FORUM

RAFINESQUE'S HUDSON RIVER MUSSELS: A RE-EVALUATION

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Considerable literature has accumulated concerning the identification and/or unidentifiability of the freshwater bivalves described in Rafinesque's (1820, 1831) monographs (e.g. Lea, 1838; Simpson, 1914; Frierson, 1914, 1927; Ortmann and Walker, 1922; Morrison, 1969). In addition to the 68 numbered species from the Ohio River basin (including the imaginary Tremesa patelloides Rafinesque, 1820, via J. J. Audubon excogitat: see Moore, 1981), the 1820 work described six unnumbered species from the Hudson River. Although the Hudson River species have received little attention, most were synonymized by Frierson (1927) under other, earlier epithets (Table 1). Frierson (1927) did not include Anodonta cuneata Rafinesque, 1820 in his checklist. In more recent systematic studies, Johnson (1946, 1970) generally followed the synonymy of Frierson (1927) for these species but did not reference either A. cuneata or A. atra Rafinesque, 1820 (also see Burch, 1975).

Frierson's (1927) identifications and synonymy of the first four species in Table 1 appear compatible with the original descriptions in Rafinesque (1820). In the case of Anodonta, Frierson considered A. atra to be conspecific with A. cataracta Say, 1817 but apparently overlooked A. cuneata. Rafinesque (1820) described A. atra as inflated with a blackish periostracum and a nacre "whitish anteriorly, reddish, iridescent posteriorly" (ex La Rocque, 1964). Anodonta cuneata was characterized as only slightly inflated, attenuate posteriorly, and possessing a bluish-white nacre. Clarke and Berg (1959) considered a dark periostracum and salmon

or copper coloration (i.e. "reddish") in the nacre among the most diagnostic features for A. implicata Say, 1829. The similarity in these characters for A. atra and A. implicata indicates conspecificity. Frierson (1927) relegated A. atra to the synonymy of A. cataracta; however, the diagnosis for A. cuneata better fits the latter species. Although Rafinesque's (1820) descriptions for his two Hudson River Anodonta species are quite brief, they do not appear to refer to the same organism. Anodonta cuneata should be applied as a junior synonym under the earlier named A. cataracta. Anodonta atra is removed from the synonymy of the latter species and, due to nine years priority, replaces Say's A. implicata as the most senior, valid name for that species.

Table 1: Synonymy of Rafinesque's Hudson River mussels fide Frierson (1927).

Rafinesque (1820)	Frierson (1927)
Unio (Elliptio) aurata	Elliptio complanatus (Lightfoot, 1786)
Lampsilis rosea	Leptodea ochracea (Say, 1817)
Lampsilis pallida	Lampsilis cariosa (Say, 1817)
Obliquaria (Ellipsaria) attenuata	Ligumia nasuta (Say, 1817)
Anodonta (Anodonta) atra	Anodonta cataracta (Say, 1817)
Anodonta (Anodonta) cuneata	not in Frierson

LITERATURE CITED

Burch, J. B. 1975. Freshwater unionacean clams (Mollusca: Pelecypoda) of North America. Malacological Publications, Hamburg. 204 pp.

Clarke, A. H. and C. O. Berg. 1959. The freshwater mussels of central New York with an illustrated key to the species of northeastern North America. Cornell Univ. Agri. Exp. Sta. Mem. 367: 1-79.

Frierson, L. S. 1914. Remarks on the classification of the Unionidae. Nautilus 28: 6-8.

Frierson, L. S. 1927. A classified and annotated check list of the North American naiads. Baylor University Press, Waco. 111 pp.

Johnson, R. I. 1946. Anodonta implicata Say. Occ. Pap. Mollusks 1: 109-116.

Johnson, R. I. 1970. The systematics and zoogeography of the Unionidae (Mollusca: Bivalvia) of the southern Atlantic slope region. Bull. Mus. Comp. Zool. 140: 263-450.

La Rocque, A. 1964. Monograph of the fluviatile bivalve shells of the Ohio River, containing twelve genera and sixty-eight species by C. S. Rafinesque, a new translation. Sterkiana 16: 33-52.

Lea, I. 1838. Synopsis of the family of naiades. Philadelphia. 39 pp.

Moore, D. R. 1981. A long lost (extinct?) mollusc of the

Ohio River. Bull. Amer. Malac. Union 1980: 70.

Morrison, C. P. E. 1969. The earliest names for North American naiads. Amer. Malac. Union. Ann. Rept. 1969: 22-24.

Ortmann, A. E. and B. Walker. 1922. On the nomenclature of certain North American naiades. Univ. Mich. Mus. Zool. Occ. Pap. 112: 1-75.

Rafinesque, C. S. 1820. Monographie des coquilles bivalves de la riviere Ohio. Contenant douze genres et soixante-huit especies. Ann. Gen. Sci. Phys. Bruxelles 5: 287-322.

Rafinesque, C. S. 1831. Continuation of a monograph of the fluviatile bivalve shells of the River Ohio, and other rivers of the western states. Philadelphia. 8 pp.

Simpson, C. T. 1914. A descriptive cataloque of the naiades or pearly fresh-water mussels. Bryant Walker, Detroit. 1540 pp.

Notice

On April 9, 1987 five species of freshwater mussels from the Tombigbee River System were officially added to the federal list of Endangered and Threatened Wildlife and Plants (Federal Register, 52 (66) : 11162-9). They are Pleurobema marshalli Frierson, 1927; P. curtum (Lea, 1859); P. taitianum (Lea, 1834); Quadrula stapes (Lea, 1859); and Epioblasma penita (Conrad, 1834). Further, on April 27, Margaritifera hembeli (Conrad, 1838), a freshwater mussel from the Bayou Boeuf drainage in Louisiana, was proposed for inclusion (as endangered) on that list (Federal Register, 52 (79): 13794-7). Comments on M. hembeli are solicited and must be received by June 23, 1987. They should be sent to Mr. James H. Stewart, U.S. Fish and Wildlife Service, Suite 316, 300 Woodrow Wilson Avenue, Jackson, Miss. 39213 (telephone 601-765-4900).