A New Species of Columbellid Gastropod from the Old World Tropics

William K. Emerson
Department of Invertebrates
American Museum of Natural History
New York, NY 10024–5192, USA

ABSTRACT

Cotonopsis monfilsi new species, is described from off Senegal, West Africa in 230–500 m. The generic assignment is made on the basis of shell, opercular, and radular characters. The radula is typically columbellid, whereas the shell morphology lacks some characteristics of the "*Strombina*" gastropods. Therefore, the placement in the *Strombina*-group genus *Cotonopsis* is tentative. *Metula dockeryi* new name is proposed to replace *Metula inflata* Dockery, 1984, not *Metula inflata* (Houbrick, 1984).

Key Words: Prosobranchia, Columbellidae, *Cotonopsis*, Buccinidae, *Metula*, west Africa, new species, new name.

INTRODUCTION

During the past five years, we have received from several shell dealers specimens of an apparently new species of columbellid gastropod for study and report. The taxonomic placement of these shells could not be made with certainty until the morphology of the radula was determined. A radula was eventually found and proved to be typically columbellid in form. As a result, this gastropod can be assigned provisionally to the *Strombina*-group genus *Cotonopsis*.

I take pleasure in describing this new species in honor of Paul Monfils, who was the first to call this perplexing species to my attention.

A review of the literature disclosed that a replacement name was required for a fossil species of *Metula*. A new name is provided for *Metula inflata* Dockery, 1984, not *Metula inflata* Houbrick, 1984.

ABBREVIATIONS

AMNH = American Museum of Natural History, New York
LACM = Los Angeles County Museum of Natural History, California.

SYSTEMATICS

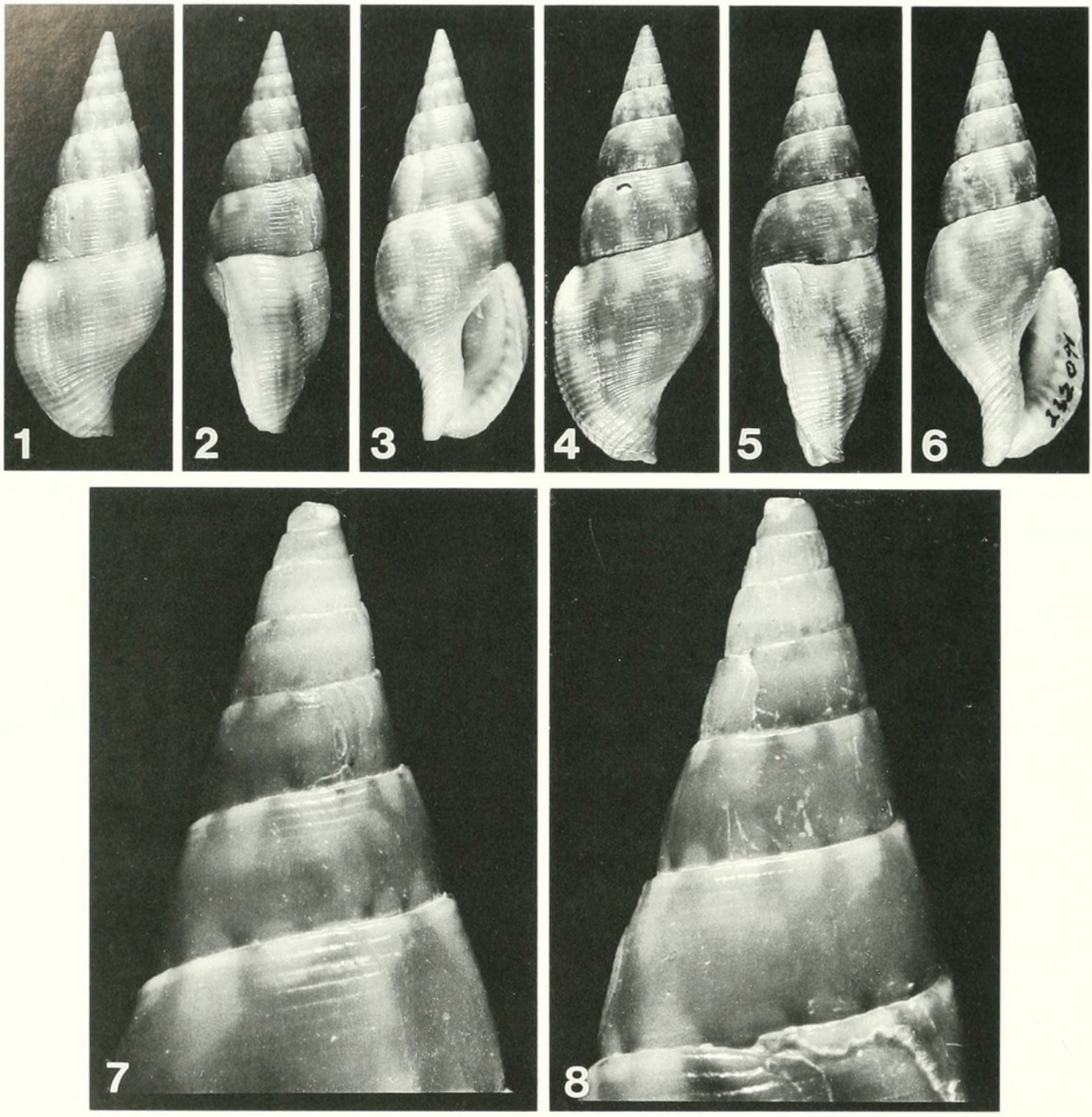
Superfamily: Buccinoidea Rafinesque, 1815
Family Columbellidae Swainson, 1840
Genus *Cotonopsis* Olsson, 1942

Type species (by original designation): *Strombina* (*Cotonopsis*) *panacostariceus* Olsson, 1942, Pliocene of the Burica Peninsula, Costa Rica, Charco Azul Formation

Cotonopsis monfilsi new species
(figures 1–10)

Description: Shell solid, fusiform, whorls inflated without a sutural ramp; protoconch of 3½ smooth, convex whorls; teleoconch of 7½ convex whorls, sculptured with numerous fine spiral lirae, numbering about 18 on the penultimate whorl and about 32 on the body whorl. Some spiral lines bifid; lirae not consistently evenly spaced. Thickened varix formed on body whorl above the rim of the aperture. Aperture ovate, inner lip terminally thin, but with a sublabial ridge with 10 lirate teeth; columella with 4–5 weak folds; siphonal canal open, short, narrow. Fasciole indistinct. Periostracum brownish tan. Background color brownish buff-tan with broken whitish bands below the suture and with axial blotches interrupting the tanish coloration. Aperture white. Operculum thin, corneous, lenticular with a terminal nucleus at edge. Radular ribbon (figs. 9, 10) rachiglossate, typically columbellid (cf. Radwin, 1977, fig. 22b). Rachidian tooth a narrow, nearly rectangular plate. Lateral tooth shaft-like with barbed base, tip of shaft with two hooked cusps.

Material examined: Holotype (AMNH 232519) and 3 paratypes (AMNH 232091) from the type locality; 5 Paratypes (AMNH 232092) dredged in 300–350 m, on muddy bottom, off St. Louis, Senegal, November, 1987, ex-Northeast Natural History Imports; 3 Paratypes (AMNH 232152) dredged in 450–500 m, on muddy-sand bottom, off St. Louis, Senegal, ex-Northeast Natural History Imports; 6 referred specimens (5 specimens, AMNH



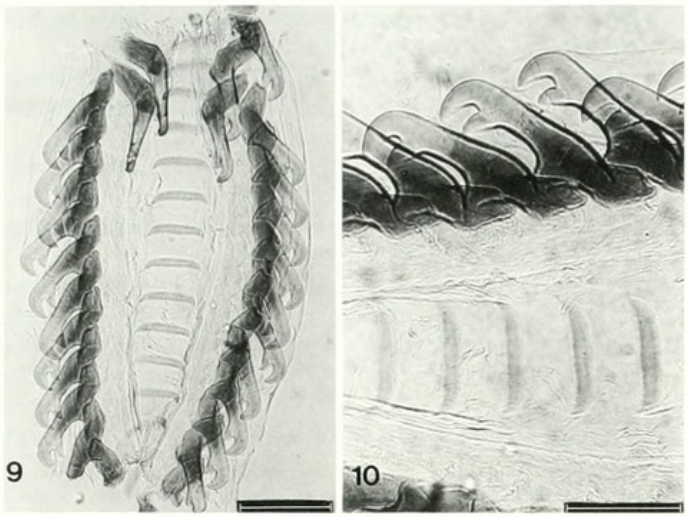
Figures 1–8. *Cotonopsis monfilsi* n. sp. 1–3, holotype (AMNH 232519). 4–6, paratype (AMNH 232091); figs. 1–6 ×1.5. Figs. 7, 8, paratype (AMNH 232092), spire enlarged to show detail of early whorls; figs. 7, 8, 5.0×.

232176; 1 specimen, LACM 146956) dredged on silty-sand bottom, 230–260 m, off Casamance Province, Senegal (12°50′N,15°0′W), ex-Northeast Natural History Imports; 2 referred specimens (AMNH 255056) trawled in deep water from off the Dakar harbor entrance, Senegal (14°40′N, 17°26′W), ex-Mal de Mer Enterprises. See Table 1 for shell measurements.

Type locality: dredged in 300 m off St Louis, Senegal, West Africa, (16°02′N,16°30′W) by Marcel Pin, 1987, ex-Abbey Specimen Shells.

Distribution: Known only from off Senegal, West Africa in 230 to 500 meters.

Remarks: The shells of the present specimens resemble certain "*Strombina*"-group gastropods (such as *Cotonopsis*), but they are also in some respects reminiscent of certain buccinid gastropods (eg. *Pisania*, *Metula*, etc.). Before the nature of the radula was known, I asked several colleagues for their opinions based on the examination of photographs or the study of the specimens. Some of them referred the specimens to the buccinid genus *Pisania* Bivona-Bernardi, 1832, in the subfamily Pisaniinae Gray, 1857:13, formerly credited to Tryon, 1881:98 (see Cernohorsky, 1971:138; 1975:192, Beu and Maxwell, 1987:56; and Bouchet, 1988:149, for comments on the subfamilial status of Pisaniinae in Buccinidae, and



Figures 9, 10. Cotonopsis monfilsi n. sp. 9, holotype (AMNH 232519), radula, about one-third of the ribbon. 10, detail of the rachidian teeth; fig. 9, scale bar = 100 μm, fig. 10, scale bar = 200 μm, courtesy of J. H. McLean.

its rejection without an explanation at the subfamilial level by Ponder and Warén, 1988:305). The resemblance of the new species to Recent species of *Charitodoron* (Mitridae) from South Africa was also suggested (see Lozouet, 1991:206, figs. 26–30). Other colleagues believed the Senegalese specimens to be an undescribed columbellid species referable to *Cotonopsis* (*sensu stricto*).

With the recovery of a radula from a dried body of the new species, the placement of the new species in the family Columbellidae can be confirmed. The radular characters are typically columbellid in form (figs. 9, 10). As in *Cotonopsis argentea* (Houbrick, 1983:352, fig. 2), the radular dentition consists of rachidian teeth that are thin, narrow and form a rectangular plate. A wide space separates the rachidian teeth from the lateral teeth, which are composed of a shaft with an enlarged base and are tipped with two hooked cusps. The shells of the new species possess the thickened varices of *Strombina*-group gastropods, but the apertural dentition of the inner lip differs in having evenly spaced lirate denticles of equal size. These are comparable to those of the buccinid genus *Bartschia* Rehder (1943:199, pl. 20, fig. 17; Olsson and Bayer, 1972:924, fig. 14). Furthermore, *Bartschia significans*, the type species, has strongly cancellate sculpture, whereas the new species possesses fine spiral lirae. The radular characters of *Bartschia* are unknown, but on shell features, Beu and Maxwell (1987:62) believe *Bartschia*, together with *Metula* H. and A. Adams (1853: 84; Emerson, 1986:27), to be closely related to the buccinid genus *Colubraria* Schumacher, 1817. Some of the western Atlantic species of *Metula* [e.g. the West Indian *M.* (*Agassitula*) *agassizi* Clench and Aguayo, 1941:179, pl. 14, fig. 4; Olsson and Bayer, 1972:917, fig. 11 and the east African *M.* (*Kanamarua*) *rehderi* (Kilburn, 1977: 193, fig. 21)] superficially resemble the new species. Bouchet (1988:150, fig. 1) illustrated the typically buccinid radula of his new species, *Metula africana*, and concluded the radular morphology is significantly different from that of the buccinid genus *Pisania*.

Table 1. Shell dimensions and proportions of the specimens of *Cotonopsis monfilsi* n. sp. n = 20 specimens. Width includes terminal varix on body whorl. Measurements in mm.

Type specimens	Height	Width	Width–height
*AMNH 232519 (holotype)	40.1	14.9	0.37
AMNH 232091 (paratype 1)	41.7	15.2	0.36
AMNH 232091 (paratype 2)	37.2	13.7	0.37
AMNH 232091 (paratype 3)	37.1	13.6	0.37
AMNH 232092 (paratype 1)	41.1	14.4	0.35
AMNH 232092 (paratype 2)	37.9	13.4	0.35
AMNH 232092 (paratype 3)	37.1	13.8	0.35
AMNH 232092 (paratype 4)	37.5	13.6	0.36
AMNH 232092 (paratype 5)	36.2	12.8	0.35
AMNH 232152 (paratype 1)	40.4	14.6	0.36
AMNH 232152 (paratype 2)	36.9	12.8	0.35
AMNH 232152 (paratype 3)	34.5	12.6	0.37
Referred specimens			
AMNH 232176, a	39.7	14.5	0.37
AMNH 232176, b	36.3	13.8	0.38
AMNH 232176, c	36.1	13.9	0.39
AMNH 232176, d	35.0	14.0	0.40
AMNH 232176, e	34.9	13.7	0.40
LACM 146956	36.2	13.9	0.38
AMNH 255056, a	39.1	14.1	0.36
AMNH 255056, b	38.6	13.4	0.35
Mean	37.1	13.8	0.36
Range	34.5–41.7	12.6–15.2	0.35–0.40

* Radula extracted.

The placement of the new species in the genus *Cotonopsis* based on shell characters is tentative. As the genus is defined by Jung (1989:158), the teleoconch whorls are smooth or axially sculptured. In the new species, the teleoconch sculpture is composed of fine spiral lines and no axial sculpture is present. *Cotonopsis* is represented in the tropical western Atlantic by one species (*C. argentea*). The remainder of the 15 species of *Cotonopsis* recognized by Jung (1989), 2 fossil and 12 living species, occur in the west American tropical zone. Previously, the *Strombina*-group gastropods were believed to be restricted to the New World tropics, dating from the Miocene to the present, with only 3 of the 35 living species occurring in the western Atlantic (Jung, 1989:4). Therefore, the presence of a species of *Cotonopsis* in west African waters may reflect a separate lineage of these columbellids that may eventually be determined to require recognization as a new genus-group taxon.

REPLACEMENT NAME FOR A HOMONYM

During my review of the literature for this paper, I noted a homonymic species-group name in *Metula* (Buccinidae). *Metula* (*Metula*) *inflata* Dockery *in* MacNeil and

Dockery (1984:331, pl. 52, fig. 3; published *in* "November, 1984", *teste* D. T. Dockery III, in *litt.*, Dec. 9, 1991) is a junior secondary homonym of *Acamptochetus* [=*Metula*] *inflatus* Houbrick (1984:421, fig. 1; published July 6, 1984). I here rename *Metula inflata* Dockery, 1984 (not *Metula inflata* [Houbrick, 1984]), as *Metula dockeryi* Emerson, NEW NAME. Dockery's taxon is a Paleogene fossil from Mississippi and Houbrick's taxon is a Recent Philippine species.

Acamptochetus Cossmann (1901:123; type species by original designation: *Murex mitraeformis* Brocchi, 1814) is a junior subjective synonym of *Metula* H. and A. Adams (1853:84; type species by subsequent designation Kobelt, 1876: *Buccinum clathratum* Adams and Reeve, 1850, [not Kiener, 1834, nor Anton, 1839] = *Metula amosi* Vanatta, 1913:22), as noted by Emerson (1986:27) and Beu and Maxwell (1987:62) and accepted by Bouchet (1988:149).

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