trasting background. The cover glasses were mounted on the glass strips and held in position by collodion.

For the older stages, where the membranes stretch far around the yolk, thick (6 per cent.) collodion was moulded in Reighard's watch glasses, hardened in chloroform and coated with black collodion. The membranes were then floated over the mass, fixed in position with thin collodion, and these mounted specimens without membranes were fastened in position on the glass slides with collodion.

A separate series was made to show the change of form of the brain in course of development.

On the Amblyopsidæ. C. H. EIGENMANN.

THE members of the Amblyopsidæ and their distribution are as follows: *Chologaster cornutus*, abundant in the lowland swamps of Virginia and Georgia; *Chologaster Agassizii*, subterranean streams of Tennessee and Kentucky; *Chologaster papilliferus*, springs of Union and Jackson counties, Ill.; *Amblyopsis spelæus*, subterranean streams of the Ohio Valley; *Typhlichthys subterraneus*, subterranean streams of the Ohio Valley, chiefly south of the Ohio River; *Typhlichthys rosæ*, subterranean streams west of the Mississippi.

The eyes of all the species except those of *Ch. Agassizii* have been examined. In *Chologaster* the eyes are normally placed and functional. *Ch. papilliferus* possesses the better eyes, but even here many signs of degeneration are apparent, the inner layers of the retina being less in thickness than the pigmented layer. In *Ch. cornutus* the pigmented layer forms two-thirds of the thickness of the retina, the nuclear layers are each composed of a single series of nuclei and the ganglionic layer of cells widely separated from each other. The lens and vitreal body are normal. In all the species examined the eyes have sunk beneath the surface, the lens and vitreal body have practically disappeared; the eye has, as a consequence, collapsed and is minute. Part of the ganglionic layer forms a central core of cells in *Amblyopsis* and *T. subterraneus*. In the former the pigmented layer is highly developed; in the latter, while still present, it is entirely without pigment. In *T. rosæ* the eye has degenerated further than in the eastern species. The central core of ganglionic cells has disappeared; the pigmented layer is imperfect; the inner reticular layer occupies a central, or rather posterior, position around which the nuclear layers are placed. Lens and iris are gone, and the entire eye is but 40–50 μ in diameter.

Conclusions: The three species of blind fish are of independent origin. The results of degeneration are not the same on the homologous structure of the eye in the three species. The degeneration is not the result of arrested development or of ontogenic degeneration. The eye of the Amblyopsidæ, reaching its greatest point of degeneration in *T. rosæ*, is the result of phyletic degeneration begun before the fish entered the caves. Their degenerate eyes are not primarily due to their habitat in caves, *i. e.*, to the absence of light; rather are they found in the caves because they were largely able to do without the use of their eyes, and therefore succeeded in establishing themselves in the caves. In this they were aided by their peculiar method of raising their young in their gill cavities.

The two Common New England Salamanders, Desmognathus and Spelerpes, and their Importance as Laboratory Animals. H. H. WILDER. (Read by title only.)

Accessory Optic Vesicles in the Chick Embryo. W. A. LOCY.

IT was shown that in chick embryos two distinct sets of vesicles make their appear-