

began to die, and their valves gaping, the exposed contents were eaten by birds, and the latter not being content with their daily dead, in several cases undertook to expedite the process by pecking holes through their valves. With such force was this done that, in every case noted, *both valves* were punctured at once. Whether this action of these birds is due to *instinct* or to *reason*, the writer being strictly a Naiadologist leaves it to other better equipped observers to decide; merely remarking that this process has been previously observed, and the pecked shells in the writers cabinet now number three, from widely separate localities.

THE ANATOMY AND TAXONOMY OF CERTAIN UNIONINAE AND
ANODONTINAE FROM THE GULF DRAINAGE.

BY A. E. ORTMANN, PH. D.

(Continued from page 84.)

Lea and Simpson distinguished from *Lasmigona holstonia* a species, *georgiana* (originally described under the preoccupied name *etowahensis* Lea), chiefly on the ground that the beak sculpture is said to be not double-looped, but concentric, and that the pseudocardinals are single in each valve. This form has been reported from Etowah River, Ga., and also from Tennessee, but so far only the types of Lea (two, according to Simpson) are known. They have badly eroded beaks and rudimentary pseudocardinals. According to my experience such beaks are often seen in *L. holstonia*, and the development of the pseudocardinals is very variable. The posterior (interdental) tooth of the left valve often is very poorly developed, or even absent, and sometimes also the anterior one is obsolete, so that there is only one tooth in each valve, and, in extreme cases, even this tooth may become rather small. Such cases of reduction of the hinge teeth are seen chiefly in older shells, in specimens both from the Coosa and from the Tennessee drainage, but such specimens are always associated with normal ones. Thus I do not entertain the slightest doubt that the

"*Alasmidonta georgiana* (Lea)" is simply a synonym of *Las-
migona holstonia* (Lea).

10. *STROPHITUS CONASAUGAENSIS* (Lea).¹

St. connasaugaënsis (Lea) (1857), *St. alabamensis* (Lea) (1861), *St. gesneri* (Lea) (1858), Simpson, 1914 pp. 351-354.

The first form is from Conasauga Creek, Gilmore Co., Ga. (only the very source of the Conasauga, for about a mile, is in Gilmore Co.); *alabamensis* comes from Talladega Creek, Talladega Co., Ala.; *gesneri* from "Uphaupee Cr., below Columbus, Ga." (surely Uphaupee Creek, Macon Co., Ala., tributary of Tallapoosa River (Alabama drainage); it is, however not "below" Columbus, but to the west of it).

In 1900, Simpson has united *alabamensis* with *connasaugaënsis*, but in 1914, he separated them again, expressly stating that the three forms are closely connected and hard to distinguish. He gives the following distribution: *connasaugaënsis*, Alabama River system; for *alabamensis* the additional locality: Shelby Co., Ala.; for *gesneri* also: Swamp Creek, Ala. (an uncertain locality, possibly Swamp Cr., Lowndes Co., Ala., trib. to Alabama River; but there is another Swamp Creek, in Escambia Co., trib. to Escambia River).

Thus these forms are found in the Alabama, Tallapoosa, and Coosa drainages, from southern central Alabama (Lowndes and Macon Cos.) northward to northern Georgia. From this region I have the following material.

Chatooga River, Trion, Chatooga Co., Ga. A dead, broken shell, A. E. Ortmann coll., May 19, 1915.

Conasauga River, Conasauga, Polk Co., Tenn. Three males, two females (with soft parts), A. E. Ortmann coll., May 24, 1915.

Coosa River, Weduska Shoals, Shelby Co., Ala. Three shells, H. H. Smith coll.

All those described shells, and also the specimens at hand, resemble the *Strophitus edentulus* (Say) of the interior basin. They differ from it, however, in the somewhat lighter color of

¹ According to the orthography accepted in the U. S. Topogr. Surv. maps I change thus the original spelling: *connasaugaensis*.

the epidermis, in that of the nacre, which varies from whitish to dull salmon or purplish (the latter color never found in *edentulus*), and chiefly by the better development of the hinge teeth. While the pseudocardinals, in *S. edentulus*, are entirely rudimentary, represented only by gentle swellings or not at all, there is, in this Alabama-form, at least one pseudocardinal in each valve, which may be small, but is generally, well developed, triangular and compressed, or tubercular, knob-like and stumpy. The tooth in the left valve corresponds to the second tooth of the original Anodontine hinge-teeth, for, in rare cases, in front and behind this, traces of a first and third tooth are seen, the third corresponding to the interdental tooth.

M. connasaugaënsis Lea, founded upon a single individual, is of medium size, and rather elevated in the posterior part; *M. alabamensis* Lea, also founded upon a single specimen, is large, and represents the normal condition of this form: it is also somewhat thicker than young shells. *M. gesneri* Lea is founded upon five specimens; the figured one also is large, but less elongated than *alabamensis*, and a little more convex, with darker (brown) epidermis: the nacre is purplish on the margins, and, according to Simpson, the left valve has traces of three pseudocardinals (Lea describes only one).

These three forms easily fall within the range of variation as indicated by my specimens (which surely belong to one species). and I only should add, that I have no specimens as large as *alabamensis* and *gesneri*. My largest, a female from Conasauga, measures: L. 67, H. 49, D. 32 mm. Also none of my specimens has purplish tints in the nacre, but in several of them salmon color is seen.

This species should be known as *Strophitus conasaugaënsis* (Lea) (1857), and it is characterized by the presence of at least one pseudocardinal in each valve, variable in size and shape, to which, in the left valve, sometimes traces of two others (anterior and posterior) are added; by the yellowish-olive color of the epidermis, turning to brown in old shells, and the occasional presence of rays upon the posterior slope.

The same type of shell, as far as it concerns the hinge-teeth, is found in the western section of the Alabama system, in Tom-

bigbee River and its tributaries in western Alabama and eastern Mississippi. These shells are larger, thicker, and more swollen and have a blackish epidermis (in young ones, however, this is lighter, yellowish to greenish olive, but mostly with dark rays and dark concentric bands). They go by the names of *St. spillmani* (Lea) (1858) and *St. tombigbeensis* (Lea) (1858). They undoubtedly represent *conasaugaensis* in this region, but I cannot tell whether they intergrade with it or not. *S. spillmani* is a longer shell, dark brown, with concentric bands, while *S. tombigbeensis* is shorter, with dark epidermis and lighter rays, characters which surely are only individual.

CORRECTION OF THE NAME OF DRILLIA ROSEOBASIS P. AND V.

BY H. A. PILSBRY AND E. G. VANATTA.

Drillia roseobasis, from Tagus Cove, Albemarle, Island, Galapagos, was defined by us in Proc. Washington Academy of Sciences IV, 1902, p. 560, pl. 35, fig. 2. We did not know that there was a prior *Pleurotoma* (*Drillia*) *roseobasis* of E. A. Smith.* Neither of these species would be a *Drillia* in the modern sense, and as genera are now understood in this family, they would probably not be considered congeneric; but Smith's species has not been figured and is little known. Dr. W. H. Dall, considering the names homonymous, renamed the Galapagos species *Pleurotoma roseotincta*.† Unfortunately, this name cannot be used on account of the prior *Pleurotoma* (*Clathurella*) *roseotincta* Montrouzier, 1872.‡ We propose, therefore to rename our Galapagos species *Pleurotoma testudinis*.

* Ann. Mag. Nat. Hist. (6), II, 1888, p. 301. Habitat unknown.

† " *Pleurotoma roseotincta* new name for *roseobasis* Pilsbry, 1902, not of E. A. Smith, 1888." Proc. U. S. Nat. Mus. vol. 54, 1919, p. 333.

‡ Journ. de Conchyl. XX, 1872, p. 361; XXI, 1873, p. 55, and as "*Pleurotoma roseotincta*," t. c. pl. iv, fig. 1.



Ortmann, Arnold E. 1923. "The anatomy and taxonomy of certain Unioninae and Anodontinae from the gulf drainage (continued)." *The Nautilus* 36, 129–132.

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