

SPECIES OF THE GENUS *UNIOMERUS*

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The genus *Uniomereus* Conrad, 1853 (p. 268), originally included the species *declivis* Say, *camptodon* Say, *subcroceus* Conrad, *sayii* Ward, *rivularis* Conrad, *porrectus* Conrad, *symmetricus* Lea, and *excultus* Conrad. According to the International Code of Zoological Nomenclature, the type-species of the genus must be one of these originally-included names.

Simpson (1900, p. 739) stated that *Unio tetralasmus* Say was the type of *Uniomereus*. However, since *tetralasmus* is not one of originally included names, it cannot be recognized as the type-species. In the synonymy of *U. tetralasmus*, Simpson listed *excultus*, *subcroceus*, and *symmetricus*, all of which were among the names originally included by Conrad. According to Article 69 (a) (iv) of the International Code, "If an author designates (or accepts another's designation) as type-species a nominal species that was not originally included, and if, but only if, at the same time he synonymizes that species with one of the originally included species, his act constitutes designation of the latter as type-species of the genus." Because Simpson synonymized under *tetralasmus* not just one but three of the originally included species, his act cannot be construed as the designation of any one of the three as type-species.

In the same way the reverse synonymy of Ortmann (1912, p. 272) in putting *declivis* and six other so-called species as synonyms or varieties under *tetralasmus* which he declared to be the type, does not hold. We now know that *tetralasmus* and *declivis* are separate species. The first clear designation of *declivis* Say, 1832 as the type-species is that of Frierson (1927, p. 10).

Three species can be recognized in the genus *Uniomereus*. These are separable not only on the basis of shell characters, but also on zoogeographic and anatomical grounds. Their exact time of reproduction, details of glochidial shape and structure, and fish host species are still unknown.

Uniomereus carolinianus (Bosc, 1801)

Unio caroliniana L.A.G. Bosc, 1801, Histoire Naturelle Des Coquilles, Deterville edition, Paris,

vol. 3, p. 142, pl. 23, fig. 2; refers to Tableau Encyclopédique et Méthodique, pl. 239 (249), fig. 5 ("Se trouve dans les eaux dormantes en Caroline"); 1824, *ibid.*, p. 139.

Synonyms: the following names are here considered synonyms of *U. carolinianus* Bosc, and are listed by name, author and date only. For full citations of references see Johnson (1970:339-340): *Unio obesus* Lea, 1831; *U. buddianus* Lea, 1843; *U. paludicolus* Gould, 1845; *U. ineptus* Lea, 1852; *U. columbensis* Lea, 1857; *U. plantii* Lea, 1857; *U. cicur* Lea, 1861; *U. squalidus* Lea, 1863; *U. bisselianus* Lea, 1867; *U. jewettii* Lea, 1867; *U. pawensis* Lea, 1868; *U. rivicolus* Conrad, 1868.

Simpson (1900; p. 741) was correct when he observed that *carolinianus* "is quite probably *U. obesus*." However, his decision to use Lea's later name was not in accordance with the present international rules, which state that the earliest valid name is the one to be used for a species.

In Bosc's introduction he observes that a species of *Unio* [probably *U. carolinianus*] was found living in mud which was dried so hard it could not be broken with a spade, and which was only watered by the occasional rains of the summer months. Any species found in such a habitat could only be a member of the genus *Uniomereus*. It could not possibly be a *Margaritifera*, nor could it be a synonym of *Elliptio complanatus*, as I had considered it until I read Bosc's description of its habitat.

This is the *Uniomereus* of the Atlantic drainage. It is presently known from North Carolina southward all the way around Florida, to and including the Flint River system of Georgia. Its reported presence in southern Virginia needs confirmation.

This species, like *U. declivis* from Ohio, has both male and female individuals, in approximately equal numbers, according to the gill structure of specimens I have examined.

Uniomereus declivis [Say, 1932]

Unio declivis Say, 1831 [1832] Transylvania Journal of Medicine vol. 4, p. 527 (Bayou Teche,

Louisiana); 1832, American Conchology no. 4, pl. 35.

Synonyms: (see Johnson, 1970): *Unio campton* Say, 1832; *U. geometricus* Lea, 1832. *U. excultus* Conrad, 1838; *U. sayii* Ward (in Tappan), 1839; *U. parallelus* Conrad, 1841, non Sowerby, 1840; *U. symmetricus* Lea, 1845; *U. rivularis* Conrad, 1853; *U. porrectus* Conrad, 1854; *U. manubius* Gould, 1855.

This species differs from *tetralasmus* by having a much more distinct point at the posterior base, and by the fact that males and females occur in approximately equal numbers. Frierson (1903) has discussed the differences between the shells of these two species in detail, with illustrations.

The species *declivis* Say is recorded from the Lake Erie drainage, Ohio and Indiana; from Tennessee; from the Coosa River system in Alabama, and southwest across Texas to the south side of the Rio Grande system in Chihuahua, Mexico.

Unio merus tetralasmus (Say, 1831)

Unio tetralasmus Say 1831, American Conchology, no. 3, pl. 23. (Bayou St. John, near New Orleans [Louisiana]).

Synonyms (see Johnson, 1970): *Unio blandingianus* Lea, 1834. *U. hebes* Lea, 1852. *U. subcroceus* Conrad, 1854; *U. jamesianus* Lea, 1857.

Unio tetralasmus has a much more rounded posterior end than *U. declivis*. It is only in some of the oldest specimens, when the shells become markedly arcuate, that it becomes quite difficult to separate the two species. In contrast to the dioecious species *declivis*, *tetralasmus* individuals all possess the female type of gill structure, and hence are evidently either parthenogenetic or

hermaphroditic.

This species occupies much the same geographic area as *U. declivis*. I have seen specimens from Lake Erie, Ohio; from Indiana, Illinois, Tennessee, Mississippi, and south to the Coosa River drainage in Alabama, and in the west from Colorado, Nebraska, Missouri, Kansas, Oklahoma, Arkansas, and Texas.

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