

A NEW GENUS AND TWO NEW SPECIES OF SOUTH AMERICAN FRESH-WATER MUSSELS

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The new genus here described affords a resting place for the unique species described by Higgins as *Mycetopus falcatus* and which, in the past has been shifted from the genus *Mycetopoda* (*Mycetopus*) of the family Mutelidae to the genus *Solenaia* of the family Unionidae, and back to *Mycetopoda*.

The new species of *Anodontites* and *Mycetopoda* were collected by Dr. Henry Pittier, of Caracas, Venezuela, whose donations from time to time have enriched the collection of the United States National Museum with material collected in that country.

MYCETOPODELLA, new genus

Shell very elongate, falcate, wide at the rear, much narrower in front where each valve has a radial swelling and abruptly descends. A marked, broad, radial constriction from the beaks to the ventral margin. Beaks very near the anterior end. Hinge line without teeth, nearly straight behind the beaks, just in front of the beaks it is slightly excavated and has a decided lunule. It then abruptly merges into the anterior margin. Ligament very long. Sinulus long, narrow, forming a very acute triangle. Posterior ridge sharp; anterior ridge much more pronounced. Posterior area roughened by numerous, nearly perpendicular growth lines and slight lamellations of periostracum. Anterior area rougher with many sharply curving, deeply impressed growth lines. Ventral area nearly smooth and slightly glossy, but with moderate growth lines which run horizontally. Periostracum dull, with numerous microscopic radiating striae like those usually found in the Mutelidae. These lines number about 90 per millimeter. Anterior adductor scar pyriform, rather deep, placed far forward. Posterior adductor scar scarcely visible. Several minor but well-marked muscle scars just behind the anterior adductor scar.

The above generic name is proposed for the single species now known, described by Higgins as *Mycetopus falcatus*. This shell can not be placed in the genus *Solenaia*, and in many characters it differs so widely from *Mycetopoda*, as shown below, that it should not be included in that genus.

The history of the species is shown below:

MYCETOPODELLA FALCATA (Higgins) Marshall

Plate 1, figs. 1-3

1868. *Mycetopus falcatus* HIGGINS, Proc. Zool. Soc., London, p. 179, pl. 14, fig. 6.
 1868. *Mycetopus falcatus* HIGGINS, Sowerby, Conch. Icon., vol. 16, pl. 4, fig. 9.
 1870. *Platiris (Mycetopus) falcatus* (Higgins) LEA, Synopsis, p. 90.
 1875. *Mycetopus falcatus* HIGGINS, Clessin, Conch. Cab., p. 204, pl. 67, fig. 12.
 1875. *Mycetopus falcatus* HIGGINS, Fischer, Journ. de Conch., vol. 38, p. 8.
 1900. *Solenaia falcata* (Higgins) SIMPSON, Synopsis Naiades, Proc. U. S. Nat. Mus., vol. 22, p. 656.
 1914. *Solenaia falcata* (Higgins) SIMPSON, Descr. Cat. Naiades, vol. 1, p. 458.
 1916. *Mycetopoda bolivari* HAAS, Trabajos Mus. Nacional de Ciencias Naturales, Madrid, Zool. Ser., No. 25, p. 57, fig. 2.
 1925. (Genus?) *falcata* (Higgins) MARSHALL, Microscopic sculpture of pearly, fresh-water mussel shells, Proc. U. S. Nat. Mus., vol. 67, pp. 10-12, pl. 4, fig. 1.
 1926. *Mycetopoda falcata* (Higgins) IHERING, Nautilus, vol. 39, p. 116.

This is one of the most interesting shells in the whole group of pearly fresh-water mussels. It resembles *Mycetopoda* but lacks the smooth, shining periostracum and differs in microscopic sculpture, in the falcate form and in the peculiar downward bending anterior end. It resembles also *Solenaia*, especially the species *emarginata* Lea of Siam, of which it is almost an exact miniature. The resemblance is remarkable in that the anterior end of the shell curves abruptly downward in both genera and gives a falcate form to the shells. They also resemble each other in color and in dullness and general appearance of periostracum. They differ in habitat—*Solenaia* living in Southeastern Asia *Mycetopodella* in South America, so far as known at present in the upper Amazon. They differ also in the structure of the periostracum. At present this is the most important difference known. The microscopic sculpture of *Mycetopodella* is composed of numerous radiating striae which prove the shell to belong in the family Mutelidae. *Solenaia* does not have this style of sculpture and this is an indication that it is not a Mutelid. This belief is further strengthened by the anatomy of *Solenaia* which shows it to belong to the Tetragenae in the family Unionidae.

Marshall¹ discusses the microscopic sculpture on the periostracum of *Mycetopodella falcata* and the absence of close relationship between this shell and the genus *Solenaia*. The superficial resemblance between the two genera is remarkable. It is paralleled in other cases in which there is a superficial appearance of relationship or perhaps a real affinity between South American and southeastern Asiatic shells. The genus *Acostaea* (*Mulleria*), for instance, is supposed to include two species, *A. lobata* Ferrussac (the type of the genus), which occurs in

¹ Proc. U. S. Nat. Mus., vol. 67, 1925, pp. 10-12.

the Republic of Colombia, and *A. dalyi* E. A. Smith of India. The widely separated habitats of the two species leads one to suspect that when the anatomy of *Acostaea lobata* becomes known it may differ in important respects from that of *A. dalyi* and cause the latter to be placed in another genus. The anatomy of *A. dalyi* is known, but until the anatomy of *A. lobata* becomes known *dalyi* must rest in the genus *Acostaea*, for wide geographic separation, while usually indicative of lack of close relationship, is not a taxonomic character.

Another instance of resemblance between shells of these two widely separated regions, is in the equilaterally triangular sinulus of South American Anodonta-like fresh-water mussels which is duplicated in Anodonta-like shells of the genus *Pilsbryoconcha* of Siam, Cambodia, Sumatra, and Java. They belong to different families, the former to the Mutelidae and the latter to the Unionidae.

The reason for the abrupt downward bending of the anterior end of *Mycetopodella* and *Solenais* is unknown. Probably it has something to do with enabling the mollusk to make a firm anchorage in the bottom of streams. It calls to mind the anterior end of the genus *Bartlettia* of the family Aetheriidae which is specialized for anchoring purposes.

ANODONTITES GUANARENSIS, new species

Plate 1, figs. 4-6

Shell rather thin, somewhat compressed, outline nearly oval, rounded and narrower in front, bluntly pointed and subtruncate at the rear. Dorsal line nearly straight and making an obtuse angle with the posterior margin. Ventral line curved, slightly swollen just behind the middle, regularly rounding into the anterior margin, which in turn rounds into the dorsal margin. The ventral and dorsal margins form a blunt point just below the middle of the posterior margin. Posterior ridge low and regularly rounded, but emphasized by a broad fuscous stripe radiating from the beak; the posterior area with two similar but narrower fuscous rays. Anterior to the posterior ridge the periostracum is smoothish but with indistinct radiating striae. Anterior half of the shell polished and with a number of radiating lines of rufflings. Posterior portion plentifully covered with low periostracal laminae. Microscopic sculpture of fine radiating striae commonly found in shells of the Mutelidae. Color ashy to brownish olive, the concentric growth lines darker; interior bluish white, highly iridescent around the margin and with iridescent radiating fine lines. Prismatic edging rather broad, pallial line about 5.6 millimeters from the margin.

The type, Cat. No. 365225, U.S.N.M., measures: Length 54 mm.; height, 30 mm.; diameter, 16 mm. It and a paratype, Cat. No. 365226, U.S.N.M., were presented by Dr. Henry Pittier, who collected them in a dried lagoon at Mata Verde, near Guanare, Portuguesa.

Venezuela, December 28, 1925. This locality is in the northwestern part of Venezuela and is drained by the River Portuguesa, which, like almost all streams in Venezuela, is a part of the Orinoco system.

This species is related to several other species but seems to stand in a section by itself. The slight swelling on the ventral margin indicates some relationship to the shells of the group *A. trigonus* Spix, while the radiating ruffings show a resemblance to those of *A. tortilis* Lea and others of that group.

MYCETOPODA PITTIERI, new species

Plate 2

Shell very elongate, nearly a parallelogram, slightly wider posteriorly. Dorsal margin straight, rounding into the posterior margin, and forming an angle with the anterior margin. Beaks set far forward. Ventral margin nearly straight, passing into the posterior margin in a rounded point and curving regularly into the anterior margin. Posterior ridge low and rounded and posterior dorsal area with faint indications of two radiating grooves. Anterior half of the shell smooth and polished, posterior half dull and smoothish but with minute reticulating periostracal lamellae. Whole surface in front of the posterior ridge with faint radiating striae. Front half yellowish to greenish olive with a very dark edging along the margin. Posterior half brownish. Interior bluish, appearing radiately striate, not very iridescent. All the adductor scars but slightly impressed. Pallial line about 9 millimeters from the margin. Prismatic border rather broad.

The type, Cat. No. 365227, U.S.N.M., measures: Length, 104.5 mm.; height, 35 mm.; diameter, 20.5 mm.

Dr. H. Pittier obtained the type and two paratypes (Cat. No. 365228, U.S.N.M.) at the same locality as the preceding species.

This species is most nearly related to *Mycetopoda pygmaea* Spix, from which it differs chiefly in being of much greater size. Its color is different, it lacks the prominent radiating ruffings found on *pygmaea*, its posterior ridge is not so sharply defined, and the anterior dorsal line forms a more angular junction with the anterior margin. The two paratypes are almost uniform in size, color, and other details with the type.

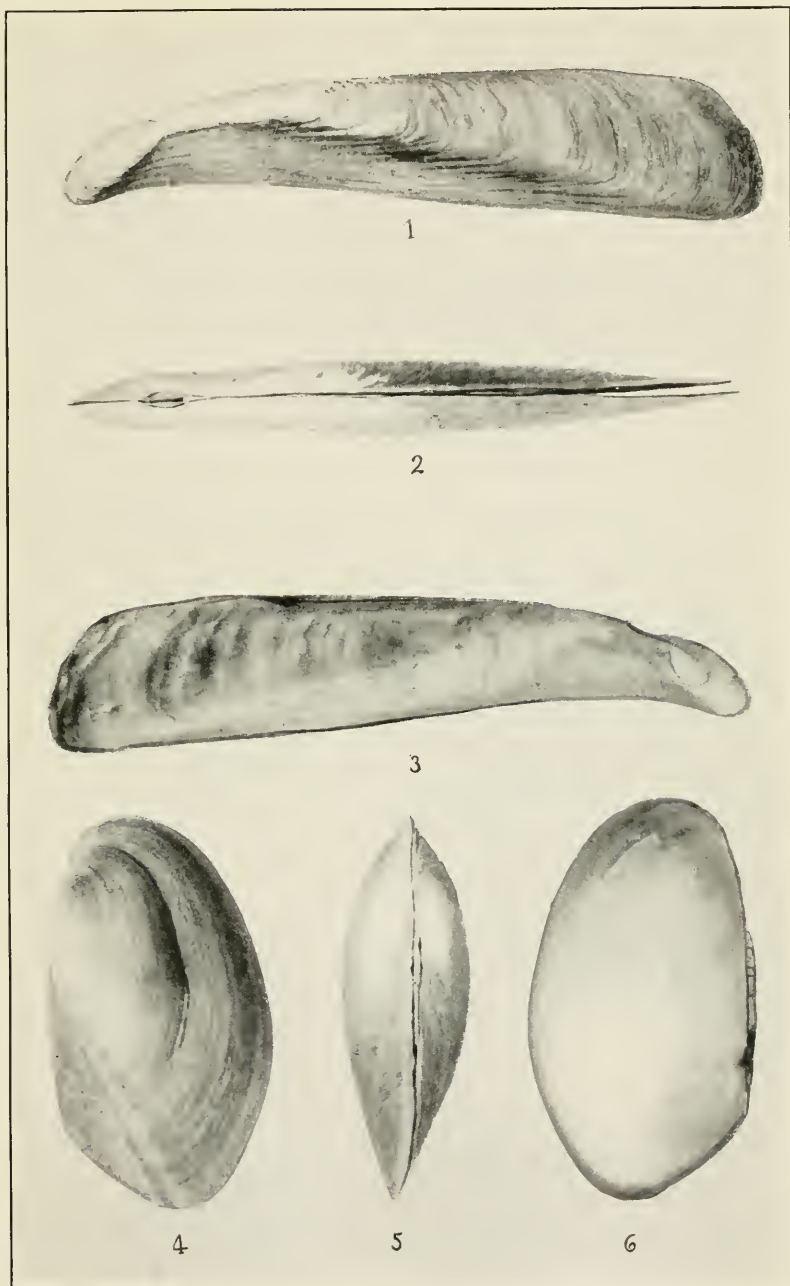
EXPLANATION OF PLATES

PLATE 1

FIGS. 1, 2, 3. *Mycetopodella falcata* (Higgins) Marshall. Type of the new genus.
4, 5, 6. *Anodontites guanarensis*, new species. Type.

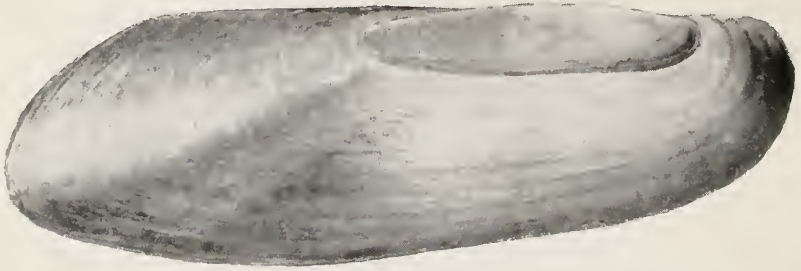
PLATE 2

Mycetopoda pittieri, new species. Type.



MYCETOPODELLA FALCATA AND ANODONTITES GUANARENSIS

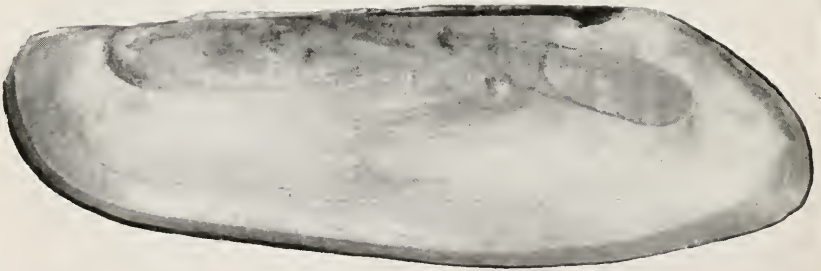
FOR EXPLANATION OF PLATE SEE PAGE 4



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MYCETOPODA PITTIERI, NEW SPECIES

FOR EXPLANATION OF PLATE SEE PAGE 4