

---

**Review of the genera *Otitoma* Jousseaume, 1880 and *Thelecytharella* Shuto, 1969 with the description of two new species  
(Gastropoda: Conoidea: Pseudomelatomidae) from the southwest  
Pacific Ocean**

Shawn G. Wiedrick  
2309 East Santa Clara Avenue, Apt. D  
Santa Ana, California 92705, USA  
shawnwiedrick@hotmail.com

**KEYWORDS.** Gastropoda, Pseudomelatomidae, *Otitoma* sp., *Otitoma astrolabensis* n. sp., "*Otitoma*" *fergusoni* n. sp., Cook Is., Philippines, Fiji, Pacific Ocean, southern Pacific.

**ABSTRACT.** Species within the genera *Thelecytharella* Shuto, 1969 and *Otitoma* Jousseaume, 1898 are reviewed and compared. *Otitoma* sp., *Otitoma astrolabensis* n. sp. and "*Otitoma*" *fergusoni* n. sp. are described from the Pacific Ocean, and compared with: *Thelecytharella vitrea* (Reeve, 1845), *Otitoma cyclophora* (Deshayes, 1863), †*Thelecytharella oyamai* (Shuto, 1965), *Thelecytharella crokerensis* (Shuto, 1983), and *Thelecytharella kecil* Sysoev, 1997.

## INTRODUCTION

The generic assignment of *Otitoma* Jousseaume, 1880 and *Thelecytharella* Shuto, 1969 has historically been confused with several other turrid genera. The genera *Thelecytharella* Shuto, 1969 (Type species: †*Agladrillia oyamai* Shuto, 1965) from Kyushu, Japan, *Lioglyphostomella* Shuto, 1970 (Type species: *Drillia timorensis* Schepman, 1913) from Indonesia, and *Metaclathurella* Shuto, 1983 (Type species: *Austropusilla (Metaclathurella) crokerensis* Shuto, 1983) from Arafura Sea, Australia share some similarities in general appearance. The second and third names of Shuto were not compared to the earlier name. Kilburn (1995) placed Shuto's later names together in the synonym of *Thelecytharella* as did Sysoev (1997). Kilburn (1995: 265) described one new *Thelecytharella* species

from the southwestern Indian Ocean with comparisons to other Indo-Pacific species in the genus. Later Kilburn (2004) determined that *Otitoma* Jousseaume, 1898 was a senior synonym of *Thelecytharella* and regarded *Otitoma* as the valid taxon. *Otitoma cyclophora* (Deshayes, 1863) was illustrated in Hedley (1922: 332), Cernohorsky (1978:160), Hasegawa, and others, (2000: 663), Kilburn (2004) and Zheng (2007: 35). Bouchet, and others, (2011: 293) recognize *Lioglyphostomella*, and *Otitoma* as valid genera, which is here recognized as well. Shell features of these genera and *Thelecytharella* differ greatly and are therefore regarded as valid. Material examined in the LACM collection and the personal collection of the author necessitated the description of two new species of *Otitoma* and one new genus.

**Abbreviations**

AMS: Department of Malacology,  
Australian Museum, Sydney, Australia.  
NHMUK: The Natural History Museum,  
London, United Kingdom.  
KUG: Paleontological Laboratory,  
Department of Geology, Kyushu University,  
Japan.  
LACM: Natural History Museum of Los  
Angeles County, California, U.S.A.  
MNHN: Muséum national d'Histoire  
naturelle, Paris, France.  
NMWC: National Museum of Wales,  
Cardiff, United Kingdom.  
SW: collection of the author  
†: fossil taxa

**SYSTEMATICS**

Systematically, the arrangement of genera within Turridae and turritiform conid families and subfamilies has recently been in transition. Revisions within Conoidea (McLean, 1971; Taylor, and others, 1993; Rosenberg, 1998; Bouchet & Rocroi 2005: 256) describe the systematic order based on forgut anatomy and morphological characteristics. Phylogenetic studies using molecular characteristics (Puillandre, and others, 2008; Puillandre, and others, 2009) clarified portions within the complex Conoidea. Other studies by use of molecular phylogeny of the Conoidea by Bouchet, and others, (2011) and Puillandre, and others, (2011) in which they reassigned several synonymized genera back to the generic level. A key to the classification of the genera *Thelecytharella* Shuto, 1969 and *Otitoma* Jousseume, 1898 under the family Pseudomelatomidae is provided below:

**Family PSEUDOMELATOMIDAE**

Morrison, 1965

1. Sinus open.....*Thelecytharella*
- Sinus restricted.....2

2. Protoconch bulbous.....*Otitoma*
- Protoconch tabulate....."*Otitoma*"

Genus *Thelecytharella* Shuto, 1969

*Thelecytharella* Shuto, 1969: 208 (as a subgenus of *Euclathurella* Woodring, 1928). Type species (o. d.): †*Agladrillia oyamai* Shuto, 1965, Miocene of Philippines and Japan.

**Diagnosis:** The genus *Thelecytharella* has several distinct shell characteristics that differentiate it from *Otitoma*, which include a broadly domed protoconch, open posterior sinus and weak callus. Sculpture of axial ribs is absent to moderate. As stated by Kilburn (2004), *Otitoma* Jousseume, 1898 has priority over *Thelecytharella* based on the type specimen *Otitoma otitoma* Jousseume, 1898. Shuto (1969) designated †*Agladrillia oyamai* Shuto, 1965, as the type species of *Thelecytharella* which exhibits significantly different morphological features than that of *Otitoma*. The following species are included in the *Thelecytharella* based on literature examined, refer to Tucker (2004) for omitted literature references:

*carnicolor* Hervier, 1896, *Drillia* [= *Mitrellatoma carnicolor*]  
*crokerensis* Shuto, 1983, *Austropusilla* (*Metaclathurella*)  
†*kagoshimaensis* Shuto, 1965, *Turridrupa*  
*kecil* Sysoev, 1997, *Thelecytharella*  
*kwandangensis* Schepman, 1913, *Drillia* [= *Lioglyphostomella kwandangensis*]  
*metuloides* Kilburn, 1995, *Thelecytharella*  
*mitra* Kilburn, 1986, *Mitrellatoma* [= *Mitrellatoma carnicolor*]  
*oneili* Barnard, 1958, *Drillia*  
†*oyamai* Shuto, 1965, *Agladrillia*  
*timorensis* Schepman, 1913, *Drillia* [= *Lioglyphostomella timorensis*]

*vitrea* Reeve, 1845, *Pleurotoma*

1. Axial sculpture absent or faint ..... 2  
     Axial sculpture present in early whorls..... 4
2. Spiral cords weak or absent.....*vitrea*  
     *a*  
     Spiral cords strong.....3
3. Profile pupoid.....*kecil*  
     Profile rhomboid ovate.....*crokerensis*
4. Subsutural cord weak.....†*oyamai*  
     Subsutural cord strong, distinct.....5
5. Spiral cords subtle, weak.....*metuloides*  
     Spiral cords distinct.....6
6. Ribs strong, anterior canal blunt.....*oneili*  
     Ribs weak, anterior canal elongate.....†*kagoshimaensis*

***Thelecytharella vitrea* (Reeve, 1845)**

**Figure 1**

*Pleurotoma vitrea* Reeve, 1845: pl. 30, fig. 300.

*Mangilia vitrea*.—H. & A. Adams, 1853: 100.

*Mangilia vitrea*.—Tryon, 1884: 254, pl. 23, fig. 95.—Boettger, 1895: 13.—Hidalgo, 1904: 119.—Faustino, 1928: 322.

*Thelecytharella vitrea*.—Kilburn, 1995: 268, fig. 12 (Lectotype illustrated).

**Type Material:** Lectotype (of Kilburn, 1995), NHMUK (number unknown), height 5.5 mm, width 1.7 mm (fig. 1).

**Distribution:** Singapore (emended by Kilburn, 1995:268) and Mindanao, Philippines at depths from 13-467 m (Kilburn, 1995: 268).

**Diagnosis:** *Thelecytharella vitrea* is characterized by numerous spiral cords, blunt apex and complete absence of axial ribs.

**Description:** Kilburn (1995) described the lectotype as follows, “Sculptured by close-set spiral cords (giving surface a spirally grooved appearance); subsutural cord slightly prominent and demarcated by narrow furrow; penultimate whorl with 9 cords, of which posterior 3 are rounded and more deeply incised than anterior ones; base of body whorl with 13 strong cords that become progressively more rounded anteriorly. Moderately coarse growth lines but no axial ribs. Protoconch domed, limits ill-defined, breadth about 0.75 mm.”

**Discussion:** *Thelecytharella vitrea* was originally described by Reeve (1845) from Singapore and Kilburn (1995: 268) later figured the lectotype specimen of *Pleurotoma vitrea* restricting *T. vitrea* to Mindanao, Philippines.

***Thelecytharella kecil* Sysoev, 1997**

**Figure 2**

*Thelecytharella kecil* Sysoev, 1997: 344-345, fig. 58.

**Type Material:** Holotype, MNHN (number unknown), height 5.5 mm, width 1.6 mm.

**Distribution:** Known only from type locality, Karubar, Kai Islands, Indonesia in 448-467 m (05° 31'S, 132° 54'E).

**Diagnosis:** *Thelecytharella kecil* is characterized by its small size, slender, pupoid profile, strong spiral sculpture, large bulbous smooth protoconch, open non-callused sinus and absence of axial ribs.

**Description:** Shell slender but solid, small-sized for the genus. Color white with dominant spiral sculpture of distinct cords. Protoconch smooth, with 2 large domed whorls, tip dissolved. Teleconch whorls with one strong subsutural cord followed by two well-spaced cords, remaining cords tight, spaced evenly towards base. 18-20 spiral cords on final whorl. Aperture long and slender with no callus near suture, lip slightly thickened.

**Discussion:** *Thelecytharella kecil* was assigned to the correct genus based on the open posterior canal and domed apex. *Thelecytharella kecil* is most allied with *T. vitrea* and may prove to be synonymous through molecular studies. *Thelecytharella kecil* is reminiscent of *T. vitrea* in size and shape and differing with smooth body whorls, possibly suggesting a worn specimen of *T. vitrea*.

### ***Thelecytharella crokerensis* (Shuto, 1983)**

#### **Figure 5**

*Austropusilla (Metaclathurella) crokerensis*  
Shuto, 1983: 16, figs. 11-14, pl. 2 figs. 1-2.

*Thelecytharella* [sic] *crokerensis*.—Kilburn, 1995: 267.

*Thelecytharella crokerensis*.—Sysoev, 1997: 344.

**Type Material:** Holotype, AMS C 134692, height 7.9 mm, width 2.9mm.

**Distribution:** Known only from the type locality, Arafura Sea, approximately 45 miles north of Croker Island, Northern Territory, Australia (10° 17'S, 132° 38'E) in 65 m

**Diagnosis:** *Thelecytharella crokerensis* is characterized by its medium size, distinct spiral cords, heavily thickened outer lip and absence of cords above shoulder.

**Description:** Shell elongate, with slender whorls, medium-sized for the genus. Color white with dominant spiral sculpture of distinct cords. Protoconch smooth, with 1-2 acutely domed whorls. Aperture long and narrow, well developed at base, thickened outer lip, posterior sinus open with callus somewhat developed and separated from previous whorl. Subsutural cord followed by a shoulder void of spiral sculpture. Body whorls with 24 defined spiral cords and no axial ribs.

**Discussion:** *Thelecytharella crokerensis* (Shuto, 1983: 16) was originally described under the generic/subgeneric heading *Austropusilla (Metaclatharella)* which *Metaclatharella* was later synonymized with *Thelecytharella* by Kilburn (1995: 262) and Sysoev (1997: 344). Kilburn also mentioned that *Austropusilla* s.s. differs in having a translucent shell, lack of subsutural cord and furrow, very fine sculpture and possesses neither a stromboid notch nor parietal pad. Species of *Austropusilla* are additionally recorded from temperate Australian and South African waters. Morphologically, *T. crokerensis* agrees well with characteristics of the genus *Thelecytharella*. *Thelecytharella crokerensis*

is most closely allied with *T. oyamai*. *Thelecytharella crokerensis* characterized by its smaller size, broader profile, less conical apex, absence of axial ribs and more defined siphonal canal.

†*Thelecytharella oyamai* (Shuto, 1965)  
**Figures 3-4**

†*Agladrillia oyamai* Shuto, 1965: 162, pl. 33, figs. 1-3, 8; text figs. 7 and 17.—Higo & Goto, 1993: 280, fig. 4072.

†*Euclathurella (Thelecytharella) oyamai*.—Shuto, 1969: 209, pl. 17, figs. 4, 10, 14; pl. 19 fig. 20; pl. 21 figs. 23-24, text-fig. 38.

**Type Material:** Holotype, KUG GK-M 8116 height 12.0 mm, width 4.0mm. Paratypes. KUG GK-M 8117, height 11.7 mm, width 4.0mm; KUG GK-M 8118; KUG GK-M 8119, height 7.8mm, width 3.0mm.

**Type Locality:** Holotype, east and northeast sea cliffs at Moeshima shell beds, Kagoshima Bay, late Pleistocene, South Kyushu, Japan (31° 37'N, 130° 43'E).

**Distribution:** Late Pleistocene, South Kyushu, Japan and late Pliocene-upper Ulian Formation, Panay Island, Philippines (Shuto, 1965, Shuto, 1969).

**Diagnosis:** †*Thelecytharella oyamai* is characterized by its large size, separated posterior callus, thickened outer lip, wide cordless region under subsutural cord and presence of faint axial ribs on teleoconch whorls.

**Description:** Shell large-sized for the genus, elongate, with slender whorls. Color white with fine spiral cords. Protoconch conical, smooth, with two subtly domed whorls.

Teleoconch whorls with one strong subsutural cord, remaining cords widely spaced, basal cords closer. 22 spiral cords on final whorl. Aperture long and narrow, thickened outer lip, sinus open with callus well developed but separated from previous whorl.

**Discussion:** †*Thelecytharella oyamai* was originally described by Shuto (1965: 162) under the genus *Agladrillia*, which is now assigned to the Drilliidae based on studies by Taylor, and others, (1993) and Bouchet, and others, (2011). Shuto (1969: 209) reassigned the species to *Metaclathurella (Thelecytharella)* and designated it as the type species of *Thelecytharella*. On the basis of an open sinus, domed apex and subtle ribbing, †*T. oyamai* is retained in the genus *Thelecytharella*. Similar to *T. crokerensis*, †*T. oyamai* is much larger, more slender with subtle axial ribs on the teleoconch whorls.

Genus *Otitoma* Jousseume, 1898  
*Otitoma* Jousseume, 1898: 106. Type species (o. d.): *Otitoma ottitoma* Jousseume, 1898, Aden, Yemen.

**Diagnosis:** Bulbous protoconch, commonly buldges past proceeding whorl, absent to moderate ribbing, restricted, oval shaped posterior sinus and thick robust callus. Kilburn (2004) recognized characteristic features of the genus *Otitoma*. The following species are included in *Otitoma* based on literature examined, refer to Tucker (2004) for omitted literature references:

*cyclophora* Deshayes, 1863, *Pleurotoma deluta* Gould, 1860, *Daphnella gouldi* Yen, 1944, *Hemidaphne lirata* Reeve, 1845, *Pleurotoma*

*mitra* Kilburn, 1986, *Mitrellatoma*  
 [= *Mitrellatoma mitra*]  
*pura* Gould, 1860, *Mangelia* [= *Hemidaphne*  
 *gouldi*]  
*rubignosa* Hinds, 1843, *Clavatula*

1. Color pattern  
present.....*deluta*  
Color pattern  
absent.....2
2. Profile short,  
stout.....3  
Profile tall,  
slender.....4
3. Protoconch  
acute.....*rubignosa*  
Protoconch  
bulbous.....*sp.*
4. Axial sculpture absent or  
faint.....5  
Axial sculpture  
present.....*astrolabensis* n. sp.
5. Outline  
fusiform.....*lirata*  
Outline subpupoid,  
elongate.....6
6. Apex  
acute.....*gouldi*  
Apex  
bulbous.....*cyclophora*

***Otitoma cyclophora* (Deshayes, 1863)  
Figures 6-9**

*Pleurotoma cyclophora* Deshayes, 1863:  
111-112, pl. 39, figs. 19-21.

*Daphnella crenulata*.—Pease, 1868: 221, pl.  
15, fig. 20.—Tryon, 1884:304, pl. 25, fig.  
55.—Johnston, 1994: 11, pl. 7, fig. 3.  
(Type locality: Howland Island,  
Polynesia)

*Clathurella cyclophora*.—G. & H. Nevill,  
1875: 88.—Tryon, 1884: 292, pl. 19, fig.  
54.

*Mangelia cyclophora*.—von Martens, 1880:  
228.

*Otitoma ottitoma*.—Jousseume, 1898:  
(Type locality by neotype: Aden, Yemen,  
NMWC).

*Hemidaphne cyclophora*.—Hedley, 1922:  
332 pl. 54, fig. 168.—Higo & Goto, 1993:  
313, fig. 4615.—Hasegawa, and others in  
Okutani, 2000: 663, fig. 221.—Chang,  
2001: 94, figs. 106 & 106b and p. 185.—  
Anonymous, 2007: 35, fig. 19.

*Otitoma ottitoma* [sic].—Fulton, 1922: 27.  
*Daphnella cyclophora*.—Kuroda & Habe,  
1952: 52.

*Daphnella (Hemidaphne) cyclophora*.—  
Powell, 1966: 124.—Cernohorsky, 1978:  
160, pl. 57 fig. 4.—Higo, and others,  
1999: 328.

*Antimitra crenulata*.—Powell, 1966: 135.

*Austropusilla cyclophora*.—Zhenguo, 1995:  
287, pl.2, fig 18.

*Kermia subcylindrica*.—Chang, 2000: 3, fig.  
236a.

*Otitoma cyclophora*.—Kilburn, 2004: 265,  
figs. 2-14.—Tröndlé & Boutet, 2009: 40.

**Type Material:** Of *Pleurotoma cyclophora*,  
(holotype lost), height 7.0 mm, width 2.0  
mm, of *Daphnella crenulata*, lectotype (of  
Johnson, 1994) ANSP 15694, paralectotype  
MCZ 221177, of *Otitoma ottitoma*, neotype  
(of Kilburn (2004: 265) NMWC -  
1955.158.33.58, height 6.5 mm, width 2.5  
mm.

**Type Localities:** Of *Pleurotoma*  
*cyclophora*, Réunion Island, Indian Ocean.,  
of *Daphnella crenulata* Howland Island,  
central Pacific Ocean, of *Otitoma ottitoma*,  
Aden, Yemen.

**Distribution:** South Yemen and southern Red Sea, south to northern Mozambique and Mascarene Islands; Queensland, Australia to French Polynesia; Philippines to Japan.

**Material Examined:** Hypotype [LACM 178786] from Mactan Island, Cebu Province, Philippines in 90-100 m (fig. 6-9), [=SW07-70]; two specimens from Balicasag Island, Bohol Province, Philippines in 80-100 m [SW04-70]; one specimen from Bantayan Island, Cebu Province, Philippines in 80-100 m [SW05-68]; one specimen from Bataan Island, Bataan Province, Philippines in 10-15 m [SW06-115]; two specimens from Linapacan Island, Palawan Province, Philippines in 150 m [SW05-67]; two specimens from Mactan Island, Cebu Province, Philippines in 200-250 m [SW08-57]; four specimens from Mactan Island, Cebu Province, Philippines in 100-250 m [SW09-33].

**Diagnosis:** *Otitoma cyclophora* is characterized by its medium size, distinct spiral cords, nearly closed sinus, thick subsutural cord, smooth apex and absence or faint axial ribs.

**Description:** Shell elongate, subpupoid, with slender whorls, medium-sized for the genus. Color light tan with detailed spiral cord sculpture, sometimes with faint axial ribs. Protoconch smooth, with 1½-2 bulbous whorls sometimes protruding further than the preceding whorl. Teleconch whorls with one strong, callused subsutural cord, following cords weaker. Final whorl with 16-18 spiral cords per whorl with various secondary cords between. Aperture long and narrow, sinus constricted, callus at suture thick, recurved.

**Discussion:** *Otitoma cyclophora* has been described numerous times under many different generic names. Kilburn (2004) re-introduced *Otitoma* as a senior subjective synonym of *Thelecytharella* Shuto, 1969. *Otitoma cyclophora* is the most widely spread Indo-Pacific species in its genus with records from Mozambique to Yemen (Kilburn, 2004), Australia (Hedley, 1922), French Polynesia (Kilburn, 2004; Tröndlé & Boutet, 2009), Philippines (here cited), Taiwan (Chang, 2000: 4, fig. 236a) and Japan (Hasegawa, and others, 2000). *Otitoma cyclophora* is easily separated from other species in this genus by the tightly spaced spiral cords, nearly closed sinus, heavily callused upper section of posterior sinus that attaches to previous whorl and immediate continuation of spiral cords after subsutural cord.

*Otitoma* sp.

**Figures 10-13**

**Material Examined:** Hypotype [LACM 178787], 20 specimens from Linapacan Island, Palawan Province, Philippines in 150 m [=SW05-67]; two specimens from Zamboanga, Zamboanga del Sur Province, Philippines in 9-18 m [LACM 81-7] collected by J.H. McLean; one specimen from Zamboanga, Zamboanga del Sur Province, Philippines in .3-1.2 m [LACM 81-6] collected by J.H. McLean; one specimen from Pelangi and Putri inlets, Pulau-Pulau Siebo Id., off Java, Indonesia in .5-2 m [LACM 86-162] collected by J.H. McLean & E. Abbott; one specimen from Pelangi and Putri inlets, Pulau-Pulau Seribu Id., Jakarta Raya, Java, Indonesia in 10-30 m [LACM 86-163] collected by J.H. McLean; one intertidal specimen from Bali Sol Hotel, Nusa Dua, Bali, Indonesia [LACM 86-164] collected by J.H. McLean

& E. Abbott; six specimens from off Ajer (Gili Air) and Meno islets, Lombok Id., Indonesia in 5-20 m [LACM 88-63] collected by J.H. McLean & H. Chaney; 19 specimens from Balicasag Island, Bohol Province, Philippines in 80-100 m [SW04-70]; seven specimens from Aliguay Island, Zamboanga del Norte Province, Philippines in 91 m [SW07-72]; four specimens from Bantayan Island, Cebu Province, Philippines in 80-100 m [SW05-68]; two specimens from Bataan Island, Bataan Province, Philippines in 10-15 m [SW06-115]; 31 specimens from Mactan Island, Cebu Province, Philippines in 90-100 m [SW07-70]; one specimen from Olango Island, Cebu Province, Philippines in 25-45 m [SW07-71]; three specimens from Mactan Island, Cebu Province, Philippines in 200-250 m [SW08-57]; 23 specimens from Mactan Island, Cebu Province, Philippines in 100-250 m [SW09-33].

**Distribution:** Philippines and Indonesia.

**Diagnosis:** *Otitoma* sp. is characterized by its small size, widely spaced spiral cords, somewhat closed sinus, subtle subsutural cord and bold ribs on antepenultimate whorl.

**Description:** Shell broad, apex conical, small-sized for the genus. Color light brown to tan with widely spaced, faint spiral cords. Protoconch smooth, with two bulbous whorls. Profile of first two teleoconch whorls flat, conical, antepenultimate whorl with nine strong ribs, last whorl with subtle ribs. Outer lip very thickened, aperture narrow and somewhat long, anterior end opened, sinus somewhat closed, callus very thick and attached to previous whorl. Strong spiral cord at base of final whorl creating a slightly wider anterior canal than other

*Otitoma* species. Lower portion of final whorl concave in profile.

**Discussion:** Overall profile of *Otitoma* sp. squat and broad, measuring only approx. 6.0 mm. *Otitoma* sp. with strong projecting spiral cords on outer lip, with acute apex profile becoming much wider as the whorls progress. Sinus of *Otitoma* sp. slightly restricted compared to *O. cyclophora*, heavily callused and attached at the previous whorl. Lip thickened, base of final whorl ornamented with a bold spiral cord projecting at the final lip. Dr. Peter Stahlschmidt (Institute of Environmental Sciences, Germany) and several co-authors are currently describing this species in another journal (Pers. commun., 2014).

***Otitoma astrolabensis* n.sp.**

**Figures 14-17**

**Type Material:** Holotype, LACM 3264, height 8.0 mm, width 2.9 mm.

**Distribution:** Known only from the type locality. Outer reef wall, south side of Herald Pass, west side of Great Astrolabe Reef, Kadavu Group, Fiji, south Pacific (18° 46.0' S, 178° 27.2' E) at 15 m, collected by T. Bratcher, June 20, 1991 [=LACM 91-189].

**Diagnosis:** *Otitoma astrolabensis* n. sp. is characterized by its large size, tightly spaced spiral cords, nearly closed, spout-like sinus, subtle subsutural cord and bold ribs on teleoconch whorls.

**Description:** Shell slender, apex somewhat conical, large-sized for the genus. Color light cream with tightly spaced spiral cords, series of faint secondary cords between. Protoconch smooth, with 1 ½ bluntly flattened bulbous whorls. Profile of



teleoconch whorls convex, strongly ribbed, last whorl with subtle ribs. Outer lip very thickened, aperture narrow and long, anterior end opened, posterior sinus constricted and nearly closed, callus very thick, tabulate outer lip spout-like. Lower portion of final whorl somewhat concave in profile.

**Discussion:** *Otitoma astrolabensis* n.sp. is most closely allied to *O. cyclophora*. Superficially, general profile similar to *O. cyclophora*, primary spiral cords with various secondary cords in between more prominent in *O. astrolabensis* n. sp. *Otitoma astrolabensis* n. sp. with heavy ribs whereas, *O. cyclophora* lack ribs. Subsutural cords on whorls callused, ribbed, projecting in *O. cyclophora*, completely lacking in *O. astrolabensis* n. sp. with a subtle subsutural cord conforming to angle of remaining body whorl. Anal callus of *O. astrolabensis* n. sp. strong, tabulate extending back along subsutural cord, callus of *O. cyclophora* strong, convex. Apertural view of sinus in *O. astrolabensis* n. sp. projecting outward, spout-like, nearly closed, sinus oval, *O. cyclophora* sinus outline maintains profile shape, aperture slightly more open, sinus oval, comparably larger. Teleoconch whorls slightly rounded, distinctly ribbed, evenly spaced primary cords in final whorl of *O. astrolabensis* n. sp. Whorls nearly flat, ribs absent, evenly spaced primary cords below shoulder on final whorl, above shoulder one widely spaced cord in *O. cyclophora*. *O. astrolabensis* n. sp. apex blunt, semi-tabulate, proceeding teleoconch whorl strongly ribbed, *O. cyclophora* apex more acute, proceeding teleoconch whorl strongly corded. No specimens of *O. cyclophora* have been found that are larger than *O. astrolabensis* n. sp.

**Etymology:** Named with reference to the type locality, Astrolabe Reef, Fiji.

#### Genus “*Otitoma*”

**Diagnosis:** Superficially similar to known species in genera *Thelecytharella* and *Otitoma* but smaller obtaining a length of 5.0 mm with faint ribbing. Distinguishing characteristic protoconch, first whorl erect, second whorl tabulate. Restricted sinus, similar to *Otitoma* also resembling thick callus, oval sinus, spiral cords and general shape.

**Remarks:** “*Otitoma*” is a tentative assignment which is in need of a phylogenetic or radular study which is beyond the scope of this paper. A study by Fedosov & Puillandre (2012: 447) has found different larval development can be found in closely related members of the same genus.

#### “*Otitoma*” *fergusoni* n. sp.

##### Figures 18-21

**Type Material:** Holotype, LACM 3265, height 5.0 mm, width 1.7 mm.

**Type Locality:** Off Arutanga, west side of Aitutaki Atoll, Cook Islands, west Pacific (18° 52.03'S, 159° 47.05'W) in 18-26 m, May 12-13, 1987.

**Material Examined:** Holotype [LACM 3265]; 12 paratypes [LACM 3263] from Aitutaki, Cook Islands in 18-26 m collected by J.H. McLean & S. Zinn [=LACM87-79]; one paratype [LACM 3275] from Aitutaki, Cook Islands in .5-2 m collected by J.H. McLean & E. Abbott [=LACM87-78].

**Distribution:** Aitutaki Atoll, Cook Islands, west Pacific.

**Diagnosis:** “*Otitoma*” *fergusoni* n.sp. is characterized by its small size, subtle ribs on teleoconch whorls, nearly closed sinus and tabulate protoconch.

**Description:** Shell slender, elongate, with flat slightly rounded whorls, small-sized in comparison to other similar genera. Color white, occasionally blotched tan, with moderately spaced spiral cords. Apex blunt and stubby, protoconch smooth, with 1 ½ whorls, first half whorl sharply pointed to slightly bulbous, remaining whorl tabulate with a sharp keel. Final protoconch whorl quickly transitioned into highly sculptured teleoconch whorl with faint ribs crossed by bold spiral cords, as whorls progress sculpture decreases, 14 ribs nearly disappear on final whorl. Aperture very long and extremely narrow, sinus constricted and nearly closed, upper callus very thick, projecting outward dramatically.

**Discussion:** “*Otitoma*” *fergusoni* n. sp is quite similar to *Otitoma cyclophora* in general appearance. “*Otitoma*” *fergusoni* n. sp. is easily separated from *O. cyclophora* by the small size, tabulate protoconch, blunt apex profile, more widely spaced spiral cords, more rounded whorls, a narrowly constricted sinus with upper sinus portion highly callused and projecting significantly outward.

**Etymology:** Named after shell dealer Ralph Ferguson, Wilmington, California, who made numerous contributions to the fields of conchology and malacology for over 60 years.

## ACKNOWLEDGEMENTS

I thank James H. McLean and Lindsey T. Groves, LACM for their permission to study specimens and relevant literature at LACM. In addition, I'd like to give my appreciation to Patrick I. LaFolette (LACM Associate) for helping me acquire and locate essential literature for this paper. I am again also very grateful to Dr. McLean and Lindsey Groves whose helpful criticism has improved this paper.

## REFERENCES

- Adams, H. & A. Adams. 1853. *The genera of Recent Mollusca: Arranged according to their organization* John van Voorst, London, 1: x1+ 484 pp.
- Boettger, O. 1895. *Die marinen Mollusken der Philippinen nach den Sammlungen des Herrn José Florencio Quadra in Manila 4, Die Pleurotomiden*. *Nachrichtsblatt der Deutschen Malakozoologischen Gesellschaft*, 27: 1-20.
- Bouchet, P., Y. I. Kantor, A. Sysoev & N. Puillandre. 2011. *A new operational classification of the Conoidea (Gastropoda)*. *Journal of Molluscan Studies*, 77(3): 273-308, figs. 1-23.
- Bouchet, P. & J. P. Rocroi. 2005. *Classification and nomenclator of gastropod families*. *Malacologia*: 47(1-2): 1-397.
- Cernohorsky, W. O. 1978. *Tropical Pacific Marine Shells*. Pacific Publications, Sydney, Australia. 352 pp., 17 figs., 68 pls.
- Chang, C. K. 2000. *Small Turridae from Taiwan. Part 15, The forgotten species*. *Internet Hawaiian Shell News*, p. 2-7.

- Chang, C. K. 2001. *Small Turrids of Taiwan, a CD-book*. Internet Hawaiian Shell News, Hawaii.
- Deshayes, G. P. 1863. *Catalogue des mollusques de l'île de la Réunion (Bourbon)*. In Maillard, L. *Notes sur l'île de la Réunion*. Paris, 143 pp., pls. 28-41.
- Faustino, L. A. 1928. *Summary of Philippine marine and fresh-water mollusks*. Manila Bureau of Science Monograph, 25: 1-384.
- Fedosov, A & N. Puillandre, 2012. *Phylogeny and taxonomy of Kermia-Pseudodaphnella (Gastropoda, Raphitomidae) genus complex: remarkable radiation via diversification of larval development*. Systematics and Biodiversity 10: 447-477.
- Fulton, H. C. 1922. *A list of the species and genera of Recent Mollusca first described in "Le Naturaliste"*. Proceedings of the Malacological Society of London, 15(1): 19-31.
- Hasegawa, K., T. Okutani, E. Tsuchida. 2000. Turridae. In T. Okutani (ed.) *Marine Mollusks in Japan*. Tokai University Press, Tokyo, Japan, p. 619-667, figs. 1-240.
- Hedley, C. 1922. *A revision of the Australian Turridae*. Records of the Australian Museum 12(6): 213-359, pl. 42-56.
- Hidalgo, J. G. 1904. *Catálogo de los moluscos testáceos de las ilas Filipinas, Joló y Marianas*. Revista de la Real Academia de Ciencias Exactas, Física y Naturales de Madrid, 408 pp.
- Higo, S., P. Callomon & Y. Goto. 1999. *Catalogue and bibliography of the marine shell-bearing Mollusca of Japan*. Elle Scientific Publications, Osaka, Japan, 693 pp.
- Higo, S. & Y. Goto. 1993. *A Systematic List of Molluscan Shells from the Japanese Is. and the Adjacent Area*. Elle Scientific Publications, Yao, Japan.
- Johnson, R.I. 1994. *Types of shelled Indo-Pacific mollusks described by W.H. Pease*. Bulletin of the Museum of Comparative Zoology 154(1):1-61, pls. 1-10.
- Jousseume, F. P. 1898. *Description d'un Mollusque nouveau*. Le Naturaliste 20(268): 106-107, 2 unnumbered text figs.
- Kilburn, R. N. 1995. *Turridae of southern Africa and Mozambique (Mollusca: Gastropoda, Conoidea)*. Part 8. *Conidae: subfamily Mangeliinae, section 3*. Annals of the Natal Museum, 36: 261-269.
- Kilburn, R. N. 2004. *The identities of Otitoma and Antimitra (Mollusca: Gastropoda: Conidae and Buccinidae)*. African Invertebrates, Annals of the Natal Museum, 45: 263-270.
- Kohn, A. J. & I. Arua. 1999. *An early Pleistocene molluscan assemblage from Fiji: gastropod faunal composition, paleoecology, and biogeography*. Paleogeography, Palaeoclimatology, Palaeoecology, 146: 99-145, figs. 1-9.
- Kuroda, T. & T. Habe. 1952. *Check list and bibliography of the Recent marine Mollusca of Japan*. Hosokawa Printing Company, Tokyo, 210 pp.
- McLean, J.H. 1971. *A revised classification of the family Turridae, with the proposal of new subfamilies, genera, and subgenera from the eastern Pacific*. The Veliger 14(1): 114-130.
- Morrison, J.P.E. 1965. *On the families of turridae* [abstract]. The American Malacological Union, Annual Reports for 1965:1-2.
- Nevill, G. & H. Nevill. 1875. *Descriptions of new marine Mollusca from the Indian*

- Ocean*. Journal of the Asiatic Society of Bengal, 43: 83-104, pls. 7-8.
- Pease, W. H. 1868. *Descriptions of marine gasteropoda, inhabiting Polynesia*. American Journal of Conchology 3(3):211-222, pl. 15.
- Powell, A. W. B. 1966. *The Molluscan Families Speightiidae and Turridae, An evaluation of the valid taxa, both Recent and fossil, with lists of characteristic species*. Bulletin of the Auckland Institute and Museum 5: 1-184, pls. 23.
- Puillandre, N., Y. I. Kantor, A. V. Sysoev, C. Couloux, C. Meyer, T. Rawlings, J. A. Todd & P. Bouchet. 2011. *The dragon tamed? A molecular phylogeny of the Conoidea (Gastropoda)*. Journal of Molluscan Studies, 77(3): 259-272, fig. 1.
- Puillandre, N., S. Samadi, M.-C. Boisselier, A. V. Sysoev, Y. I. Kantor, C. Cruaud, A. Couloux, P. Bouchet, 2008. *Starting to unravel the toxoglossan knot: Molecular phylogeny of the "turrids" (Neogastropoda: Conoidea)*. Molecular Phylogenetics and Evolution 47: 1122-1134.
- Puillandre, N., S. Samadi, M.-C. Boisselier, C. Cruaud & P. Bouchet. 2009. *Molecular data provide new insights on the phylogeny of the Conoidea (Neogastropoda)*. The Nautilus 123(3): 202-210.
- Reeve, L. 1845. *Conchologia Iconica*. Vol. 1, London, England.
- Rosenberg, G. 1998. *Reproducibility of results in phylogenetic analysis of mollusks: a reanalysis of the Taylor, Kantor, and Sysoev (1993) data set for conoidean gastropods*. American Malacological Bulletin, 14(2): 219-228, figs 1-7.
- Schepman, M. M. 1913. *The Prosobranchia of the Siboga Expedition. Part 5, Toxoglossa*. Resultats Siboga-Expeditie, 49(1): 365-452, pls. 25-30.
- Shuto, T. 1965. *Turrid gastropods from the upper Pleistocene Moeshima shell beds*. Memoirs of the Faculty of Science, Kyushu University, Series D, Geology, 16(2): 143-207, pls. 29-35.
- Shuto, T. 1969. *Neogene gastropods from Panay Island, the Philippines (Contributions to the Geology and Paleontology of Southeast Asia, 68)*. Memoirs of the Faculty of Science, Kyushu University, Series D, Geology, 19(1): 1-250, pls. 1-24.
- Shuto, T. 1970. *Taxonomical notes on the Turrids of the Siboga-Collection originally described by M. M. Schepman, 1913 (Part 1)*. Venus 28(4): 161-178, pls. 10-11.
- Shuto, T. 1983. *New Turrid Taxa from the Austrarian [sic] waters*. Memoirs of the Faculty of Science, Kyushu University, Series D, Geology, 25(1): 1-26.
- Sysoev, A. V. in A. Crosnier & P. Bouchet. 1997. *Mollusca Gastropoda: New deep-water turrid gastropods (Conoidea from eastern Indonesia)*. Résultats des Campagnes Musorstom 16, Muséum National d'Histoire Naturelle, Paris, France, p. 325-355.
- Taylor, J. D., Y. I. Kantor & A. V. Sysoev. 1993. *Foregut anatomy, feeding mechanisms, relationships and classification of the Conoidea (=Toxoglossa) (Gastropoda)*. Bulletin of the Natural History Museum of London (Zoology) 59(2): 125-170, figs. 1-27.
- Tröndlé, J. & M. Boutet. 2009. *Inventory of Marine Molluscs of French Polynesia*. Atoll Research Bulletin 570.
- Tryon, G. W. 1884. *Conidae, Pleurotomidae*. Manual of Conchology, Structural and Systematic, with illustrations of the species, 6: 1-150, pls.

1-31 (Conidae); 151-413, pls. 1-34  
(Pleurotomidae).

Tucker, J. K. 2004. *Catalog of Recent and fossil turrids (Mollusca: Gastropoda)*. Zootaxa 682: 1-1295.

von Martens, E. in Möbius, K., Richters, F. & von Martens, E. 1880. *Mollusken. Beiträge Meeresfauna Insel Mauritius und der Seychellen*. Gutmannischen Buchhandlung, Berlin, 181-352, pls. 19-22.

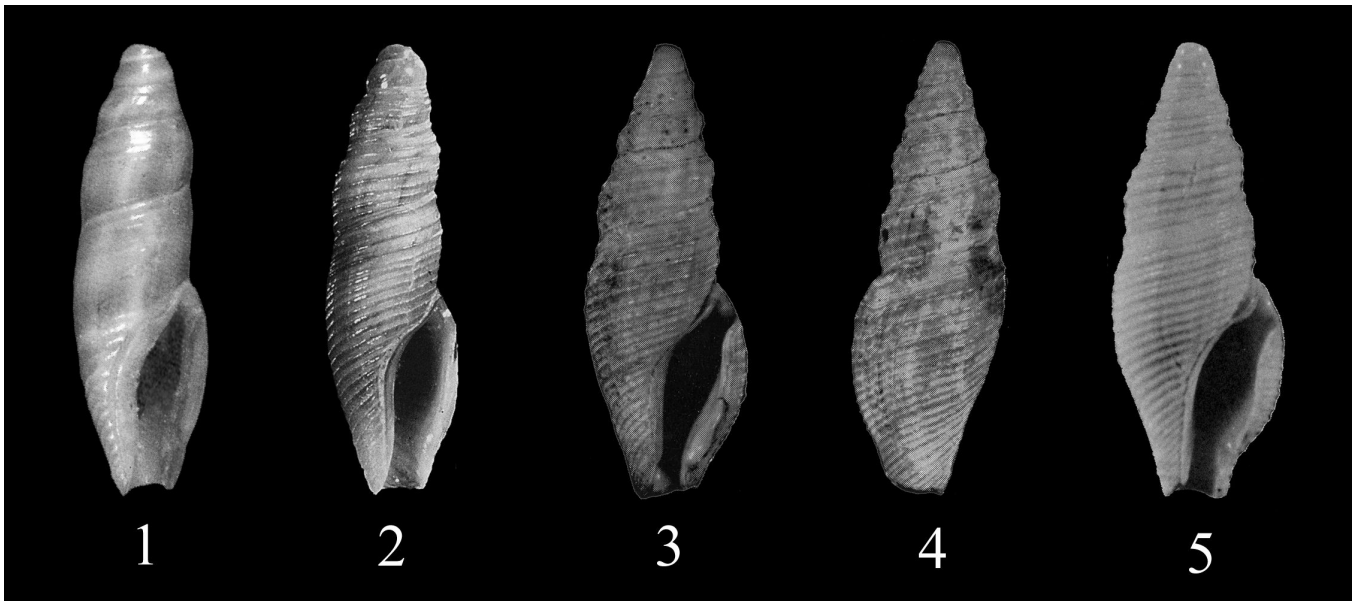
Woodring, W.P. 1928. Miocene mollusks from Bowden, Jamaica. Part II.

Gastropods and discussion of results.

Carnegie Institution of Washington  
Publication 385: vii + 1-564, figs. 1-3, pls. 1-40.

Zheng, Y. 2007. *An appreciation of micro turrids of southern Taiwan. Part 2*. The Pei-yo 33:29-35, figs. 1-20. [Title and author translated from Chinese].

Zhenguo, Z. 1995. *Studies on micromolluscan Turridae of Lüdao Islet, Taiwan*. Studia Marina Sinica, 36: 273-296, pls. 1-5.

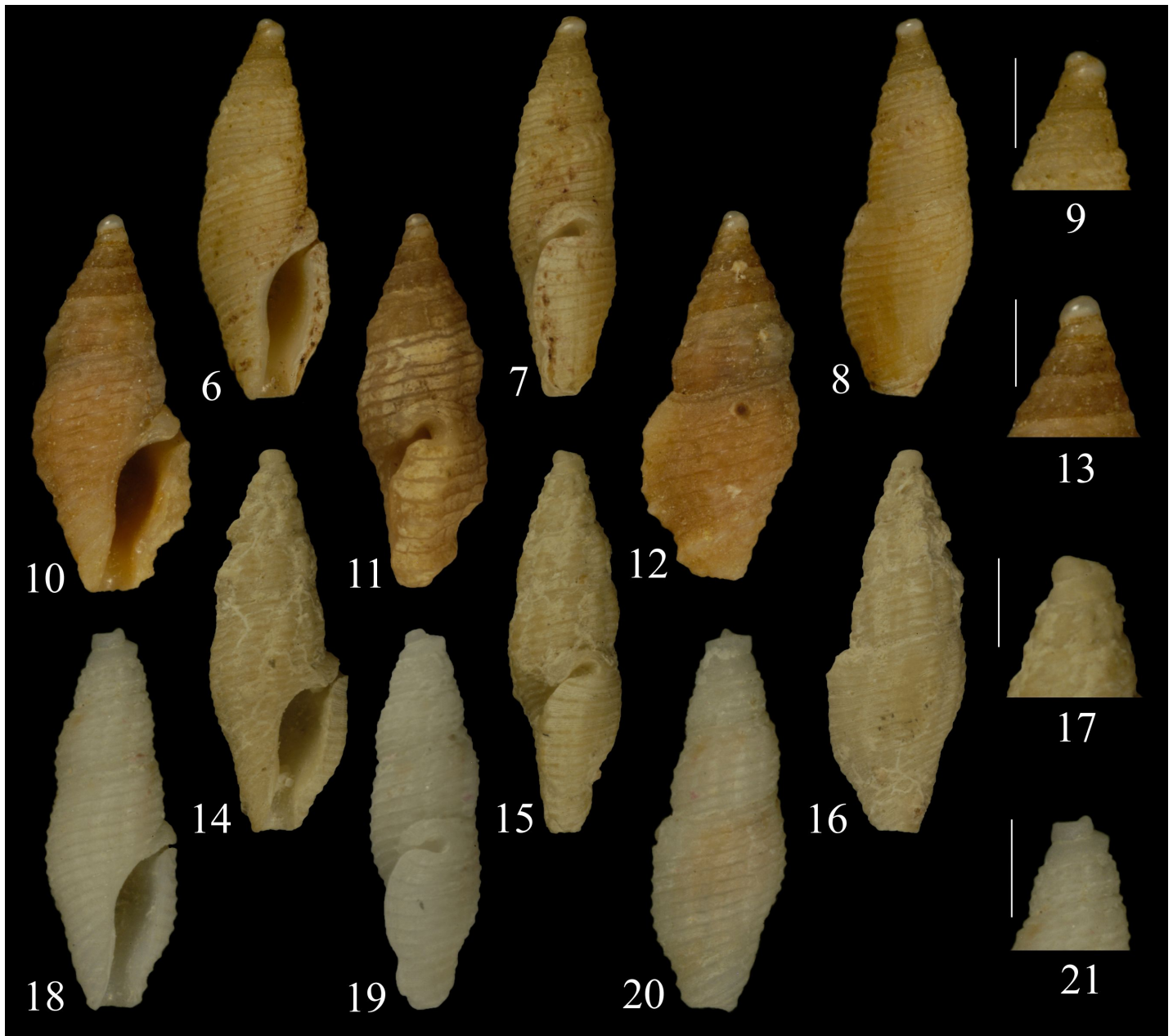


**Figures 1-5.**

**1-5.** *Thelecytharella* species. **1.** *Thelecytharella vitrea* (Reeve, 1845), Lectotype NHMUK, Mindanao, Philippines, 7-25 fathoms, height 5.5 mm, width 1.7 mm (image from Kilburn 1995: 268, fig.12). **2.** *Thelecytharella kecil*, Holotype MNHN, Karubar, Kai Islands, Indonesia, 448-467 m, height 5.5 mm, image from Sysoev (1997:355, fig. 58)

**3-4.** †*Thelecytharella oyamai* (Shuto, 1965), KUG GK-L 7079, images from Shuto (1969: pl.17, figs. 4, 10), late Pleistocene, Kyushu, Japan, height 11.45 mm, width 4 mm.

**5.** *Thelecytharella crokerensis* (Shuto, 1983), Holotype AMS C 134692, image from Shuto (1983: pl. 2, fig. 1), Croker Island, Northern Territory, Australia, 65 m, height 7.9 mm.



**Figures 6-21.**

6-21. *Otitoma* and "*Otitoma*" species. 6-9. *Otitoma cyclophora* (Deshayes, 1863), Mactan Island, Cebu Province, Philippines, 90-100 m, Hypotype LACM 178786, [6-8. Height 6.3 mm, width 2.1 mm, 9. Protoconch, scale bar = 1 mm]. 10-13. *Otitoma* sp., off Linapacan Island, Palawan Province, Philippines, Hypotype LACM 178787, 150 m, [10-12. Height 6.0 mm, width 2.6 mm, 13. Protoconch, scale bar = 1 mm]. 14-17. *Otitoma astrolabensis* n.sp., outer reef wall, south side of Herald Pass, west side of Great Astrolabe Reef, Kadavu Group, Fiji, Holotype LACM 3264, 15 m, [14-16. Height 8.0 mm, width 2.9 mm, 17. Protoconch, scale bar = 1 mm]. 18-21. "*Otitoma*" *fergusoni* n.sp., off Arutanga, west side of Aitutaki Atoll, Cook Islands, Holotype LACM 3265, .5-2 m, [18-20. height 5.0 mm, width 1.7 mm, 21. Protoconch, scale bar = 1 mm].