



A new species of *Buccinum* from California (Gastropoda: Buccinidae)

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Abstract

Buccinum macleani n. sp., from off Fort Bragg, Mendocino County, California, is described. The new species is placed tentatively in the genus *Buccinum* (*s.l.*), based on radular characteristic and shell morphology. It differs from all other eastern Pacific *Buccinum* by its very compressed profile.

Introduction

In October of 2000 during a National Marine Fisheries Service (NMFS) fisheries resource assessment survey off of California, an unusual gastropod, with a very low, broad profile was collected. Based on the particular shell characters, Dr. James H. McLean believed it to be a member of the Laubierinidae genus *Akibumia*. However, a recent examination of the radula shows it instead to be Buccinoidea, family Buccinidae.

This unusual snail is unique amongst northeast Pacific Buccinidae in its broad compressed form. Unfortunately the specimen lacked an operculum and it is unknown whether the operculum was lost or is in fact absent. Based on radular characteristics (Tiba & Kosuge 1984, Golikov & Sirenko 1988) the species is placed in the subfamily Buccininae, and tentatively assigned to genus *Buccinum* Linnaeus, 1758 (*s.l.*). The new species differs from other *Buccinum* in the region in its compact form and low profile, and possibly in the absence of an operculum. It is possible that a new genus will need to be erected for this unusual species, but at present it seems prudent to wait until more material becomes available.

Systematics

Buccinoidea Refinesque, 1815

Buccinidae Refinesque, 1815

Buccinum Linnaeus, 1758 (*s.l.*)

Type species. *Buccinum undatum* Linnaeus, 1758, subsequent designation (Montfort 1810: 463).

Description. Shell with tall profile, inflated whorls; aperture large, canal short, reflected; operculum oval, concentric, with central or sub-central nucleus. Radula rachiglossate, bearing rachidian, two lateral teeth; rachidian tooth with 4–6 subequal denticles, lateral teeth with three various-sized denticles.

Buccinum macleani spec. nov.

(Figure 1A–E)

Type material. Holotype LACM 3603 (*leg.* Gerold Hoff, trawled, October, 2000). Height 23.6 mm, diameter 18.5 mm.

Type locality. Off Fort Bragg, Mendocino County, California, in 378 m, 39°34.6'N, 124°7.5'W, RV *Miller Freeman*, cruise 2000-12, station 131.

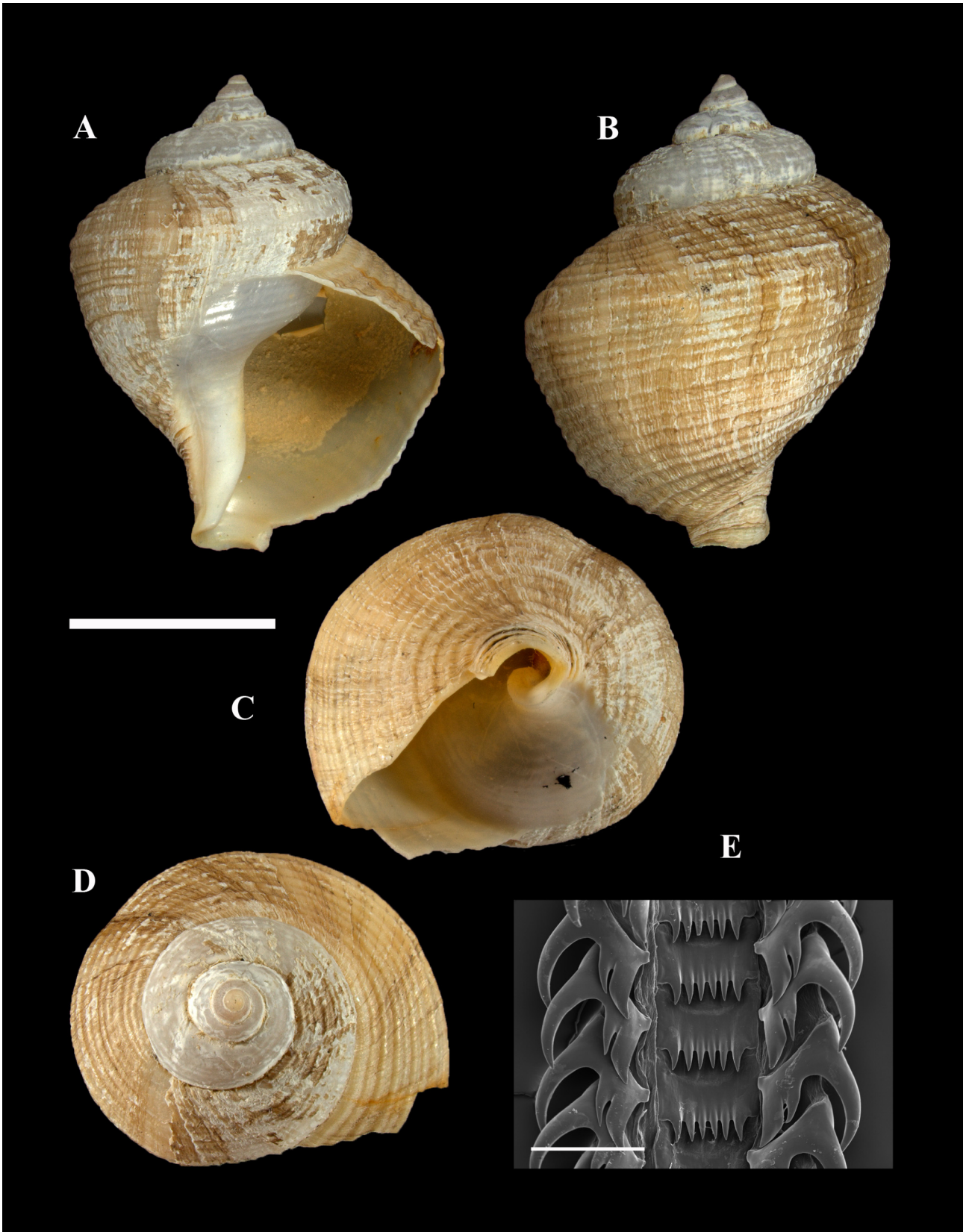


FIGURE 1A–E. *Buccinum macleani* n. sp., holotype. A–D. Shell. Scale bar = 10 mm. E. Radula. Scale bar = 200 μ m.

Description. Small, height 23.6 mm, diameter 18.5 mm. Teleoconch c. 3–3.5 whorls, junction with protoconch unclear because of abrasion; height 1.28 times diameter; with moderately tall, unusually strongly

stepped spire, inflated sutural ramp, weakly subangulate shoulder, flat to faintly concave, basally tapering area around centre of last whorl, relatively short, sharply contracted base with short, widely open siphonal canal. Canal with lightly thickened rim, apparently protruding because of broken outer lip. Suture weakly channeled, positioned towards base of flattened, tapering area of previous whorl, leaving inwardly inclined, inflated area below shoulder exposed on penultimate whorl, producing unusually short, stepped spire. Outer lip thin, simple, most of lower part broken back slightly on only known specimen; inner lip a smooth, even, narrow, clearly defined area lacking sculpture on previous whorl. Sculpture of many low, narrow, closely spaced spiral cords of semicircular cross-section, alternating regularly in prominence over ramp and periphery, but only more prominent cords present over flattened area of last whorl and base; interspaces each filled by one weaker cord over ramp, periphery, each slightly wider than one cord over flattened area and base; eight cords on sutural ramp; 20 cords on base and canal, including peripheral cord. Weak growth ridges cross spiral cords at irregular intervals, particularly above aperture, over last quarter of last whorl, but many resulting from injury; complete growth lines on dorsum revealing shallow sinus in outer lip with apex at periphery. Aperture large, widely open; posterior (adapical) end of aperture of last whorl descending penultimate whorl to near base of flattened area, revealing more of spire than previously, increasing stepped spire effect. Exterior white with smooth, pale yellow-brown periostracum, inner lip bluish white. Protoconch relatively large, but like early spire whorls severely eroded.

Radular morphology typical for *Buccinum*. Laterals with three denticles, rachidian with multiple, subequal denticles (Tiba & Kosuge 1984). Rachidian tooth with six denticles of nearly equal length, base rectangular. Lateral teeth with three denticles, outer denticle very long, strongly curved; central denticle very small, less than $\frac{1}{4}$ the length of outer denticle, pointed, set far apart from it; inner denticle about $\frac{1}{2}$ as long as outer one, broad, chisel shaped, separated from central denticle by a deep, narrow slot.

Distribution. Only known from type locality.

Comparison. *Buccinum macleani* vaguely resembles other *Buccinum* in the region (Dall 1921), particularly, *B. strigillatum* Dall, 1891 and *B. fucanum* Dall, 1907, in its numerous spiral cords and broad aperture, but differs radically in its very compressed profile, subangulate whorls and broader interspaces between spiral cords.

Etymology. It is with great pleasure that I name this unique species after my friend and mentor James H. McLean, a brilliant student of Californian gastropods.

Remarks: The possibility exists that this is mutated specimen of one of the known species of *Buccinum*, but that question must await the collection of more material from near the type locality.

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