

subject, says it is well known to anatomists that the hemorrhage, in the vast majority of cases, proceeds from the septum nares, supplied by a branch of the superior coronary, given off from the facial. It enters the nose just below the alæ nasi, crossing the superior maxillary bone at that point.

Firm pressure over this point is the treatment. Both these plans may be adopted simultaneously.

SURGERY OF THE BRAIN—BASED ON THE PRINCIPLES OF CEREBRAL LOCALIZATION.*

By ROSWELL PARK, A. M., M. D., Professor of Surgery, Medical Department, University of Buffalo.

The purposes of this discussion and the division of labor between the essayists of the evening have made it necessary that the following remarks should be confined, as strictly as circumstances may permit, to a consideration of the essentially surgical aspects of the general topic of cerebral localization. To this end I prefer to restrict myself in the main to the surgery of cerebral abscess and to that of intracranial tumor. These are mainly chronic lesions, whose symptoms and signs are to be recognized by the principles already so ably rehearsed by Professor Mills. Indeed, I wish to be excused from considering, except in a casual way, operations for relief of recent hemorrhage, a surgical field in which numerous brilliant results have been of late obtained, as well as those for epilepsy of traumatic origin, except so far as they are caused by abscesses or tumor, and those in which the operation is indicated by a study of the subjective rather than of the objective features; furthermore, I must also omit all immediate operations for gunshot or penetrating wounds of the cranium; unless they, too, come under the proper category.

Operations are taken upon the skull, as they are upon the abdomen, either for exploratory purposes or for relief of a recognized lesion. There is a rapidly growing tendency in favor of exploratory operations in each locality, and, as our technique improves, our confidence in their efficiency and safety becomes strengthened. There was a time when laparotomy for diagnosis was considered quite unjustifiable; now it is

often our duty to perform it. There was a time when the operation of trephining had a mortality rate considerably over 40 per cent.; now in proper hands it has fallen below 3 per cent. Surely many others can say, as can the writer, that they have never lost a patient as the result of this operation. This means really a great deal. Indeed, it is easily susceptible of demonstration that exploratory trephining is the safer of the two. Patients have died immediately after the puncture of the liver or the lung by the aspirating needle, but after similar puncture of the brain perhaps never.* These and other considerations induce one, then, by precept as by practice, to encourage in every legitimate way the early resort to exploratory trephining.

In the preparation of that which follows, the writer has not hesitated to avail himself of the labors and studies of others, and freely acknowledges his indebtedness to the work of Dr. Ferrier, as well as to the writings of those masters of cerebral surgery, Professors Bergmann, MacEwen and Horsley, and indeed to every essay upon the subject which he could utilize.

Cerebral Topographical Anatomy.

Here, as elsewhere, our surgical procedures must be guided by accurate anatomical data, and consequently, following the natural order, we must first consider so much of the regional and surgical anatomy of the cranium as concerns present purposes. In other words, we may properly look to the neurologist to make the diagnosis, but with equal propriety he may expect from us the ability to find the lesion. Not much less astonishing than the discovery of the planet Neptune at the spot determined by the computations of Le Verrier was the first discovery of a cerebral lesion at exactly the point indicated by a careful study of somatic disturbances; both were wonderful examples of inductive reasoning.

The areas which most concern the surgeon in this kind of work are those which cluster along the fissure of Rolando, and the proper determination of the locality of this fissure is to the surgeon what the long baseline is to the geodetic surveyor. Various rules have been laid down by which the

*Since this was written the writer has seen Weir's recently published statement ("Am. Jour. of the Med. Sci.," September, 1888, p. 229) that he has twice seen death follow the introduction of needles into the brain, though to what depth he does not state, nor does he give the size of the needles. (Vide below.)

*Read before the Congress of American Physicians and Surgeons at its first triennial meeting, Washington, September 19, 1888.