

# NEW AND OLD SPECIES OF *BENIMAKIA* (NEOGASTROPODA: FASCIOLARIIDAE) AND A DESCRIPTION OF *NODOLATIRUS*, NEW GENUS

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**Abstract** There are at present ten Recent species assigned to the neogastropod genus *Benimakia*. We describe *Benimakia nux* n. sp. and *Benimakia vermeiji* n. sp., both from New Caledonia, and *Benimakia rubus* n. sp. from Vanuatu. We discuss other species in this genus from New Caledonia, reassigning *Turbinella mariei* Crosse 1869, from New Caledonia, and *Latirus* (*Peristernia*) *sowerbyi* Melvill 1907, from the Tuamotus and Marshall Islands, to the genus *Benimakia*. Radulae are studied for six species presently assigned to this genus and, based upon those studies, "*Benimakia nodata*" [*Murex nodatus* Gmelin 1791] is made the type of a new peristerniine genus *Nodolatirus*, which also includes the Austral Islands endemic *Nodolatirus rapanus* n. sp., the West Pacific *Turbinella recurvirostra* Schubert & Wagner 1829, and the South African and Indian Ocean *Latirus robillardi* Tapparone-Canefri 1879.

**Keywords** *Gastropoda*, *Fascioliariidae*, *Benimakia*, new species, *Nodolatirus*, new genus, New Caledonia, Vanuatu, Austral Islands

## INTRODUCTION

At present there are three fossil and ten Recent species assigned to the neogastropod fascioliariid genus *Benimakia* Habe 1958 (see Vermeij & Snyder, 2003; Snyder & Vermeij, 2008; Marais & Kilburn, 2010). Smaller species continue to be collected from fairly localized sites, and more new species will certainly be added to the genus in the future. Based on material collected during exploring expeditions of the MNHN in the West and South-West Pacific over the last 25 years or so, we here introduce three new species: *Benimakia nux* n. sp.; *Benimakia rubus* n. sp.; and *Benimakia vermeiji* n. sp. We review the synonymy and local distribution of *Benimakia lanceolata* (Reeve 1847) in New Caledonia, and we reassign *Turbinella mariei* Crosse 1869 and *Latirus* (*Peristernia*) *sowerbyi* Melvill 1907, to *Benimakia*. Based on radular studies presented in this paper, we place *Benimakia nodata* (Gmelin 1791) in the new genus *Nodolatirus*. We also describe the populations from the Austral Islands as an endemic new species *Nodolatirus rapanus* n. sp., and place in this same genus the morphologically similar West Pacific *Turbinella recurvirostra* Schubert & Wagner 1829, and the South African and Indian Ocean *Latirus robillardi* Tapparone-Canefri 1879.

## ABBREVIATIONS

ANSP	Academy of Natural Sciences of Drexel University, Philadelphia, PA;
NHMUK	The Natural History Museum, London;
MNHN	Muséum National d'Histoire Naturelle, Paris.

## SYSTEMATICS

Family Fascioliariidae Gray 1853

Subfamily Peristerniinae Tyron 1880

Genus *Nodolatirus* new genus

Type species *Murex nodatus* Gmelin 1791

**Description** Shell large for subfamily (type species to 115 mm), high-spired, fusiform; axial sculpture of wide, rounded ribs, extending usually just partly down each whorl, outer lip weakly convex with crenulations at edge, inner side of lip with small dentations and after a smooth segment, numerous fine lirae; 3 to as many as 6 columellar plicae; spiral sculpture of fine spirals becoming prominent on neck, with 2–6 characteristic raised thickened cords at adapical end of neck. Radula – rachidian tooth square, with three short, stout, subequal cusps; laterals massive, with >10 times as long as high base, carrying about 15 cusps that are as long as base height.

*Etymology* The name is a combination of *nodosus*, carrying nodes or knots, and *Latirus*.

*Included species*

*Nodolatirus nodatus* (Gmelin 1791) comb. nov. [*Murex nodatus* Gmelin 1791: 3536, no. 177]

*Nodolatirus rapanus* n. sp.

*Nodolatirus recurvirostrus* (Schubert & Wagner 1829) comb. nov. [*Turbinella recurvirostra* Schubert & Wagner 1829]. Note: The specific epithet *recurvirostra* was formed from the Latin adjective *recurvus*, meaning curved, and *rostra*, itself derived either from the noun *rostrum* or the adjective *rostratus*. We here take the view that it was an incorrectly latinized adjective. Under Art. 32.5.1, the spelling *recurvirostra* is not to be corrected, but under Art. 31.2 it must agree in gender with the generic name with which it is combined.

*Nodolatirus robillardi* (Tapparone-Canefri 1879) comb. nov. [*Latirus robillardi* Tapparone-Canefri 1879: 318; 1880, pl. 2, figs 14, 15]

*Remarks* The radula of *Nodolatirus nodatus* (Fig. 3G) differs by its saw-like lateral teeth that have a much higher base and carry 15 cusps, as opposed to the much shorter base carrying 5–6 cusps in the species placed in *Benimakia* (Figs 3A–F). It is this difference that prompted the consideration of a new genus. A similar radula is present in *Turbinella recurvirostra* Schubert & Wagner 1829 (Azuma, 1973, as *Latirus recurvirostrum*).

The prominent nodes and heavy cords on the neck also serve to distinguish species of *Nodolatirus* from other peristerniines. Some larger specimens of *Latirus* (s.s.) (see Vermeij and Snyder, 2006) have cords on the neck of the shell, but they never are as heavy or prominent as in *Nodolatirus*. Both *N. nodatus* (Fig. 1D) and *N. robillardi* display these cords, often with prominent expression. Although we have not seen the radula of *Benimakia robillardi* we thus place it in *Nodolatirus* as well. These two species have often been confused or even synonymized and their shells are very similar morphologically.

*Nodolatirus nodatus* (Gmelin 1791)  
(Figs 1A–D, 3F)

*Murex nodatus* Gmelin, 1791: 3536, no.177

*Synonyms*

*Buccinum nodatum* Martyn 1784: vol. 2, pl. 51  
[Nova Hollandia, i.e., Australia]

*Murex rigidus* W. Wood 1828: 57, pl. 5, fig. 3

*Fusus rosaponti* Lesson 1842a: 104 (original spelling *rosa ponti*) [Iles Gambier, French Polynesia]

*Turbinella multinoda* Petit de la Saussaye 1842: 232 (unnecessary new name for *Fusus rosaponti*)

*Other combinations*

*Turbinella rigida* (Wood) – Gray, 1839: 113 [Pacific Ocean]

*Turbinellus rigidus* (Wood) – Reeve, 1842: 180, pl. 229, fig. 3

*Fasciolaria rosaponti* – Lesson, 1842b: 212

*Turbinella nodata* (Gmelin) – Catlow and Reeve, 1845: 230; Reeve, 1847: pl. 5, fig. 27 [Panama (an error)]

*Latirus nodatus* (Gmelin) – H. and A. Adams, 1853: 153

*Latirus rosaponti* (Lesson) – Paetel, 1887: 164

*Benimakia* (?) *nodata* (Gmelin) – Vermeij, 2001: 495

*Benimakia nodata* (Gmelin) – Vermeij and Snyder, 2003: 16

*Type locality* Australia.

*New Caledonia records* **Expédition Montrouzier.** Koumac, sta. 1310, Passe de Koumac, north wall, 20°39.7'S, 164°14.9'E, 15 m, 1 lv.- Sta. 1312, Passe de Koumac, east wall, 20°40.4'S, 164°14.9'E, 26–40 m, 1 lv.- Sta. 1318, Grand Récif de Koumac, outer slope, 20°41.4'S, 164°14.8'E, 20–30 m, 1 dd. **Lifou** 2000, all from Baie du Santal: sta. 1421, between Huca Hutighé and mainland, 20°52.4'S, 167°08.5'E, 4 m, 1 lv.- Sta. 1429, W/SW of Easo Point, 20°47.5'S, 167°07.1'E, 8–18 m, 1 lv.- Sta. 1432, Récif Shelter, 20°53.5'S, 167°02.7'E, 12–32 m, 1 juv. lv.- Sta. 1433, below cliff at Easo, 20°47.5'S, 167°07.4'E, 12–17 m, 5 lv.- Sta. 1439, Chépénéhé Pt, 20°47.7'S, 167°09.35'E, 5–30 m, 1 lv, 1 dd.- Sta. 1440, Chépénéhé, 20°47.2'S, 167°08.6'E, 15–35 m, 1 lv.- Sta. 1441, Cap Aimé Martin [= Acadro], 20°46.4'S, 167°02.0'E, 20 m, 1 lv.- Sta. 1448, Cap Aimé Martin [= Acadro], 20°45.8'S, 167°01.65'E, 20 m, 1 juv. lv.- Sta. 1450, 1 juv. lv; sta. 1452, between Cape Mandé and Cape Lefèvre [= Nem], 20°54.6'S, 167°02.1'E, 2–25 m, 1 lv.- Sta. 1459, off Ngoni beach, 20°47.0'S, 167°03.0'E, 55–80 m, 1 juv. lv.

*Distribution* In New Caledonia, *Nodolatirus nodatus* never occurs in the intertidal but only offshore in about 15–50 m, and only in the northern half of the archipelago; given the intensity



**Figure 1** *Nodolaticus*. A–C, *Nodolaticus nodatus* (Gmelin 1791), growth series based on specimens from Baie du Santal, Lifou, Loyalty Islands. A st. 1450, height 11.9 mm. B st. 1459, height 23.3 mm. C st. 1433, height 77.2 mm. D Copy of original illustration of *Buccinum nodatum* in Martyn's Universal Conchologist (1784: pl. 51). E–I *Nodolaticus rapanus*, new species. All specimens from Rapa, Austral Islands, French Polynesia. E–F juvenile and protoconch, st. 32, height 16.9 mm. G Large adult, encrusted with coralline algae, st. 65, height 51.3 mm. H holotype, height 43.5 mm. I, living animal.

of the sampling throughout New Caledonia, its absence south of 21°S is considered significant.

*Remarks* There is no extant type material of *Murex nodatus*. However, the specimen figured

by Martyn (1784: fig. 51, as *Buccinum nodatum*; herein Fig. 1D) that Gmelin referred to in his original description serves to identify this species and we select the specimen depicted in that figure as the lectotype.

*Nodolatirus rapanus* n. sp.

(Fig. 1E–I)

*Type material* Holotype MNHN 25395 and 4 paratypes MNHN 25396.

*Type locality* French Polynesia, Austral Islands, Rapa, Vavai, 27°35.4'S, 144°23.3'W, 5 m; collected by Pierre Lozouet and Atelier Rapa 2002 party [RAPA 2002: sta. 20].

*Material examined* All from French Polynesia, Austral Islands, Rapa. Atelier Rapa 2002: Sta. 3, Pointe Komire, 27°34'S, 144°19.7'W, 21 m, 1 lv.- Sta. 9–10, Baie de Hiri, 27°37.3'S, 144°22.2'W, 3–24 m, 3 lv, 1 dd.- Sta. 11, North of Rapa Iti islet, 27°37.2'S, 144°18.2'W, 2 m, 1 lv.- Sta. 19, South of Baie Anatakuri, 27°37.7'S, 144°18.7'W, 3 m, 1 lv.- Sta. 20, Vavai, 27°35.4'S, 144°23.3'W, 5 m, 5 lv.- Sta. 27, 27°38.7'S, 144°19.2'W, 6 m, 1 lv, 1 juv. lv.- Sta. 30, Pointe Mei, 27°38'S, 144°18.2'W, 16–20 m, 1 juv. lv.- Sta. 31, Pointe Mei, 27°38.2'S, 144°18.2'W, 6 m, 1 lv, 1 dd.- Sta. 32, Vavai, 27°35.0/35.8'S, 144°22.7/23.0'W, 15–20 m, 2 lv, 5 juv. lv.- Sta. 65, 27°38.6'S, 144°18.5'W, 2–3 m, 1 fresh dd.- Sta. 80, Baie Ahurei, 27°36.5' S, 144°18.2' W, intertidal, 1 lv.- Sta. 88, Pointe Tekogoteemu, 27°36.4'S, 144°18.6'W, intertidal, 3 lv., 9 dd.

*Description* Shell medium-sized for the family, fusiform, stout (h/d 2.07–2.28), consisting of 1 protoconch and 9 teleoconch whorls; protoconch paucispiral; spire moderately high, 53% of total shell height; whorls inflated, with concave subsutural band extensively adpressed to preceding whorl, forming an undulating suture, whorl periphery regularly convex; axial sculpture consisting of 6 (on penultimate whorl) to 7 (on last whorl) short, bulbous ribs, interspaces narrower than ribs, not extending on base; spiral sculpture consisting of raised cords, more distinct where they cross ribs than between ribs, interspaces broader than cords, none in subsutural ramp, 3 on periphery of spire whorls, abapical one distinctly stronger, increasing to 8–10, very low and indistinct, on penultimate and last whorls respectively, 15 much stronger and uneven on base and neck; outer lip very convex, without labral tooth, constricted at base of siphonal canal; inner side of outer lip with 10 smooth, continuous, deeply recessed lirae; columella with 4 strong but low folds; siphonal fasciole and false umbilicus indistinct; siphonal canal straight. On early whorls, color pattern of punctuated brown

lines in interspaces between cords, fading out after 5<sup>th</sup> whorl; adult shell dull white with light olive periostracum; aperture pink.

Dimensions: holotype height 43.5 mm; width 20.6 mm.

*Distribution* Known only from the intertidal to shallow subtidal (to 21 m) of Rapa. It is not known whether *N. rapanus* occurs also in the other Austral Islands, or is restricted to Rapa.

*Remarks* The distinctiveness of this species had been noted by Tröndlé & Boutet (2009), who recorded "*Latirus nodatus*" from the Society, Tuamotus, Gambier and Marquesas Islands, and "*Latirus cf. nodatus*" from the Australs. *Nodolatirus rapanus* differs from *N. nodatus* by its stouter appearance, broader last whorl, shorter siphonal canal, and less prominent cords on the neck. The two species are inferred to have different modes of larval development, with the paucispiral protoconch of *N. rapanus* indicating non-planktotrophic development, while development is planktotrophic in *N. nodatus*. However, the protoconch and early teleoconch whorls are often encrusted or corroded, and this is a character that is seen only in very young specimens of 6 whorls or less.

*Etymology* The specific epithet is an adjective formed after the name of the island Rapa.

Genus *Benimakia* Habe 1958

*Benimakia* Habe 1958: 182.

*Type species* *Turbinella rhodostoma* Dunker 1860, by monotypy

*Benimakia lanceolata* (Reeve 1847)

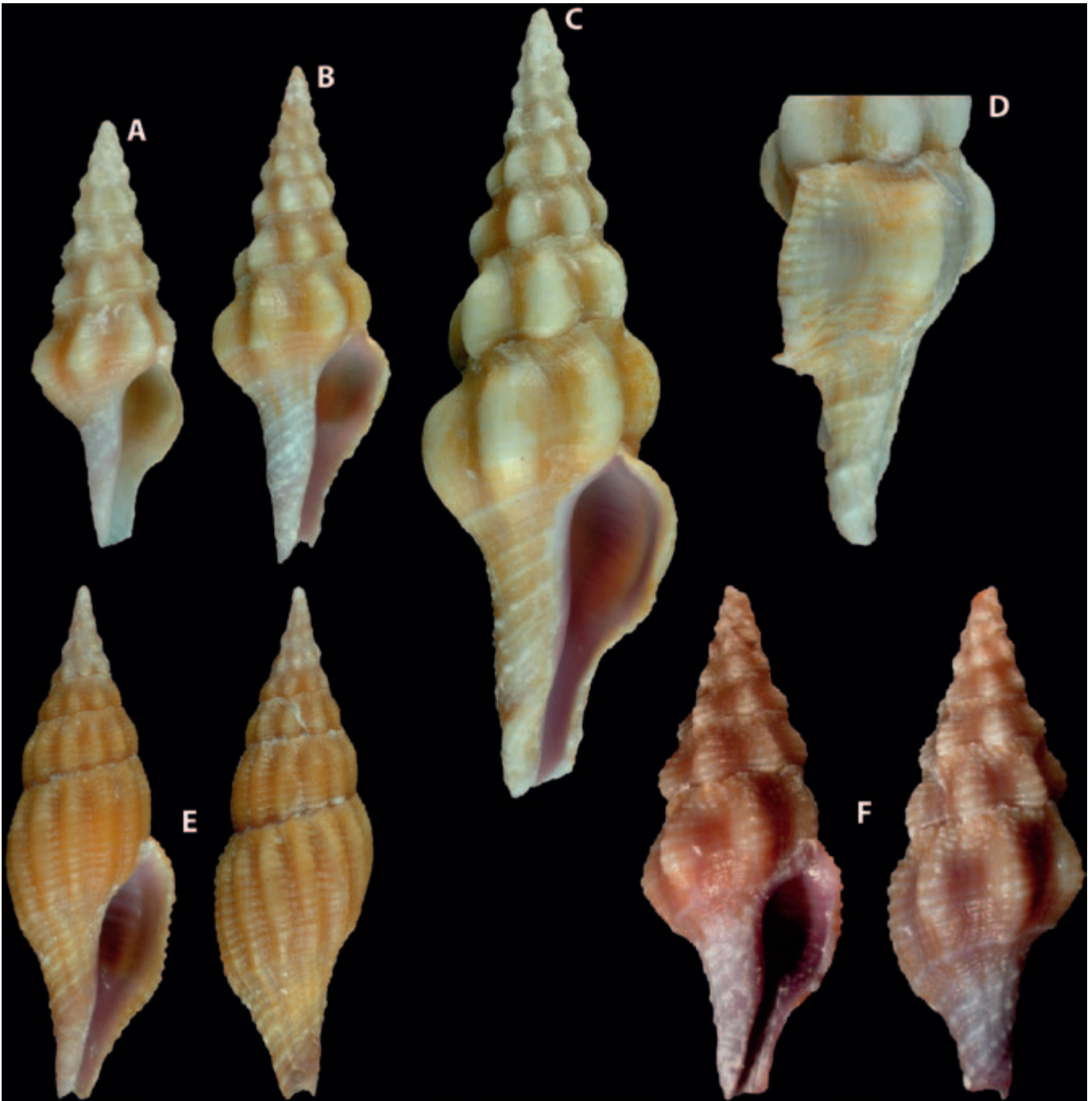
(Figs 2A–D, 3B)

*Turbinella lanceolata* Reeve 1847: pl. 3, fig. 12 [Philippine Islands "on the sands"]

*Latirus lanceolata* (Adams and Reeve) – H. and A. Adams, 1853: 153 [Philippine Islands]

*Benimakia lanceolata* (Reeve) – Vermeij, 2001: 494

*Type material* There are 4 syntypes at NHMUK. One lot from Lombe Taylor (1874.12.11.161) consists of a single specimen from the Philippine Islands. The other lot (1968430) consists of three specimens from the Cuming collection, also from the Philippine Islands.



**Figure 2** *Benimakia*. A–D, *Benimakia lanceolata* (Reeve 1847), growth series based on specimens from New Caledonia and Lifou, Loyalty Islands. A northern New Caledonia, st. 480, height 28.9 mm. B Baie du Santal, Lifou, st. 1431, height 33.6 mm. C st. 1459, height 53.3 mm. D Side view showing labral tooth, st. 1270, total shell height 56.9 mm. E *Benimakia vermeiji*, new species. Baie du Santal, Lifou, Loyalty Islands. Holotype, height 23.5 mm. F *Benimakia rubus* new species. Bruat Channel, Malo I., Vanuatu. Holotype, height 17.05 mm.

*Type locality* Philippine Islands.

*New Caledonia records* **Lagon Nord**: sta. 480, 18°56'S, 163°29'E, 31 m, 1 juv. lv.- Sta. 487, 18°55'S, 167°31'E, 37 m, 1 lv.- Sta. 1159, 19°13'S, 163°07'E, 50 m, 1 juv. lv.

**Expédition Montrouzier**. Koumac, sta. 1287, Récif de l'Infnet, 20°37'S, 164°14'E, intertidal, 1 lv.- Sta. 1316, outer slope of Grand Récif de Koumac, 20°40'S, 164°11.2'E, 12 m, 1 dd.- Touho, sta. 1270, outer slope of Grand Récif Mangalia, 20°45'S, 165°16.5'E, 10–35 m, 1 lv. **Lifou 2000**,

all from Baie du Santal: sta. 1429, W/SW of Easo Point, 20°47.5'S, 167°07.1'E, 8–18 m, 1 lv.- Sta. 1431, W/SW of Easo Point, 20°47.5'S, 167°07.1'E, 18–35 m, 2 lv, 1 dd.- Sta. 1434, Huca Hutighe, 20°52.5'S, 167°08.1'E, 5–20 m, 1 lv.- Sta. 1440, Chépénéhé, 20°47.2'S, 167°08.6'E, 15–35 m, 1 lv.- Sta. 1441, Cap Aimé Martin [= Acadro], 20°46.4'S, 167°02.0'E, 20 m, 1 lv.- Sta. 1448, Cap Aimé Martin [= Acadro], 20°45.8'S, 167°01.65'E, 20 m, 2 lv.- Sta. 1451, W. of Easo Point, 20°47.3'S, 167°06.8'E, 10–21 m, 2 lv, 1 juv. dd.- Sta. 1456, NE of Baie du Santal off Cila, 20°49.3'S, 167°10.4'E, 25–30 m, 3 lv.- Sta. 1459, off Ngoni beach, 20°47.0'S, 167°03.0'E, 55–80 m, 1 lv.

*Distribution* In New Caledonia, *Benimakia lanceolata* occurs from the intertidal to about 20–30 m with scattered records to 80 m, and only in the northern half of the archipelago; given the intensity of the sampling throughout New Caledonia, its absence south of 21°S is considered significant.

*Remarks* The radula of this species (Fig. 3B) is consistent with the radula of other *Benimakia* species.

*Benimakia mariei* (Crosse 1869) comb. nov.  
(Fig. 5)

*Turbinella mariei* Crosse 1869a: 177; 1869b: 279, pl. 8, fig. 2.

*Peristernia mariei* (Crosse) – Paetel, 1887: 128 [Tongatabu]

*Turbinella mariei* (Crosse) – Küster & Kobelt, 1876: 96, pl. 23, figs 6–7 (copied from Crosse).

*Latirus mariae* (sic) (Crosse) – E.A. Smith 1906: 35.

*Fusus (Latirus) mariei* (Crosse) – Coulon, 1936: 129.

*Type material* Crosse did not explicitly state that his description was based on a single specimen, although it was very likely so. We designate as lectotype the only syntype in MNHN (Fig. 5).

*Type locality* New Caledonia.

*Material examined* The lectotype Nouméa, Rocher à la Voile, intertidal, J. Picard coll. 1980, 1 lv (MNHN) (Fig. 5).

*Distribution* Beside the type locality in New Caledonia, *Benimakia mariei* was only recorded once from Tonga by Paetel, a record that is not impossible but needs confirmation.

*Remarks* It is remarkable that this intertidal species has been recollected in New Caledonia only once since its original description 140 years ago. It may be interesting to note that our recently collected specimen was very heavily incrustated by calcareous algae, leaving only the last couple of ribs behind the outer lip free of lime; if such heavy encrustation is frequent for that species, it may explain why collectors do not pick up specimens, and the species may appear to be so rare in collections.

Crosse did notice in the original description the labral tooth, which is also well developed in our specimen, and the reason for our transferring the species to *Benimakia*. *B. mariei* is characterized by its overall squat appearance, with a sculpture of strong, broad ribs, 9 on last whorl, 8 on penultimate, intersected by numerous low, rounded spiral cords, 19 between suture and labral tooth cord of last whorl; the overall colour pattern is very light brown, with a darker, lavender brown, base, and similarly darker interspaces between ribs; the interspaces between spiral cords are also of a darker brown than the cords themselves.

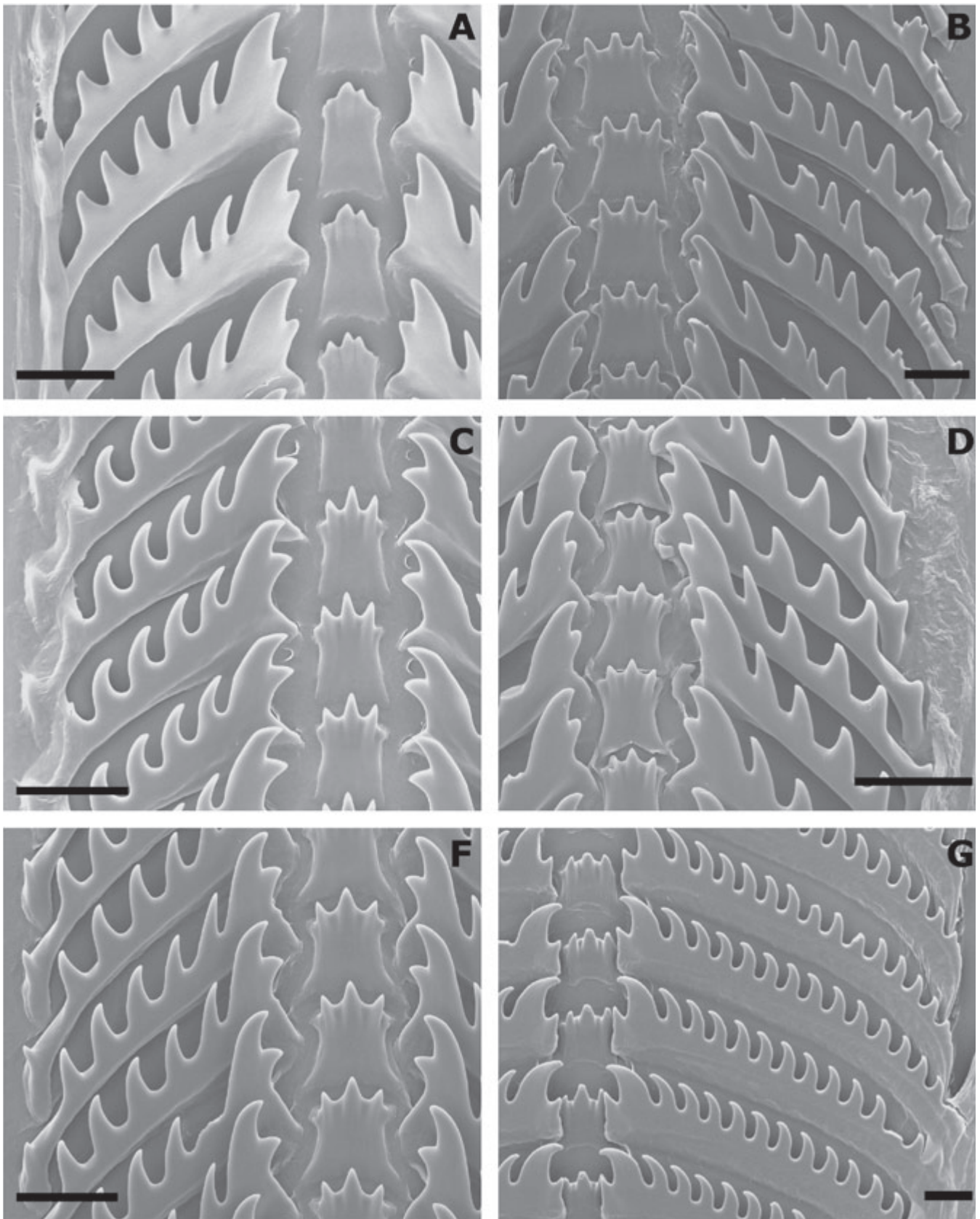
*Benimakia nux* n. sp.  
(Figs 3C, 4)

*Type material* Holotype MNHN 25401 and 1 paratype MNHN 25402.

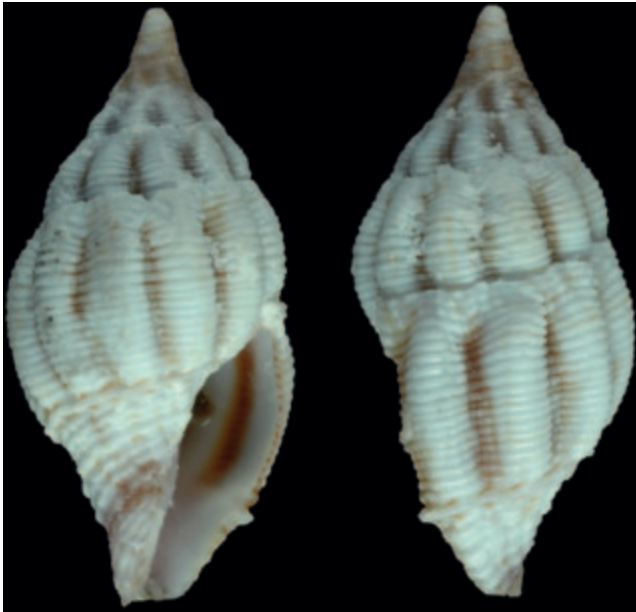
*Type locality* New Caledonia, Récif Sarcelle, ca. 22°26'S, 167°12' E, subtidal.

*Material examined* Only known from the type material, collected by G. Bargibant and P. Tirard, February 1993.

*Description* Shell small, fusiform ovoid, relatively broad (h/d 1.72–2.02), consisting of 6+ whorls; protoconch and early protoconch whorls indistinct because of encrustations / dissolution, but protoconch appearing to be paucispiral; spire moderately high, 50% of total shell height, broadly coeloconoid; whorls weakly inflated, with subsutural band adpressed to preceding whorl, forming a weakly crenulated suture, whorl periphery regularly convex; axial sculpture consisting of 10 (on penultimate whorl) to 11 (on last whorl) low, rounded ribs, interspaces much narrower than ribs, extending adapically from suture and interrupted rather abruptly at tooth-bearing cord; spiral sculpture consisting of



**Figure 3** Radulae. A *Benimakia fastigium* (Reeve 1847). B *Benimakia lanceolata* (Reeve 1847). C *Benimakia nux*, new species. D *Benimakia rubus* new species. E *Benimakia vermeiji*, new species. F *Nodolaturus nodatus* (Gmelin 1791). All scale bars 25  $\mu$ m.



**Figure 4** *Benimakia nux*, new species. Récif Sarcelle, New Caledonia. Holotype, height 19.0 mm.

sharply defined raised cords, of even strength on cords and between cords, evenly spaced, interspaces narrower than cords, 3 in subsutural ramp, 17 on periphery above enlarged cord demarcating base, and about 11 cords on base and canal; outer lip convex, with a very distinct labral tooth at end of enlarged cord, indistinctly constricted at base of siphonal canal; inner side of outer lip with 9 smooth, continuous, deeply recessed lirae; columella with two very low, closely spaced folds; parietal thickening at adapical end of columella absent; siphonal fasciole and false umbilicus absent; siphonal canal straight. Shell white with background colour between ribs lavender brown, siphonal canal lavender brown, inner lip lavender, inner side of outer lip alternating white and lavender brown as on axial sculpture. Radula typical of *Benimakia* (Fig. 3C).

Dimensions: holotype height 19.0 mm, width 9.55 mm.

**Remarks** *Benimakia nux* is distinguished from other species of *Benimakia* by its short, broad shell, with strong spiral cords and distinctive colour pattern. It has a superficial resemblance to *Peristernia reincarnata* Snyder, 2000, which also has a rounded shell, with interspaces darker than axial ribs, but lacks a tooth-bearing spiral cord.

Just like *B. mariei*, our two specimens of *B. nux* were rather thickly encrusted by calcareous algae and it is possible that this makes them

little attractive to collectors and explains why this shallow water species has not been collected otherwise.

**Etymology** From the Latin *nux*, a nut, with reference to the overall rounded shell contour; used as a noun in apposition.

*Benimakia rubus* n. sp.  
(Figs 2F, 3D)

**Type material** Holotype (dd) MNHN 25397, 6 paratypes (lv and dd) MNHN 25398.

**Type locality** Vanuatu, north coast of Malo I., Bruat Channel, 15°37.7'S, 167°11.3'E, 10 m [Santo Global Biodiversity Survey 2006, sta. DB25].

**Material examined** The 7 spms in the type lot, all from the type locality.

**Description** [Holotype] Shell small, fusiform, basally constricted, slender (h/d 2.47), consisting of 8+ whorls; protoconch and tip of teleoconch (one whorl?) broken off; spire high, 52% of total shell height; whorls unevenly inflated, with concave subsutural band adpressed to preceding whorl, forming an undulating suture, whorl periphery regularly convex; axial sculpture consisting of 7 (on penultimate and last whorls) high, rounded ribs, interspaces broader than ribs, extending adapically from below subsutural ramp to basal cord, not extending on base; spiral sculpture consisting of raised cords, of even strength on ribs and between ribs, evenly spaced, interspaces as broad as cords, 3 in subsutural ramp, beaded, 11 on periphery above enlarged cord demarcating base, and about 15 uneven cords on base and neck, 4 of these stronger on neck; outer lip convex, without distinct labral tooth, constricted at base of siphonal canal; inner side of outer lip with 12 smooth, continuous, deeply recessed lirae; columella with two very low, closely spaced folds; parietal thickening at adapical end of columella absent; siphonal fasciole and false umbilicus absent; siphonal canal straight. Shell overall lilac brown with darker interspaces between ribs, cords on ramp with white beads separated by brown intervals, base of shell and aperture lavender aperture. Radula typical of *Benimakia* (Fig. 3D).

Dimensions: holotype height 17.05 mm, width 6.9 mm.



*Distribution* Only known from the type locality.

*Remarks* *Benimakia rubus* is distinguished by its small adult size, shell base delimited by distinctly set off cord, and overall lilac brown colour.

*Etymology* The specific epithet is the Latin for raspberry, with reference to the general appearance and colour of the shell. It is used as a noun in apposition.

*Benimakia sowerbyi* (Melvill 1907) comb. nov.

*Latirus* (*Peristernia*) *sowerbyi* Melvill 1907: 217, text fig.

*Peristernia sowerbyi* (Melvill) – Cernohorsky, 1980: 118, figs 13, 14

*Type material* Holotype NHMUK 1907.2.6.1.

*Remarks* *B. sowerbyi* has a very distinct colour pattern with dark brown ribs and beige interspaces. It has a confirmed distribution including the Tuamotu Is. and the Marshall Is. The original type locality (“Galapagos?”) was an error.

*Benimakia vermeiji* n. sp.  
(Figs 2E, 3E)

*Type material* Holotype MNHN 25399 and 1 paratype MNHN 25400.

*Type locality* Loyalty Islands, Lifou, Baie du Santal; subtidal [LIFOU 2000: sta. 1432].

*Material examined* LIFOU 2000, all from Baie du Santal: sta. 1423, off Peng, 20°54.0'S, 167°07.3'E, 12 m, 1 dd.- Sta. 1432, Récif Shelter, 20°53.5'S, 167°02.7'E, 12–32 m, 1 lv (holotype), 1 dd (paratype).- Sta. 1453, 20°54.6'S, 167°02.1'E, 21–30 m, 1 dd; Sta. 1454, 20°56.6'S, 167°02.0'E, 15–18 m, 1 dd.

*Description* Shell small, fusiform, basally constricted, relatively slender (h/d 2.25–2.54), consisting of 7 whorls; protoconch indistinct because of encrustations/wear on all specimens, but appearing to be paucispiral; spire high, 50% of total shell height, weakly coeloconoid; whorls weakly inflated, with concave subsutural band extensively adpressed to preceding whorl, forming a crenulated, undulating suture, whorl periphery regularly convex; axial sculpture consisting of 12 (on penultimate whorl) to 13 (on last whorl) high, rounded ribs, interspaces narrower



**Figure 5** *Benimakia mariei* (Crosse 1869). Nouméa, New Caledonia. Height 20.4 mm.

than ribs, extending adapically from subsutural ramp and gradually becoming obsolete on base; spiral sculpture consisting of raised cords, of even strength on ribs and between ribs, evenly spaced, interspaces as broad as cords, 3 in subsutural ramp, 13 on periphery above slightly enlarged cord demarcating base, and about 9 cords on base and canal; outer lip convex, without distinct labral tooth at end of slightly enlarged cord, constricted at base of siphonal canal; inner side of outer lip with 11 smooth, continuous, deeply recessed lirae; columella with two very low, closely spaced folds; parietal thickening at adapical end of columella absent; siphonal fasciole and false umbilicus absent; siphonal canal straight. Shell brown with a lavender aperture. Radula typical of *Benimakia* (Fig. 3E).

Dimensions: holotype height 23.5 mm, width 9.25 mm.

*Distribution* Only known from Lifou, Loyalty Islands.

*Remarks* *Benimakia vermeiji* is more slender and more finely sculptured than *B. rhodostoma*, and in *B. vermeiji* the cord that demarcates periphery from base is only slightly enlarged and without a labral tooth. For illustrations and discussion of the geographical variation of *B. rhodostoma*, we refer to Vermeij & Snyder (2003). In general shell

shape, *B. vermeiji* is most similar to *Benimakia sowerbyi* (Melvill 1907) and *B. flavida* (A. Adams 1855). As noted, *B. sowerbyi* has a very distinct colour pattern with dark brown ribs and beige interspaces, and a much coarser spiral sculpture. *B. flavida* has fewer and stronger axial ribs, and the cord that demarcates periphery from base is significantly enlarged and ends in a small labral tooth.

*Etymology* Named after Geerat J. Vermeij, for his long time interest in gastropods with a labral tooth, including *Benimakia*.

#### ACKNOWLEDGEMENTS

We thank our colleagues Yuri Kantor and Ellen Strong, for preparation and SEM of the radulae; Philippe Maestrati for photography; and Gilberto Marani for mounting the plates. Field work in Lifou, Rapa and Santo was supported by grants from the Total Foundation, and benefited from in-kind support from Institut de Recherche pour le Développement (IRD, Nouméa).

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