Two weeks later I opened the mastoid antrum and removed from it some unhealthy granulation tissue. From the date of opening the temporo-sphenoidal abscess, now a year ago, the child made an uninterrupted recovery and has remained perfectly well ever since.

CEREBELLAR ABSCESS.

The third case was that of a boy aged 11, who was admitted into the infirmary on June 2nd, 1894. His previous history, so far as we could obtain it, was the following. There had been a discharge from his right ear for the last three weeks, but he had attended school regularly until within a few days, when he complained of headache, and frequently vomited. He had no fits or shivering attacks. On admission he was emaciated, very dirty, looked extremely ill, and complained of frontal headache. There was an offensive discharge from the right ear, and a painful swelling over the right mastoid region. His temperature was 100°. There was double optic neuritis. I made a vertical incision over the mastoid process, and opened a subperiosteal abscess. During the next few days his general condition was worse rather than better. The temperature varied from 98° to 100°; the pulse varied from 80 to 90, and was irregular.

Fig. 2.—Case III: Cerebellar abscess with extradural abscess over sigmoid sinus.

There was swelling and tenderness on the upper part of the neck corresponding to the line of the internal jugular vein. His frontal headache persisted. We again put him under chloroform, with the view of opening the mastoid antrum

and exposing the sigmoid portion of the lateral sinus. The mastoid antrum was full of offensive granulation tissue, and on further removing bone in order to expose the sigmoid sinus, I opened an extradural abscess on the sinus, about a drachm of thick non-offensive pus escaping. The sinus, covered with granulation tissue, was collapsed, and appeared to be thrombosed. I did not open it. The boy was not materially relieved by operation; in fact, two days afterwards was markedly worse, though the swelling in the neck was rapidly subsiding. He still had constant frontal headache, and vomited occasionally. His respirations were sighing, and the pulse varied from 40 to 60 a minute, and was irregular. He had no paralysis of the face or limbs, neither was there any ocular paralysis, and his pupils were equal. There was no aphasia, motor or sensory. The optic neuritis was more marked. The temperature was 97° F. It was obvious he was suffering from some grave cerebral affection consequent upon middle-ear disease, most probably an abscess either of the temporo-sphenoidal lobe or of the right lateral lobe of the cerebellum. As the evidence pointed strongly in favour of the latter, I decided to explore the cerebellum. Mr. Hugh E. Jones kindly saw the boy with me, and agreed as to the diagnosis. I exposed the cerebellum by nibbling away the bone from the seat of my former incision. The dura mater bulged, but did not pulsate. On incising the dura, the brain protruded, and by passing a director into the cerebellum in a direction forwards and inwards I opened an abscess, 4 to 6 drachms of sweet pus escaping. The abscess cavity was well washed out through a drainage tube, and the tube brought to the surface through an opening made in the middle of the flap, as in the previous case. His pulse, which previous to operation was 20 beats per minute, rose directly after operation to 100 per minute, and his temperature, which before operation was 97°, rose to 99.6°.

The operation was performed on June 25th, 1894, and since then he has steadily improved. He attends school regularly and enjoys excellent health.

The chief interest in the first case is the apparently complete and permanent recovery. In the second case the symptoms were typical of the lesion, though it is unusual for a cerebral abscess to follow an acute otorrhoea. It also shows the remarkable cerebral capacity in childhood, for the abscess was an unusually large one. The third case was a complicated one, as abscess of the cerebellum consequent upon middle-ear disease usually is. The diagnosis was arrived at chiefly on anatomical grounds, the sigmoid groove being diseased, and from the absence of definite symptoms of a lesion of the temporo-sphenoidal lobe. The sighing respiration is also noteworthy.

I am glad of this opportunity to express my indebtedness to Dr. Macewen for his very clear exposition of this branch of surgery, for what little I know of intracranial lesions consequent upon middle-ear disease has been derived from a study of his works.

A CASE OF RIGHT HEMIPLEGIA WITH EPILEPSY, TREATED BY TREPHINING.

USE OF HAND, ARM, AND LEG RESTORED, AND NO RETURN OF
FITS AFTER OPERATION.

BY

T. OUTTERSON WOOD,	and	EDWARD COTTERELL,
M.D., M.R.C.P.,		F.R.C.S.,
Honorary Physician to West		Honorary Surgeon to the West
End Hospital for Nervous		End Hospital for Nervous
Diseases, Welbeck Street, W.		Diseases, Welbeck Street, W.

DESCRIPTION OF THE CASE BY DR. OUTTERSON WOOD.

M. P., a girl, aged 3 years and 3 months, was admitted into the West End Hospital for Nervous Diseases, Epilepsy, and Paralysis, on January 1st, 1894, suffering from weakness and inability to use her right hand, arm, and leg. There was also a history of epileptic attacks. In other respects she was a well-nourished, healthy-looking child, bright, intelligent, and cheerful.

The previous history showed that when she was born the labour was easy, natural, and free from complication; that she had been perfectly well from birth until she was 1 year of age, and in every respect healthy and vigorous. She then

fell from the top of a hayrick, and, although the fall was from a considerable height, she soon recovered from the shock, and there was no further injury apparent at the time. In the course of a few weeks, however, she had what appears to have been an epileptic seizure. She suddenly fell down and became unconscious, and the mother immediately noticed she could not move her right arm and leg. The face was not affected.

In July, 1892, she had two slight epileptic seizures, and again in July, 1893 (six months prior to her admission), she had several seizures, but these were not followed by any appreciable difference in the hemiplegia.

In the fits the convulsive movements always commenced in the right thumb and fingers, and she became quite unconscious. There was nothing further to note with regard to the previous history, and the family history was good. On examining the head it was found that the left supraparietal region was distinctly flattened, and sloping straight away from the vertex, the parietal eminence appearing to be pushed down and becoming more abruptly prominent than on the opposite side. A vertical section through the parietal eminences, viewed from behind, would be represented as in the engraving. There was no evidence of facial paralysis;

the eyes were normal, there were no fundus changes and no ocular paralysis; the left pupil was very slightly larger than the right, and both acted well to light and accommodation.

The right arm was a quarter of an inch shorter than the left, was cold and bluish-red in colour, the movements being confined to flexion at the elbow-joint, necessarily limited by the general rigidity of the limb. The thumb was held across the palm of the hand, and, like the fingers and wrist, remained strongly flexed. The leg was rigid, the foot inverted, and the child could only walk, and that with great difficulty, by holding on to something.

The flattening of the skull over the motor region of the cortex corresponding to the right arm and leg centres, the condition of the right hand, and the fact that the epileptic seizures always commenced in the thumb and fingers, led me to the conclusion that the symptoms were probably due to some irritating lesion affecting the cortex, probably the result of an injury caused by the fall from the hayrick. I therefore asked my colleague, Mr. Cotterell, to see the case, with the view of removing by operation any focus of irritation, and thus arrest the tendency to epilepsy and restore power to the limbs. Certainly the result has been so far exceedingly satisfactory, the hand and arm are freely used, and now, eleven months after the operation, the patient can run about as well as most children, without limping; nor has there been any return of the epileptic seizures.

DESCRIPTION OF THE OPERATION BY MR. COTTERELL.

In January, 1894, I saw this case, in consultation with Dr. Outterson Wood, and found the condition as he has described it. The flattening of the left upper parietal region was very marked, especially when viewed from behind. We determined that it would be the best thing to explore the flattened region, and to be guided then by what was found as to any further operative measures.

Accordingly, on February 2nd, the scalp having been rendered thoroughly aseptic, the child was anaesthetised and a semicircular flap 4 inches long was reflected up, from the left parietal region. The periosteum was raised over an area of about 2 inches, the centre of which corresponded to the middle of the flattened region. A trephine having a diameter of $\frac{3}{4}$ -inch was applied to a point on the skull corresponding to the middle of the fissure of Rolando and the disc of bone removed. This opening was enlarged with cutting forceps. The dura mater was opened, and directly underneath there appeared a small cyst filled with serous fluid, situated apparently under, or between the layers of, the arachnoid. The dura mater was somewhat

thickened over the cyst and adherent in places. The adhesions were separated and two pieces of the external wall of the cyst were removed. The dura mater was stitched up except at the lower angle, a catgut drain inserted, and the wound closed.

The child was collapsed after the operation, but quickly rallied. The after history of the wound presents nothing worthy of note, as it all healed up by first intention, except the track of the drain. A large amount of cerebro-spinal fluid escaped, rendering dressing of the wound necessary twice a day for the first three or four days. The wound was completely healed by February 11th.

After the operation the child rapidly improved, in spite of attacks of whooping cough and chicken-pox. Dr. Guthrie Blandford, our late house-surgeon, to whom I am indebted for the great care and attention which he bestowed upon this case, notes that on March 17th, 1894, that is, about six weeks after the operation, "the child can now walk without support. The hand can be opened spontaneously; no fits since operation." The improvement has steadily continued, and at the present time very little remains of the hemiplegic condition from which she suffered.

The situation of the cyst corresponded to the arm and leg centres, and it was doubtless the cause of the hemiplegia and of the epileptic convulsions. The exact nature of the cyst I am unable accurately to determine, but I am inclined to think that it was the result of hæmorrhage, probably, into the subdural space. We know that in these cases the coagulated blood in the course of time becomes completely de-colourised and forms a thin membrane-like layer of tissue, which encloses a cavity containing serous fluid. As far as I can learn, I believe that this condition has been found very rarely during operation.

FLAP OPERATING IN LAMINECTOMY AND SUBCUTANEOUS CYSTS.

By C. H. GOLDING-BIRD, F.R.C.S.,
Surgeon to Guy's Hospital.

THE eulogium pronounced by Professor Chiene in the *BRITISH MEDICAL JOURNAL*, October 4th, 1894, on the flap method of operation, will draw the attention of all surgeons to its wide application and advantages. I add now to his list two other operations in which the flap will be found preferable to the linear incision:

1. In operating upon the spinal column, whether for disease or traumatism. The linear vertical incision, though it unites at first, may under the pressure of the spinous processes, as the patient lies in bed, break down, especially where, in a traumatic case, there has been much bruising. Such an accident has occurred in my own practice. Lately operating for fractured spine on two adults, both in the dorsal region, I made a horseshoe flap with the convexity upwards, and crossing the middle line between two vertebral spines, well above the area of injury. The sides of the flap were prolonged downwards, parallel to the spine, as far as requisite. In both cases primary and sound union followed; there was no pressure on the scar, since it only crossed the middle line of the spine once; and then between the prominences of two vertebra.

2. In operating on subcutaneous cysts generally, and on enlarged bursa patellæ especially.

In the latter, a horseshoe flap is made, crossing the middle line just above the patella, and prolonged downwards by two parallel lines on either side of it, as far as necessary. The flap is reflected downwards. The scar is thus completely out of the way of all pressure. A further advantage in these cases, as in subcutaneous cysts generally, is that the cyst is first attacked below its summit, at a spot where there is always a good thickness of subcutaneous tissue; there is therefore less liability of injuring the cyst than when a vertical incision is made over its summit, where the skin is often closely applied to it. More room is also obtained, and the manipulations being freer, the operation is more rapidly performed.