Reprinted from PROCEEDINGS OF THE ASSOCIATION OF AMERICAN ANATOMISTS, Eighth Annual Session, held in Philadelphia, Pa., December 27 and 28, 1895. Pages 69–73.

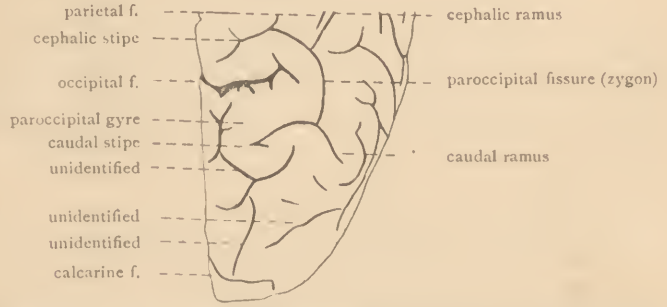
THE PAROCCIPITAL FISSURE: SHOULD IT BE RECOGNIZED AND SO DESIGNATED?

BY PROFESSOR B. G. WILDER, CORNELL UNIVERSITY.

[The paper was illustrated by specimens and photographs.]

Synopsis.—Nearly ten years ago (*Jour. Nerv. and Ment. Dis.*, June, 1886), the speaker suggested that the occipital portion of the long fissure called "intraparietal" by Turner, "interparietal" by Ecker, and "parietal" by Pansch, be regarded as a distinct fissural integer under the title *paroccipital*, referring to its constant and marked relation to the dorsal end of the occipital (parieto-occipital). The U-shaped area between the two (*pli de passage supérieure*, first annectent, etc.) he proposed to call the paroccipital gyrus. (See Figs. 1 and 2).

FIG. 1.



Dorso-caudal aspect of the right occipital lobe of a child at birth, 478; × 1. It exhibits a perfect and typical paroccipital fissure, very symmetric, and completely independent of the parietal, although its cephalic ramus and the parietal overlap and approach very closely. See Reference Handbook of Medical Sciences, Vol. VIII, 1889, p. 155, fig. 4774.

The grounds for the suggestion were stated later in the "Reference Handbook of the Medical Sciences," VIII, 155, as follows:

(1) In about half the adult hemicerebrums examined by the writer there are two fissures separated by an isthmus of greater or less width; (2) when the two are continuous there is almost always a vadum (shallow) at the point corresponding to the isthmus; (3) each of the two portions, whether separate or continuous, is usually deepest at or near its middle; (4) at their first appearance in the fetus they are always completely independent. The division is recognized by C. L. Dana (*New York*

Medical Record, Jan. 12, 1889, and *Jour. of Nerv. and Ment. Dis.*, March, 1894), but is thought needless by Cunningham ("Surface Anatomy of the Cerebrum," p. 219) and Kükenthal und Ziehen (*Jenaische Zeitschrift*, XXIV, 1895), and it is not sanctioned by the German Committee on Anatomic Nomenclature.

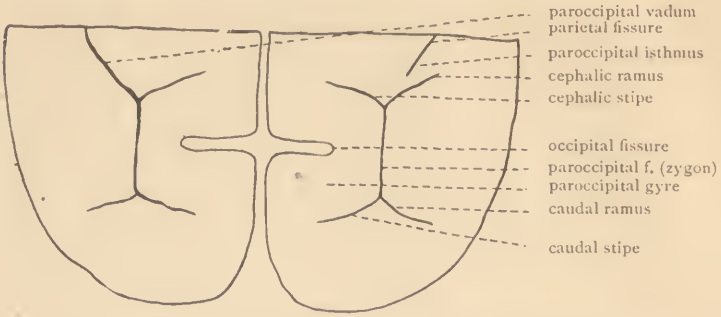


FIG. 2. DIAGRAM OF THE RIGHT AND LEFT PAROCCIPITAL FISSURES.

This is based upon the mode of development and upon the conditions observed in five out of eight moral and educated persons. The earliest and deepest portion is the zygon, a furrow opposite the dorsal outcrop of the occipital fissure. Extensions meso-cephalad and meso-caudad constitute the cephalic and caudal stipes. Similar extensions laterad, the rami. The completed fissure is a typical example of the zygal or yoked fissures. On the right either the cephalic stipe or the ramus is commonly overlapped by the caudal end of the parietal ("intraparietal"), the intervening area constituting the paroccipital isthmus. On the left a junction commonly occurs, but at that point is so frequently found a vadum or shallow place that on the diagram the continuous fissure is there narrowed a little.

The present paper was intended to embrace a review of all accessible literature, a study of the materials accumulated by the speaker in the interval, a consideration of the value in this connection of the conditions of the parts in apes and monkeys, and positive answers to the queries propounded in the title. In the time at his disposal he has been unable to accomplish these things to his satisfaction. He still thinks that on practical grounds the fissure should be recognized and called the paroccipital or the paroccipital division of a "fissural complex."

The speaker asked the cöoperation of the other members of the Association and of anatomists elsewhere, in obtaining fuller statistics, and proposed to issue a circular and blank form. Photographs and drawings of the region should be taken from the dorso-caudal aspect, as if aimed directly at the outcrop of the occipital fissure. Where, as commonly on the left, the paroccipital joins the parietal, the depth at that point should be determined. Particularly desirable are the records of moral and educated persons on the one hand, and of unborn apes and monkeys on the other.

THE CEREBRAL FISSURES OF TWO PHILOSOPHERS.

By Professor B. G. Wilder, Cornell University.

[The paper was illustrated by specimens and photographs.]

Synopsis. The men referred to are Chauncey Wright, of Cambridge, a philosophic writer and a critic and mathematician, and James Edward Oliver, Professor of Mathematics in Cornell University. The former's brain has been already partly described by Professor Dwight, (*Amer. Acad. Arts and Sciences, Proc., XIII*, 1877, 210–215,) and the writer (*Jour. Nerv. and Ment. Dis., XVII*, 753–754; *Amer. Neurol. Trans.*, 1890; "Ref. Handbook Med. Sciences," VIII, 158–159, IX, 108; *Jour. Comp. Neurology*, V, July, 1895, 124–125). In the last named paper Oliver's brain is also mentioned. On the present occasion one half of each cerebrum is shown, together with forty photographs of different aspects, direct and oblique, about natural size. One of the reasons for delay in publishing a fuller account of Wright's brain has been a doubt as to the number and names of the fissures, and it is hoped that aid in this respect may be gained at this meeting.

Dr. Dwight said: I have been much interested in Dr. Wilder's paper, and it has been a great gratification to me to loan him the brain. As to the interruption of the central fissures, at the time I described it I could only find four cases in literature, but since then it has been observed several times.

Dr. Wilder said: There is a difference between right and left. As was noted by Ecker (1869), Cunningham (1892) and myself (1886), the complete interruption constituting the paroccipital isthmus occurs more frequently on the right side. In eight brains of moral and educated persons, the isthmus is complete on the right in six, and on the left in only one. When all classes are included, of the twenty-six complete interruptions, twenty-one are right and only five left. Occasionally there is an isthmus on both sides or a vadum on both sides. The most common combination is of an isthmus on the right side with a vadum on the left. This condition is exhibited in the diagram (Fig. 2), and exists in Chauncey Wright, but with complications (Fig. 3). The only case of reversal of this condition known to me, *viz.*, a left isthmus with a right vadum, exists in an insane Swiss, No. 2964 of the Cornell Museum of Vertebrates. I regard the difference between the two sides of the cerebrum as notable

and worthy of further observation, but have as yet no explanation to offer.*

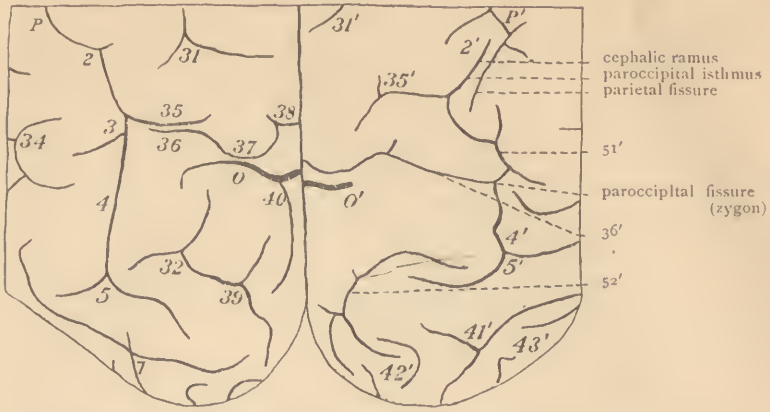


FIG. 3. THE PAROCCIPITAL FISSURES, ETC., IN THE BRAIN OF CHAUNCEY WRIGHT.

On the left the numbers correspond to those upon representations of the lateral and dorso-lateral aspects in the "Reference Handbook of the Medical Sciences;" VIII, Fig. 4779, and IX, Fig. 63. On the right, homologous parts are designated by the same numbers, with the addition of prime. O and O', the occipital fissures, the left apparently extending farther laterad, but its depth has not been ascertained. P and P', the parietal fissures; the left joins the cephalic ramus of the paroccipital at 2, where there is a vadum. On the right the isthmus is narrow and slightly depressed. The fissure marked 36, 37, 38 and 36' is somewhat deep and may perhaps represent the preparoccipital. On both sides it is separated from the occipital by a depressed isthmus, and on the left by a scarcely visible vadum from the cephalic stipe of the paroccipital (35). On the whole this region is complex in this brain, and illustrates well the difficulties of interpreting the adult conditions in the light of development.

DR. WILDER said: Dr. Baker is probably right in saying that we may not determine anything physiologic, except in the most general way, from the study of fissures and gyres. Whether so or not, that is not my personal object. What I seek to determine is the fissural pattern of the normal, educated and moral white man of America for the purpose of having a standard with which to compare the abnormal brains of human beings and those of "our poor relations," the apes and the monkeys. At present we have no such standard, but I hope before I die to ascertain the human fissural pattern. I shall be quite content to leave the other more important and more fascinating questions which are connected with the physical, physiologic and psychologic correlations of the cerebrum to others like Dr. Baker, who are better capable of elucidating them.

* The results of the later tabulation of the conditions in 58 adults were presented to the American Neurological Association, June 3, 1896; an abstract will appear in the *Journal of Nervous and Mental Disease*, and in the Transactions of the Association, and has been published in the *Journal of Comparative Neurology*, June, 1896, VI, 129–130.