central region; in the left eye sight remains in a larger central region. In each eye there is a peripheral loss. [That is, the peripheral loss is greater on the opposite side.] The significance of this is that the vision that remains is subserved by the right higher centre acting alone. This subserves a large central region on the opposite side, a small central region on the same side, but without the coöperation of the opposite centre it cannot subserve peripheral vision in either eye."

Here, then, we have a case of injury to the skull in which there existed a depressed spot, painful on pressure, the pressure being followed by tremors and loss of vision, symptoms which were already familiar to the patient as preceding a fit. This painful spot is found on operation to correspond to a tongue of cicatricial tissue which tied the scalp to the meninges at a point which was ascertained by surface measurements to correspond nearly to the region of the right angular convolution. The charts of the fields of vision which are appended show a diminution of the peripheral area of both fields, this diminution being greater on the left or side opposite to the lesion. Some time ago the secretaries of the Ophthalmological Society of the United Kingdom invited evidence upon this subject and in response to this invitation I have ventured to record this case at length in the hope that in other and abler hands than mine it may help to remove some of the doubts which surround this obscure but interesting subject.

Wellington, New Zealand.

TRAUMATIC ANEURYSM OF THE AXILLA TREATED BY FREE INCISION AND BY LIGATURE OF THE AXILLARY VEIN AND SUBSCAPULAR ARTERY; RECOVERY.

By NATHAN RAW, M.D., B.S. DURH., F.R.C.S. EDIN.,
MEDICAL SUPERINTENDENT, MILL ROAD INFIRMARY, LIVERPOOL.

A TRAUMATIC aneurysm is a blood tumour placed upon or around a wounded artery and having direct communication with the blood-stream. It is an extremely rare condition and in the case of the axilla is usually caused by some violence in attempting to reduce a dislocation of the shoulder by that pernicious habit of placing the heel in the axilla. I can only find one case of successful treatment and that was recorded by Syme of Edinburgh in 1868, so that the following case is of great interest.

A fairly strong and well-nourished married woman, 45 years of age, fell down on Oct. 1st, 1898, and dislocated her left shoulder. She had it reduced on the next day and she continued in attendance at a hospital for five weeks. At the end of that time the surgeon thought it necessary to manipulate the arm, which he did by placing the patient on her back on the floor and by placing his heel in the axilla. She experienced great pain afterwards and noticed that the arm began to swell on the same night. The pain became excessive and she had complete loss of power and sensation in the limb, so she was sent to the Mill-road Infirmary.

On admission to the infirmary on Nov. 15th she was in a serious state. The left arm was red and oedematous and there was a large swelling in the axilla evidently securely bound down by the axillary fascia. There was also almost complete motor and sensory paralysis of the whole of the arm but more especially referable to the area supplied by the inner cord of the brachial plexus. There was slight but diminished pulsation in both radial and ulnar arteries. Taking into account the sudden onset and the gradual accumulation of the symptoms I diagnosed a rupture of the axillary vein which was causing pressure on the main nerve-trunks—in fact a pressure neuritis. I had no intention of operating but was content to await the further development of symptoms. In the course of a few days the swelling in the axilla increased, the patient could not adduct the arm, and there was great pain with total diminution of the radial and ulnar pulses showing that the hæmorrhage was increasing. I explained the serious nature of the case to the patient and she left herself unreservedly in my hands to perform amputation at the shoulder-joint if necessary. The swelling progressed until it burst through the skin on Dec. 2nd with serious

loss of blood. I was now confronted with a serious dilemma. If operation was not performed the patient would soon die from hæmorrhage and as ligature of the subclavian artery was of no use owing to the rupture of the vein there was nothing for it but to lay the whole aneurysm open from end to end and to trust to circumstances to secure the bleeding vessels. On Dec. 4th she was in a critical state and I asked Professor Mitchell Banks to see the patient with me. After careful examination he agreed that the only chance of saving her life was to open the aneurysm and if necessary to amputate at the shoulder-joint.

Under ether, with the kind assistance and advice of Professor Banks, I made an incision commencing on the clavicle and extending down the front of the chest to the anterior fold of the axilla (see illustration), completely

Traumatic aneurysm of axilla, showing dotted line of the operation incision. (Dr. Nathan Raw.)

dividing the pectoralis major and pectoralis minor muscles. I ligatured one or two small vessels and then isolated the axillary artery and vein immediately under the clavicle, placing a temporary ligature on the artery and tying the vein. I then made a rapid incision in the tumour completely through the axilla down the inner side of the arm to the elbow, the incision being 21 inches in length. Several pounds of blood-clot which had burrowed in all directions, even to the back of the scapula, were turned out. The axillary vein was torn completely across and was ligatured at both ends. Arterial blood was seen to be flowing, and on careful examination the subscapular artery was seen to be cut across at about one inch from the main trunk. The bleeding was from the distal end which was ligatured. I then removed the temporary ligature from the first portion of the axillary artery which was followed by redness and warmth in the arm but no pulsation in the radial, showing the main trunk to be blocked. I stitched the pectoral muscles together, sutured the long wound, put drainage-tubes right through the axilla and the arm, and had the patient put to bed. She had borne the operation well and she soon rallied. With the exception of a little suppuration, which was to be expected from the low vitality of the parts and the pressure of broken-down clots, she made an excellent recovery and was discharged on March 14th, 1899. She has been frequently examined as an out-patient since, and is now, six months after the operation, in excellent health and with a fairly useful limb.

I am indebted to Mr. John Hay for the diagram and also for his great care in the after-treatment of the case.

Since the above paper was written the patient has been thoroughly examined. There is now (June 7th, 1899), pulsation in the radial artery and to a slight extent in the ulnar artery. The paralysis has passed away with the exception of the parts supplied by the ulnar and internal cutaneous nerves. There is useful movement in all directions and she is able to dress herself.

Liverpool.