

ened outwardly, broadly dilated at the insertion, partly covering the umbilicus; parietal film transparent but not very thin.

Height 12.7, diam. 20 mm. Aperture with peristome 12.7 mm. wide; umbilicus 1.7 mm. wide.

*Locality*.—Sinaloa, Mexico, Wm. M. Gabb. Type No. 58124 A. N. S. P.

The special features of this species are its narrow umbilicus, very wide last whorl, large aperture and surface free from any trace of spiral incised lines. The apex is slightly worn, but I think I see traces of the same sculpture described for the first whorl of *S. peninsularis*. It is one of the specimens Gabb identified as *Helix rémondi* Tryon—which is quite a different thing. Gabb was a really notable geological explorer, but sometimes he was not fussy over identifications of shells.

EPIPHRAGMOPHORA ELLIPSOSTOMA Pilsbry. Pl. 2, figs. 6.

Described in NAUTILUS VIII, p. 81 (1894), but not figured before. The locality given by Gabb, San Juan del Norte, is rather ambiguous. It would be taken for the place so named in Nicaragua were it not that the specimen was stuck on a label with a shell of *Sonorella peninsularis*, suggesting a Lower Californian habitat. The malleation and epidermis recall Californian and Peruvian Helices, but no similar species has been taken in Nicaragua. The figures represent the type-specimen, no. 10745 A. N. S. P.

#### OBSERVATIONS ON THE UNIO COR, OF CONRAD.

BY L. S. FRIERSON.

T. A. Conrad published in 1834, his "New Fresh Water Shells" describing and figuring a number of species. His figures were not very good, and some confusion ever since has been the result. For instance, his figure of *U. prasinus* is so unlike the figure given by Dr. Lea for his *U. schoolcrafti* that the two have been placed as different sub-species in our lists; yet both figures were drawn from the same identical specimen! Mr. Conrad figured a shell, (presumably his *Unio stramineus*) on plate 7, but he omitted it altogether from the text!

But above all, the confusion is greatest, for there is not the described one species, and I under this name!

Through the kindness of Mr. Conrad of Natural Sciences, this confusion is cleared up.

Mr. Conrad published, in 1834, *Unio mytilloides* (Am. J. Sci., vol. 1, p. 1834). These figures were intended to represent the same species. The "Mytilloides" figured is a *U. cor*, is much like it, yet not identical.

No shell exactly like Conrad's is in the collection of the Academy of Natural Sciences, Philadelphia.

The true *Cor*, however, is in the collection of the Academy of Natural Sciences, Philadelphia, herewith (pl. iii, figs. 1, 2, Pilsbry).<sup>1</sup>

*U. cor* Conrad is a native of the Tennessee River, and is a tributary of the Tennessee. *U. crapulus*, of Lea, with which it is often confused, comes from a different district.

The true *Unio cor* is characterized by its beak to base. Neither *U. lewisi*, nor are indicated upon the map of Conrad (Mr. Conrad's conception of *U. lewisi*).

The true *U. cor* is to be found in other names, among which *U. tuscumbiensis*, *andersonensis*, *virginiana*, *lewisiana*, *lewisensis* Lea represents an old form, short behind, but otherwise identical.

<sup>1</sup> Dr. Pilsbry believes that Conrad's *U. cor* he described as *Unio cor*, and that it is now figured, but of the same species.

But above all, the confusion concerning his *Unio cor* is the greatest, for there is not the slightest doubt that Mr. Conrad described one species, and figured an entirely different one under this name!

Through the kindness of Mr. E. C. Vanatta, of the Academy of Natural Sciences, this confusion has been cleared up.

Mr. Conrad published, in January 1834, a shell he called *Unio mytilloides* (Am. Jl. Sci. xxv, pl. 1, fig. 7), and his figure of *Unio cor* (New Fresh Water Shells, plate iii, fig. 3) in May, 1834. These figures were assumed by Mr. C. T. Simpson, to represent the same species. There is little doubt but that the "Mytilloides" figured is a *Unio ebenus* Lea, and the figure of *cor*, is much like it, yet not identical.

No shell exactly like Conrad's *cor* has yet been obtainable, and if the figure is accurate, the species is probably yet undescribed.

The true *Cor*, however, is well characterized, and the type, in the collection of the Academy of Natural Sciences, is figured herewith (pl. iii, figs. 1, 2, 3) through the courtesy of Dr. Pilabry.<sup>1</sup>

*U. cor* Conrad is a native of the Elk and Flint Rivers. These are tributaries of the Tennessee River. The *Unio lewisi*, and *U. crapulus*, of Lea, with which *U. cor* has hitherto been identified, come from a different drainage system.

The true *Unio cor* is characterized by Mr. Conrad, as having rays,—the young, beautifully rayed, and having a sulcus from the beak to base. Neither of which are ever exhibited by *lewisi*, nor are indicated upon the pseudo-figure of *cor*. Mr. Conrad says the young shells resemble the *undatus*, Barnes, (Mr. Conrad's conception of *undatus*, was the *obliquus* of Lamark).

The true *U. cor* is to be found in many collections, under other names, among which the writer has noted *U. edgarianus*, *tuscumbiensis*, *andersonensis*, and others. The figure of *andersonensis* Lea represents an old, much inflated specimen, rather short behind, but otherwise quite characteristic.

<sup>1</sup> Dr. Pilabry believes that Conrad's figure, pl. 3, fig. 3, represents the shell he described as *Unio cor*, and that it was a slightly older specimen than that now figured, but of the same species.

Mr. Conrad also observes that mature specimens of *U. cor* are sometimes produced and cuneiform behind, "like some varieties of *triangularis* of Raf.," (a species, in Mr. Conrad's estimation at that time, embracing the group of *pyramidatus* etc.

NEW CALIFORNIAN LAND SNAIL.

BY HENRY A. PILSBRY.

EPIPHRAGMOPHORA ZECHÆ n. sp. Pl. III, lower figs.

The shell is strongly depressed, umbilicate (width of umbilicus contained nearly eight times in greatest diameter of the shell), rather thin. The whorls of the spire and as far as the front of the last whorl are dilute cinnamon, then changing to ecru-olive or dark olive-buff; there is a chestnut-brown band at the shoulder (about 2 mm. wide), bordered with inconspicuous, hardly noticeable bands paler than the ground-color. Surface is glossy, distinctly, irregularly striate, and immediately behind the lip it is closely and minutely granulose. The spire is a little convex, whorls  $5\frac{1}{2}$ , moderately convex, slowly increasing to the last, which is about double the width of the preceding, and decends a little in front. The aperture is broadly lunate, decidedly wider than high. Lip thin, the upper margin scarcely expanded, outer very slightly, basal very narrowly reflexed, the columellar margin broadly dilated.

Alt. 15.2, diam. 31 mm.; aperture, alt. 14.3, width 17.8 mm.

Habitat, San Antonio Canyon, in the San Gabriel Mts., western edge of San Bernardino Co., California, at about 5000 ft. elevation (Miss Lilian Zech).

This fine species will probably prove to belong to the *Helminthoglypta* group, in which it most resembles *H. sequoicola* (Cooper); yet the absence of malleation on the last whorl and of granules on the spire are features more like *Sonorella*.

Miss Zech gives the following account of the locality.

The specimen was found in a narrow, winding canyon branching from the main San Antonio canyon at 4700 feet and at this point, some two or three hundred feet higher as near as I can

guess,—only wide of water, and the trail. columbine, lilies, laurel. The trees small lay on a pile of mouth, and contain

DESC

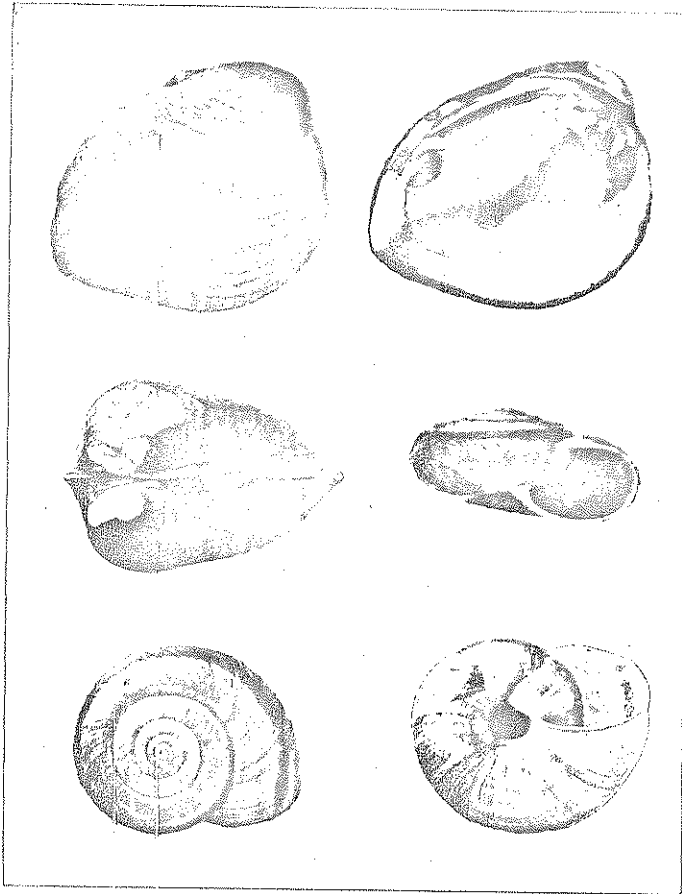
BIFIDARIA MINUTA,

Shell minute, or narrowly umbilicate four to four and a half large, rounded at the stria, apex without rather large, well rounded the ends somewhat close to and parallel callus or none; lam simple, columellar base, or wanting; examined. Alt. 1

Hab.: Woods, No. 1990, collection

This *Bifidaria* is species as follows: are less in number last is comparative a very slight one, secondary ones (as

It was a surprise country, and it represent a distinct the appearance of and probably were *Bifidarias* of this;



FRIERSON; UNIO COR CONRAD.  
 PILSBRY; EPIPHRAGMOPHORA ZECHÆ.

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## HELICES OF L.

In my "Notes upon Acad. Nat. Sci. Phi given of the Helices of peninsula. The inlar

While it seems likel mountain Helices wil of the genus *Micrarion* we have as yet no w *Sanorella*. It seems shells of the Southwes long elsewhere by dis

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Helices of this gre open umbilicus, more lip. They have the c

<sup>1</sup> In the paper just ment a subspecies of *Micrarion* since *H. canescens* was des stand as species until th intergrade, then *veatchii* w