ance rendered me by Mr. William McDoel, General Manager of the Monon, in enabling me to make explorations in the numerous caves of the Lost River region along his line and to visit caves at greater distances. Mr. H. C. Ganter, the manager of the Mammoth Cave Hotel, not only granted me leave to collect in the cave, but did everything possible to make my trip to this cave successful.

Chologaster agassizii and Its Eyes. By Carl H. Eigenmann.

[Abstract.]

Chologaster agassizii has heretofore been known from the type specimen only. This came from a well at Lebanon, Tennessee. I have heard of other specimens, but neither persuasion nor a liberal cash promise was able to bring one of these specimens. Five specimens were recently caught by me.

Chologaster agassizii possesses this peculiar interest: The Amblyopsidæ, evidently the wreck of an ancient numerous family, are now represented by Chologaster with well-developed eyes, and the various blind fishes with greatly degenerate eyes. Of Chologaster there are three known species. One of these lives in the streams of the Atlantic slope and does not concern us. The other, Ch. papilliferus, lives in springs in southwestern Illinois, while the third, Ch. agassizii, lives altogether in subterranean streams. I wanted Ch. agassizii to compare its eyes with those of Ch. papilliferus. The interest is heightened by the fact that the two species are very similar, the eye of agassizii is, however, very much smaller and will, when examined, give us one of the steps of degeneration through which this structure passes.

The Eye of Typhlomolge from the Artesian Wells of San Marcos, Texas. By C. H. Eigenmann.

[Abstract.]

The eye of Typhlomolge has lost the lens and for the most part the vitreous body. The eye has, as a result,collapsed. The pupil is still open in the young but becomes closed in the adult, and in its region the pigment of the iris becomes much thicker than the pigmented layer at the back of the retina.

The Eyes of Typhlotriton Spelæus.* By Carl H. Eigenmann and W. A. Denny.

[Abstract.]

Typhlotriton was discovered in Rock House Cave, Barrie County, Mo., by Mr. F. A. Sampson, in July, 1891. The specimen was described by Stejneger in the Proc. U. S. Nat. Mus., Vol. XV, p. 115. This is the only mention made of this salamander in literature.

In the spring of 1897, I visited Rock House Cave and secured a number of larvae which Stejneger pronounced the larvae of his Typhlotriton. I was informed by Mr. E. A. Schultze, a member of this academy, that he had seen this salamander in the underground passage to Blondis Throne room in Marble Cave, Mo.

In September of 1898 I visited this cave and secured four adults and three larvae of the Typhlotriton. A large number of larvae were obtained from Rock House Cave. Those from Rock House Cave had lived in the light, but it is scarcely supposable that those from Marble Cave had ever been affected by the light. In the caves both larvae and adults are found under stones in and out of the water. Occasionally one is seen lying on the bottom of a pool.

In the aquarium the larvae creep into or under anything available. A rubber tube served as a hiding place. The rubber tube admitting water to the acquarium is sometimes occupied by several (at one time seven) during a temporary cessation of the flow of water. A wire screen sloping from the bottom of the aquarium forms the most popular collecting place of the larvae. They collect beneath this, although it is no protection from the light. The eye does not protrude in the larva but it does in the adult. It is retracted after death, however, so that preserved specimens will not give a correct impression of the real condition.

The following are a series of measurements on the larvae of Typhlotriton.

	Rock House Cave.	*Rock House Cave.*	*Marble Cave.*
	mm.	*mm.*	*mm.*
Specimen (length)	54	78	88
Size of pupil	.432	.640	.....
Length of eye	1.30	1.50	1.60
From optic nerve to front of lens	.80	1.20	.....
Vertical diameter	.....	1.248	1.28

*Contributions from the Zoölogical Laboratory of the Indiana University, No. 31.

An adult and a larva taken from Marble Cave were sectioned in the usual manner. The lens and iris in both were normal. The only difference in the histological structure of the eye, when compared with the normal salamander (Amblystoma jeffersonianum), is found in the retina.

In the larvae all the layers of the retina are well developed. The ganglionic layer is much thicker than that of the Amblystoma, having many rows of cells instead of one or two. All the other layers are normally present, the rod and cone layer being well developed. The retina in the larva is much thicker than in the adult. In the adult the rods and cones have disappeared, there being only an occasional process from the outer nuclei.

In all the sections thus far studied we have been unable to detect the slightest indication of an outer molecular layer in the adult, while in the larva this layer is normally developed. The ganglionic layer is thicker in the larva than in the adult. In this respect the adult approaches the normal more than the larva does. The Müllerian fibres are profusely present in both larva and adult.

SUMMARY.

1. The larval retina approaches the normal (Amblystoma) more than the adult. The only apparent difference is a thickening of the ganglionic layer.

2. The retina is thicker in larva than in adult.

3. All the layers are present in the retina of the larva, while in the adult the rods and cones and the outer molecular layer have not been made out; the inner molecular layer is thinner.

4. The ganglionic layer is thicker in larvae than in adult.

The Blind Rat of Mammoth Cave.* By Carl H. Eigenmann and James Rollin Slonaker.

Habits and Habitat, by Carl H. Eigenmann. No. 32.

In his origin of species, sixth edition, Vol. I, page 171, Darwin says that the eyes of Neotoma of Mammoth Cave are "lustrous and of large size; and these animals, as I am informed by Prof. Silliman, after having been exposed for about a month to a graduated light, acquired a dim per-

*Contribution from the Zoölogical Laboratory of the Indiana University.