

THE AMERICAN INDIAN, HIS RELIGION. BY GEORGE L. CURTIS.

NOTES ON THE ORIGIN OF THE EPIPHYSIS CEREBRI IN AMIA. BY B. M. DAVIS.

[ABSTRACT.]

The presence of the *epiphysis* in all the vertebrates from the Cyclostomes up has made it an object of study among comparative anatomists for a long time. Its structure and development has been described for all the groups except the Ganoids.

I have had occasion lately (together with Dr. Eyclescheimer of Chicago University) to examine the early development of this structure in *Amia calva*, and this is merely a preliminary note to a more detailed and complete account, which will be published later.

It has been described (*e. g.*, Hertwig's Embryology) as always arising in exactly the same way, *i. e.*, as a forward evagination of the roof of the thalamencephalon. As a matter of fact, however, the opposite is true in several forms. (*Petromyzon*, *Acipenser*, *Amia*, Chick.)

Its first appearance in *Amia* is in a larva still uncoiled from the yolk. It is noteworthy that it does not appear this early in all individuals. In some cases it does not develop until the larva has uncoiled from the yolk and has attained a length of four or five millimetres.

It is at first a simple fold in the brain-roof directed backward. There are no histological features which would distinguish it from the adjacent parts of the brain.

The stages immediately succeeding this show a gradual change in structure. The upper part of the fold is differentiated into the *epiphysis*. It is a glove-finger-like structure, with its cavity bounded above by two rows of cells and below by several.

The distal end for some time remains much the same in structure, but the dorsal wall of the proximal end becomes thickened. This thickened portion extends forward and becomes the so-called "anterior vesicle." From the time of origin it would seem that "secondary vesicle" would be a better designation.

The two vesicles are attached to the brain-roof by a stalk and have a common opening into the thalamenceole.

Later the anterior or secondary vesicle shifts to the left, and from the ten-millimetre stage on is found to the left of the primary vesicle.