ance in the neural tube: A transitory set that arise in connection with the original optic differentiation, and which completely disappear before the second set or true brain vesicles arise. The lateral expansions of the neural tube which constitute the beginning of the eye vesicles are elongated, and they are converted into the true optic vesicles in front and a succession of similar but smaller ones which are serially arranged behind the former. The latter series, which consists of six pairs of vesicles, is very transitory, passing through the stages of rise, culmination and decline within three or four hours' time.

The structures occur in normal embryos. Five hundred eggs were incubated and fifty embryos obtained at the right ages to show the history of these structures. They were studied in living specimens in warm salt solution. The observations were originally made in 1893 and verified and reverified in a variety of ways since that time. The specimens were sketched, photographed, sectioned and, in some cases, reconstructed. By placing the specimens under a dissecting microscope, where several can be viewed at the same time, and making a critical *comparative* study of all the embryos, they may be arranged in a graded series, the extremes of which differ considerably, but the intermediate embryos show slight gradations. In such a series it is observed that these vesicles do not, in any case, develop progressively to become brain vesicles, but undergo decline before the brain vesicles appear. At their period of greatest development—between the 24th and 26th hour, with six somites—there are six pairs; they are reduced during the next hour to four pairs, and, at about the 27th hour, with eight somites, they are reduced to two, which rapidly fade away. From this period the true brain vesicles begin to appear. The author's observations on the development of the brain vesicles agree with those of Duval, Platt and other observers. It was shown that the first set of vesicles are independent of the brain vesicles and have not before been figured.

The theoretical bearing of the facts is obvious, and, although the author designates these structures 'accessory optic vesicles,' from their connection with the original optic differentiation and from their resemblance to the primary optic vesicles, nevertheless he holds this view in the lightest way, ready to withdraw it whenever any better interpretation may be presented. The validity of the facts is held to be established, and their history has been carefully worked out. Demonstrations of these structures to those interested followed.

The Thoracic Derivatives of the Post-cardinal Veins in Swine. G. H. Parker.

Embryonic pigs of about six millimeters greatest length possess well developed right and left post-cardinals (posterior cardinal veins) which extend from the base of the corresponding posterior extremities anteriorly over the dorsal surfaces of the Wolffian bodies to the region of the heart. The thoracic portion of each post-cardinal persists from the region of the heart to the tenth pair of ribs, beyond which a new vessel, the accessory vein, is developed, reaching to a point some distance posterior to the last pair of ribs. The combination of the post-cardinal and accessory vein of the right side gives rise to the azygos vein; the corresponding veins of the left side produce the hemiazygos. The axygos and hemiazygos veins receive the intercostal veins of their respective sides, and become mutually connected by several transverse veins. In later embryonic life the cardinal portion of the azygos vein usually degenerates completely, and the right intercostal veins connected with this part find outlets through the corresponding part of the hemiazygos which persists in the adult pig. The

accessory parts of the azygos and hemiazygos veins may remain connected with the cardinal part of the hemiazygos and by their variations give rise to three structural types: First, one in which both accessory parts are equally developed; secondly, one in which the hemiazygos accessory part predominates; and thirdly, one in which the azygos accessory part predominates.

The Veins of the Wolffian Body. C. S. MINOT.

DR. MINOT had studied especially the condition in pig-embryos of 12.0 mm. The cardinal vein ends abruptly at the cephalic end of the Wolffian body; the vena cava inferior is also well developed and communicates widely with the middle of each mesonephros. Between the Wolffian tubules there are no capillaries, but only large sinuses, the endothelium of which lies close against the epithelium of the tubules. The sinuses communicate freely with both the cardinal and cava veins. Along the dorsal side of the Wolffian body there is no continuous cardinal vein, but there are still two channels of reduced size, representing the lower parts of the cardinal which have become united with the cava inferior.

New Embryological Observations. C. S. MINOT.

THE author described: (1) the mesothelial villi of the allantois in the pig; (2) the development of the hypophysis and infundibular gland in the pig, *Amia*, *Batrachus*, *Ameiurus* and *Necturus*, confirming and extending the results of Béla Haller; (3) observations upon various vertebrate types, tending to show that the zones of His have a constant morphological value; (4) the fore-brain of *Ameiurus Embryos*, clearly similar to that of other types of vertebrates as concerns the hemispheres and foramen of Monro; if this observation is confirmed by further study it will show that neither the theory of Burkhardt nor that of Studniscka in regard to homologies of the Teleostean fore-brain is correct.

A Peculiar Glandular Structure found in a Mexican Diplopod. F. C. KENYON. (Read by title only.)

THE structure was found in the repugnatorial glands of specimens of the diplopod genus *Platydesmus* from Mexico. It arises from the proximal inner surface of the walls of the bottle-shaped repugnatorial gland and projects into the glandular cavity, presenting in section very much the appearance of a section of an ordinary mushroom and its stalk. Its base and the distal, or expanded cap-like portion, are well provided with medium-sized, somewhat oval nuclei. The stalk exhibits a striated appearance. In the expanded cap only fragments of cell boundaries have been distinguished.

In some respects the organ resembles the structure that has been figured for the phosphorescent organs of some deep-sea animals, but *Platydesmus* is not known to have the power of emitting phosphorescent light, and only one diplopod has ever been described as having such a power. In this one form, *Fontaria luminosa* Ken., the light was described by the person who observed it as arising from spots corresponding in position to the repugnatorial glands. A light-emitting function is suggested for the peculiar structure noted. Whether the suggestion will eventually prove to be a fact, however, is a question which the collector must be largely depended upon to decide.

The following officers were elected for the ensuing year: President, Henry F. Osborn, Columbia; Vice-President, T. H. Morgan, Bryn Mawr; Secretary-Treasurer, G. H. Parker, Harvard; Members of the Executive Committee from the Society at large, C. B. Davenport, Harvard, and F. R. Lillie, Michigan.

G. H. PARKER,
Secretary.

HARVARD UNIVERSITY.