

I am greatly indebted to Dr. H. A. Pilsbry for comparing our specimen with material in the collection of the Academy of Natural Sciences of Philadelphia.

STUDIES IN NAJADES.

BY A. E. ORTMANN.

(Concluded from Vol. 29, page 67.)

EURYNIA (MICROMYA) ARKANSASENSIS (Lea). (See: *Lampsilis ark.* Simpson, 1900, p. 557).

Three males and three sterile females from Saline River, Benton, Saline Co., Ark., collected by H. E. Wheeler, July 13, 1911.

Mantle-connection between anal and supraanal moderately long, but shorter than either opening. Anal with distinct or indistinct crenulations. Branchial with papillae. In front of branchial, the inner edge of the mantle is slightly lamellar in the female, with a series of about a dozen very small, rather distant, and somewhat irregular papillae, accompanied by a streak of black pigment. These papillae are smaller than those of the branchial opening, and are most distinct anteriorly. They are smaller than those of *vanuxemensis*, but agree very nearly with those of *constricta*. In the male, the streak of black pigment is present, but the papillae are represented by mere crenulations.

Posterior margins of palpi connected at base. Inner lamina of inner gills entirely connected with abdominal sac. Marsupium of the sterile female with 20 to 25 ovisacs, its edge pale brownish.

This species also in the shell resembles *E. vanuxemensis* and *constricta*, but it is more swollen and has more anterior beaks. The female has the characteristic shape of these species, but the enlarged and truncated posterior part is more evenly rounded, and the posterior end not so much produced. At least one of my females (the largest) has an indication of the "constriction" seen in old specimens of the two other species.

EURYNIA (MICROMYA)  
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*EURYNIA (MICROMYA) LIENOSA* (Conrad). (See: Ortmann, 1912, p. 340).

In addition to the specimens investigated previously (from Mississippi), I received a gravid and discharging female from H. E. Wheeler, collected May 19, 1911, in the Ouachita River, Arkadelphia, and several gravid females collected in September, 1911, in Big Deceiper Creek, Gum Springs, Clark Co., Arkansas.

The glochidia agree with those described previously, but their general shape should be called subspatulate, with almost straight anterior and posterior margins. Length, 0.20; Height, 0.27 mm.

*EURYNIA (EURYNIA) SUBROSTRATA* (Say). (See: *Lampsilis* s. Simpson, 1900, p. 546).

Specimens from Big Deceiper Creek, Gum Springs, Clark Co., Ark., collected by H. E. Wheeler, September, 1911. Two were gravid females, one with eggs, the other with glochidia.

Mantle connection between anal and supraanal long, over twice as long as the short anal, and somewhat longer than the supraanal. Inner edge of anal crenulated, that of branchial with papillae. In the female, the inner edge of the mantle, in front of the branchial, carries a row of numerous, small, but distinct papillae, which are subcylindrical or subconical, of rather uniform size (the largest in the posterior part), and are somewhat distant from each other. A black streak extends from the branchial to a certain distance forward. In the male, the black streak is short, and the papillae are rudimentary and very distant from each other.

Palpi with one-third of the posterior margins connected. Inner lamina of inner gills entirely connected with abdominal sac, but sometimes a small hole is present at the posterior end of the foot.

Marsupium in the posterior half of the outer gills, in my specimens, with 18 to 25 ovisacs. Edge with some blackish-brown pigment.

Glochidia subovate (not subspatulate), higher than long. Length, 0.21; height, 0.26 mm. They are closely allied to those of *E. nasuta*, but are distinctly smaller ( $0.25 \times 0.29$  mm. in *nasuta*).

The glochidia have been figured by Lefevre and Curtis (Bull. Bur. Fish., 30 [1910], 1912, pl. 8 f. 13, 14, 15), and the fig. 13 gives the shape correctly, but measurements have not been published. Lefevre and Curtis (Journ. Exper. Zool., 9, 1910, p. 95), point to the glochidia of this species as having a shape, which might be regarded as transitional toward the "axe-head" (or "colt") glochidia of *Proptera*. This is quite right; but the glochidia found in the subgenus *Micromya* of *Euryntia* are yet closer to the axe-head type.

The same authors have published (1910, pl. 1, f. 2; 1912, pl. 6, f. 2), a general figure of the soft parts of the gravid female.

In shell characters, this species is near *E. nasuta* (Say), but the papillae of the mantle edge are somewhat larger, and not as closely set. This makes it, to a degree, transitional between typical *Euryntia* and the subgenus *Micromya*. With regard to the glochidia, *E. subrostrata* is more closely allied to *E. nasuta*. Also *E. recta* (Lamarck) has subovate, and not subspatulate glochidia.

LAMPUS VENTRICOSA SATUR (Lea). (See: Simpson, 1900, p. 527).

A number of specimens from the Old River of the Ouachita River, Arkadelphia, Clark Co., Ark., collected by H. E. Wheeler, on May 19 and June 26, 1911, among them gravid females with glochidia, discharging on the latter date.

Soft parts entirely like those of *L. ventricosa* (Barnes).

Glochidia like those of *L. ventricosa* in shape, subovate, but distinctly smaller. Length, 0.22; height, 0.25 mm. (0.25 × 0.29 in *ventricosa*).

This form, according to Simpson, is "a rather delicate, dark colored variety of *ventricosus*." There is nothing "delicate" about my specimens. The form *satur* was founded upon a female, and the male has never been figured. I have males. Both sexes differ from *ventricosa* by greater convexity of the valves, more prominent umbones, and by dark color. The peculiar emargination of the posterior margin of the female is an individual character, restricted to old specimens. Some of my younger specimens are lighter in color, dark olive-green, and have rays. A very similar form is *L. excavata* (Lea)

(Mississippi to Georgia ridge. Eastern ones have specimens from

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Recently the Bulletin from Prof. Edward M. Cresson on its cover—"Mollusca of Cincinnati 1876." Wishing the Librarian wrote to me for the following and the following Lester D. Collier, the "The pamphlet de High School boys at The letters O. G. B. Doherty was one. I were much interested by them from specimens. Some of them are from here. This is contains twelve pages, mollusca existing in The preface is dated species.—C. W. Jour

SHELLS OF MT. Mc I am staying (for the clad and often very d collecting ground for July has started the Miss Rebecca Kite a representatives of the 3,000 feet altitude, at *Polygyra albobabris*:

(Mississippi to Georgia), but this has a rather sharp posterior ridge. Eastern *excavata* are also much lighter in color, but I have specimens from Jackson, Miss., which are as dark as *satur*.

On account of the glochidia, I have the suspicion, that *satur* might be a good species. Intergrading specimens are not known.

## NOTES.

Recently the Boston Society of Natural History received from Prof. Edward S. Morse a pamphlet with the following title on its cover—"PUBLICATIONS OF THE O. G. B. III. MOLLUSCA OF CINCINNATI. CINCINNATI: L. A. BURDSAL, PRINTER. 1876." Wishing to know the origin of this publication, our Librarian wrote to the Cincinnati Society of Natural History and the following information was received from Mr. Lester D. Collier, through the kindness of Mr. Charles Dury. "The pamphlet described was published by some Woodward High School boys and the Burdsal mentioned was one of them. The letters O. G. B. stands for "Our Geological Boys". Wm. Doherty was one. I was well acquainted with these boys, who were much interested in geology. The list of shells was made by them from specimens collected here and mostly by them. Some of them are dead and most (if not all) of them, gone from here. This is my recollection of it". The paper contains twelve pages, including the title page, "List of the mollusca existing in the neighborhood of Cincinnati, Ohio". The preface is dated August 6, 1876. The list contains 103 species.—C. W. JOHNSON.

SHELLS OF MT. MONADNOCK, N. H.—Mt. Monadnock, where I am staying (for the last seven summers) being mostly spruce-clad and often very dry during the late summer, is a very poor collecting ground for snails. However the excessively wet last July has started them out and by the energetic collecting of Miss Rebecca Kite and myself we have succeeded in getting representatives of the following species from between 2,000 and 3,000 feet altitude, all rare.

*Polygyra albolabris* Say.

Chen and Curtis (Bull. U. S. Geol. Surv., 1872, pl. 13) have not been described in the paper, Zool., 9, 1910, as having a shape, and the "axe-head" shape is quite right; but the shape of *Rarynia* are

1910, pl. 1, l. 2; 1912, pl. 1, l. 2 of the gravid female. *R. nasuta* (Say), but is somewhat larger, and not as transitional between *Polygyra*. With regard to *Polygyra* allied to *E. nasuta*, and not subspatulata

(See: Simpson, 1900,

River of the Ouachita collected by H. E. Wheeler, and gravid females with

*excavata* (Barnes).

shape, subovate, but diameter, 0.25 mm. (0.25 ×

rather delicate, dark color, nothing "delicate" was founded upon a specimen. I have males. The convexity of the shell is of a very dark color. The shape of the female is similar to specimens. Some of the specimens are dark olive-green, and *L. excavata* (Lea)