

Deep-water Columbellidae (Mollusca: Gastropoda) from New Caledonia

Kevin Monsecour⁽¹⁾ & David Monsecour⁽²⁾

⁽¹⁾ Roodhuisstraat 3A, 3200 Aarschot, Belgium
kevin.monsecour@telenet.be

⁽²⁾ Dahliastraat 24, 3200 Aarschot, Belgium
david.monsecour@telenet.be

ABSTRACT

Eighty-one species of Columbellidae are recorded from the New Caledonia region from depths in excess of 100 meters, with a majority occurring in the 200–600 m interval, and none recorded from deeper than 900 m. Eight are previously known, and 73 are described as new species. Most are small to very small, with 23 species (28%) smaller than 5 mm, the smallest measuring 1.9 mm. Most species have paucispiral protoconchs indicating non-planktotrophic larval development: 6 (75%) of the known species, but only 9 (12%) of the new species, have multispiral larval shells. Up to eight species co-occur at the same station, however most stations have only two or three species. Regional heterogeneity within the New Caledonia EEZ is high: Loyalty Ridge has 15 species (3 endemics), the Coral Sea has 18 (3 regional endemics), the Far North has 26 (7 endemics), Norfolk Ridge has 34 (13 endemics), and mainland New Caledonia and satellite Ile des Pins have 44 (15 endemics).

RÉSUMÉ

Les Columbellidae (Mollusca: Gastropoda) du bathyal de Nouvelle-Calédonie.

Quatre-vingt une espèces de Columbellidae sont recensées de la région néo-calédonienne à des profondeurs supérieures à 100 mètres, dont une majorité dans la tranche 200–600 m, et aucune au delà de 900 m. Huit appartiennent à des espèces déjà connues, et 73 sont décrites comme nouvelles. La plupart sont petites à très petites : 23 espèces (28%) mesurent moins de 5 mm, la plus petite mesure 1,9 mm. La plupart ont des protoconques paucispirales indiquant un développement larvaire non-planctotrophe : 6 (75%) des espèces connues, mais seulement (12%) des espèces nouvelles ont des protoconques multispirales. On recense jusqu'à huit espèces dans une

seule station, mais la plupart des stations n'ont que deux ou trois espèces. La répartition à l'intérieur de la ZEE de Nouvelle-Calédonie montre une importante hétérogénéité régionale : la Ride des Loyauté a 15 espèces (dont 3 sont des endémiques régionaux), la Mer du Corail en a 18 (dont 3 endémiques), le Grand Nord 26 (dont 7 endémiques), la Ride de Norfolk 34 (dont 13 endémiques), et la Grande-Terre avec l'île des Pins 44 (dont 15 endémiques).

INTRODUCTION

Historically, the Columbellidae from New Caledonia have been studied intensively only once, and those only in shallow water, by Hervier (1900) who reported on the species occurring in the sublittoral zone of the archipelago. Most of these species have broad Indo-Pacific ranges, and have been reviewed subsequently by other authors in studies of the Columbellidae from other localities in the Indo Pacific. For example, Sleurs (1987) studied the species from northern Papua New Guinea, Drivas & Jay wrote several papers dealing with this family in Reunion (1990), the Western Indian Ocean (1997a) and the Red Sea (1997b), and DeMaintenon (2008) published a study on the species from Ambon. However, the Indo-Pacific deep-water species of this family are poorly known, and those from New Caledonia are no exception. Schepman (1911) and Thiele (1925) described the species collected during the *Siboga* and *Valdivia* Expeditions, respectively, and some more were described by Drivas & Jay (in the works mentioned above).

The present paper is based on the extensive material collected by the MNHN-IRD French expeditions undertaken since 1985 at bathyal depths (200-2000 m) in the New Caledonia area, including the Coral Sea, Norfolk Ridge, Grand Passage and Loyalty Ridge. The resulting collection comprises no less than 81 species of columbellids, of which eight only can be referred to species already described from other regions; 73 are recognized as new to science and described herein. In addition, the collection includes a further 11 species, represented by single specimens, often juveniles, that cannot be unambiguously identified, and may represent additional, and possibly new, taxa. Finally, there are a number of shallow-water taxa represented by allochthonous empty shells; these are not considered to be part of the deep-sea fauna and they have been excluded from the present report.

Despite an impressive total of 81 deep-water columbellid species, regional richness within the New Caledonia EEZ is significantly less, reflecting the significant regional heterogeneity. The Coral Sea has 18 species, of which three are Coral Sea endemics; Loyalty Ridge has 15 species (3 endemics), the Coral Sea has 18 (3 regional endemics), the Far North has 26 (7 endemics), Norfolk Ridge has 34 (13 endemics), and mainland New Caledonia and satellite Ile des Pins have 44 (15 endemics). Most are small to very small, with 23 species (28%) smaller than 5 mm, the smallest measuring 1.9 mm. Most species have paucispiral protoconchs indicating non-planktotrophic larval development: 6 (75%) of the known species, but only 9 (12%) of the new species, have multispiral larval shells. Up to eight species co-occur at the same station, however most stations have only two or three species.

In the New Caledonia region, up to eight species co-occur at the same station (e.g., BATHUS 4 stn DW914, 600-616 m: *Anachis incisa* n. sp., *A. inferiodentata* n. sp., *A. limula* n. sp., *A. pinguis* n. sp., *Retizafra rotundata* n. sp., *R. zingiber* n. sp., *Zafra gracilentata* n. sp., *Z. stricosa* n. sp.). Another station (NORFOLK 1 stn DW1717) has seven species, and four stations (BATHUS 1 stn DW654; BATHUS 1 stn DE700; NORFOLK 1 stn DW1723; SMIB 8 stn DW190) have six species that co-occur. However, most stations have only two to three species. Such a level of syntopy is significantly less than that observed in near-shore stations in the tropical West Pacific, where 20 or more columbellid species can result from a single collecting event, and single-station richness of 12-15 columbellid species is not rare (unpubl. data, based on material from the Santo, Panglao and New Caledonia expeditions).

When species richness is evaluated for discrete depth intervals, there is a severe deficit of records in the 100-200 m interval, reflecting the difficulty of sampling these depths which are too deep for diving, and too close to reefs for safe dredging. Despite this deficit, there is a sustained diversity in the 200-600 m interval, with an average of 30-35 species per 100-meter interval, then gradually diminishing below 600 m. The deepest record for a living columbellid in the New Caledonia region is for *Mitrella aesopiformis* n. sp., recorded alive at depths between 825-860 m. Although the sampling effort in deeper water is much more patchy, the absence - or at least the extreme scarcity - of columbellids

at depths below 900 meters is probably significant. This is in contrast with the North Atlantic, where species such as *Amphissa acutecostata* (Philippi, 1844) are frequent below 1000 m, and *Mitrella nitidulina* (Locard, 1897) has been sampled several times alive in the 2000-3000 m interval (Bouchet & Warén 1985).

MATERIAL AND METHODS

The present contribution is based on 470 lots (= species x station) representing 5066 specimens (live-taken and empty shells, but excluding occasional allochthonous empty shells of shallow-water species) of Columbellidae. This represents an average of 62 specimens and six lots per species.

In fact, however, only 14 species (17%) are represented by 62 specimens or more, and as many as 31 species (38%) are represented by five specimens or less.

For the background and context of the expeditions that generated the material, see Bouchet *et al.* 2008.

The descriptions are based on the shells (protoconch and teleoconch) of the type material. With a few exceptions, the operculum and radula have not been studied. The bathymetric ranges of the species are summarized by taking the inner values of the deepest and shallowest stations, as explained in Bouchet *et al.* (2008).

ABBREVIATIONS

IRD Institut de Recherche pour le Développement (formerly ORSTOM);
MNHN Muséum national d'Histoire naturelle, Paris.

Specimens

dd dead-collected specimen(s), empty shell(s);
H height;
juv. juvenile;
lv live-collected specimen(s);
mm millimetre.

Station data

stn station;
m metre.

The prefix to station number denotes:

CC shrimp trawl;
CP beam trawl;
DE epibenthic sledge;
DW Warén dredge;
KG USNEL boxcore;
PI Manned submersible dive.

SYSTEMATIC ACCOUNT

Family COLUMBELLIDAE Swainson, 1840

Subfamily COLUMBELLINAE Swainson, 1840

Genus *ZAFRONA* Iredale, 1916

Zafrona azteci n. sp.

Figures 1A, B

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-25125.

TYPE LOCALITY — Norfolk Ridge, Aztèque Bank, 23°18'S, 168°05'E, 305-330 m [SMIB 8: stn DW182-184].

MATERIAL EXAMINED — Known only from the holotype.

DISTRIBUTION — Norfolk Ridge, Aztèque Bank.

DESCRIPTION — Shell size typical for genus, adult size of holotype 6.4 mm; fusiform, elongate. Suture slightly impressed. Protoconch multispiral, 3.25 whorls, adorned with numerous axial riblets. Teleoconch of slightly less than five whorls. Axial sculpture of 13-14 axial ribs on all whorls, interspaces slightly narrower than ribs. Spiral sculpture obsolete on uppermost whorls, consisting of very fine incisions on subsequent whorls, and basal cords, ventrally ranging to just above adapical edge of columella. Outer lip thickened, with distinct rim, bearing continuation of spiral sculpture. Inner lip denticulate, with seven denticles; four adapicalmost denticles markedly stronger. Columellar callus thickened, semi-detached. Parietal callus thin. Columella with rim of merged denticles along entire length. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white to cream in colour, with slightly darker band immediately below suture. Protoconch off-white. Aperture and columella off-white. Holotype height 6.4 mm.

REMARKS — This species is set apart from all congeners by its protoconch with axial sculpture and the narrower aperture.

ETYMOLOGY — Named after the type locality on Aztèque Bank. The spelling «aztec» is used here in preference to the French spelling. Used as a noun in the genitive form.

Zafrona samadiae n. sp.

Figures 1C, D, O

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26658 and 1 (dd) paratype MNHN IM-2000-26659 (as listed below).

TYPE LOCALITY — New Caledonia, between Ile des Pins and Grand Récif Sud, 22°39'S, 167°11'E, 202-227 m [BATHUS 2: stn DW715].

MATERIAL EXAMINED — New Caledonia. BATHUS 2: stn DW715, 22°39'S, 167°11'E, 202-227 m, 1 dd, holotype MNHN IM-2000-26658 (Figures 1C, D, O). – MUSORSTOM 4: stn DW203, 22°36'S, 167°05'E, 105-110 m, 1 dd juv, paratype MNHN IM-2000-26659.

DISTRIBUTION — New Caledonia, between Ile des Pins and Grand Récif Sud, 110-202 m.

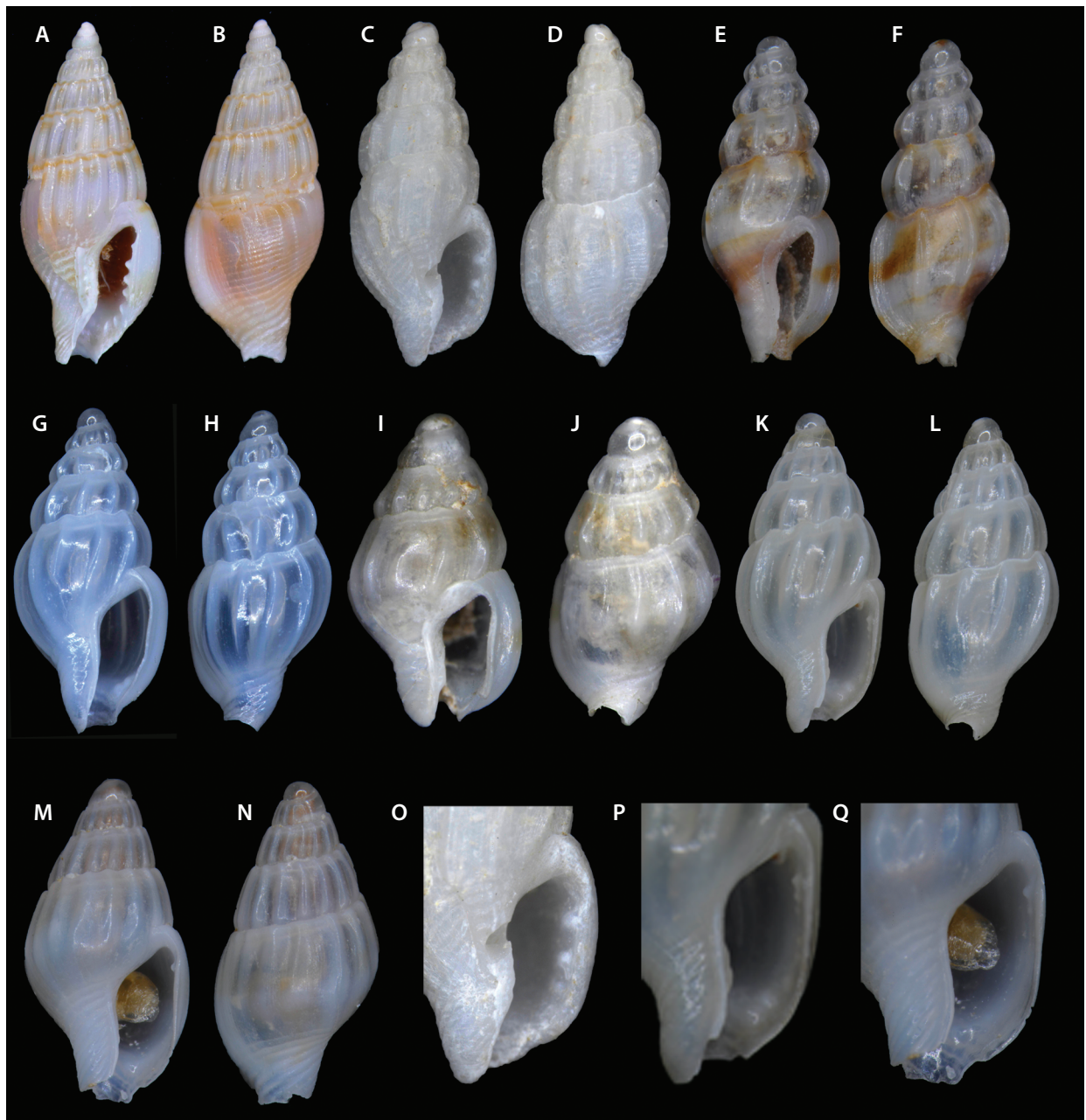


FIGURE 1

Zafrona azteci n. sp.; **A**, holotype (6.4 mm) MNHN IM-2000-25125, Norfolk Ridge, SMIB 8 stn DW182-184, 305-330 m; **B**, dorsal view of holotype. *Zafrona samadiae* n. sp.; **C**, holotype (7.0 mm) MNHN IM-2000-26658, New Caledonia, BATHUS 2 stn DW715, 202-227 m; **D**, dorsal view of holotype; **O**, aperture detail. *Anachis constrictocanalis* n. sp.; **E**, holotype (4.1 mm) MNHN IM-2000-26660, Norfolk Ridge, SMIB 8 stn DW190, 305-310 m; **F**, dorsal view of holotype. *Anachis inferiorentata* n. sp.; **G**, holotype (5.2 mm) MNHN IM-2000-26662, New Caledonia, BATHUS 4 stn DW914, 600-616 m; **H**, dorsal view of holotype. *Anachis pinguis* n. sp.; **I**, holotype (2.6 mm) MNHN IM-2000-26664, Norfolk Ridge, NORFOLK 1 stn DW1652, 290-378 m; **J**, dorsal view of holotype. *Anachis limula* n. sp.; **K**, holotype (4.5 mm) MNHN IM-2000-26668, New Caledonia, BATHUS 4 stn DW914, 600-616 m; **L**, dorsal view of holotype; **P**, aperture detail. *Anachis incisa* n. sp.; **M**, holotype (4.5 mm) MNHN IM-2000-26670, New Caledonia, BATHUS 4 stn DW929, 502-516 m; **N**, dorsal view of holotype; **Q**, aperture detail.

DESCRIPTION — Shell size typical for genus, adult size up to 7.0 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, 1.4 smooth whorls. Teleoconch of slightly less than 4.5 whorls. Axial sculpture of 10-12 equally spaced axial ribs on all whorls. Spiral sculpture consisting of seven very thin, flattened cords on spire, 15-16 on final whorl, and basal cords, ventrally ranging to just above mid-columella. Outer lip thickened, with small rim, bearing continuation of spiral sculpture. Inner lip denticulate, with five denticles; adapicalmost denticles markedly stronger. Columellar callus thickened. Parietal callus thin. Columella with rim of partially merged denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour. Protoconch off-white. Aperture and columella off-white. Holotype height 7.0 mm.

REMARKS — This species stands apart from all congeners in the combination of a paucispiral protoconch with weak spiral sculpture.

ETYMOLOGY — Named after Sarah Samadi (MNHN), molecular systematist and co-Principal Investigator of the Tropical Deep-Sea Benthos programme.

Subfamily ATILIINAE Cossmann, 1901

Genus *ANACHIS* H. Adams & A. Adams, 1853

Anachis constrictocanal n. sp.

Figures 1E, F

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26660 and 5 (dd) paratypes MNHN IM-2000-26661, 1 (dd) paratype coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°18'S, 168°05'E, 305-310 m [SMIB 8: stn DW190].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW923, 18°52'S, 163°24'E, 470-502 m, 1 dd. — Stn DW924, 18°55'S, 163°24'E, 344-360 m, 1 lv. Norfolk Ridge. BATHUS 3: stn DW824, 23°19'S, 168°00'E, 601-608 m, 1 dd juv. — SMIB 8: stn DW190, 23°18'S, 168°05'E, 305-310 m, 7 dd, holotype MNHN IM-2000-26660 (Figures 1E, F) and 5 paratypes MNHN IM-2000-26661, 1 paratype coll. K. & D. Monsecour, 1 dd juv.

DISTRIBUTION — New Caledonia: Grand Passage and Norfolk Ridge, 310-601 m.

DESCRIPTION — Shell small for genus, adult size up to 4.5 mm; fusiform, elongate. Suture impressed. Protoconch paucispiral, 1.5 smooth whorls. Teleoconch of 3.75 bulbous whorls. Axial sculpture of eight to nine ribs on every whorl, interspaces wide, with rib closest to outer lip strongest. Spiral sculpture of basal cords, ventrally ranging roughly to adapical edge of columella. Outer lip simple, smooth, bearing only continuation of basal cords. Inner lip smooth. Columellar callus slightly raised. Parietal callus thickened. Columella smooth. Siphonal canal short, half-open, slightly recurved. Teleoconch whorls semi-translucent, off-white in colour. Early whorls without pattern; final whorl with brown band at mid-whorl. Protoconch white, semi-translucent. Aperture and columella off-white. Holotype height 4.1 mm.

REMARKS — This species is most similar to *Anachis kraussii* (G. B. Sowerby I, 1844), but the latter differs by its larger size, multispiral protoconch, number of teleoconch whorls, wider siphonal canal, thicker shell and different colour pattern.

ETYMOLOGY — Latin adjective *constrictus*, marked by contraction, and *canalis*, channel, in reference to the constricted siphonal canal; used as a noun in apposition.

Anachis inferiodentata n. sp.

Figures 1G, H

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26662 and 10 (dd) paratypes MNHN IM-2000-26663, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Grand Passage, 18°49'S, 163°15'E, 600-616 m [BATHUS 4: stn DW914].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW914, 18°49'S, 163°15'E, 600-616 m, 57 dd, holotype MNHN IM-2000-26662 (Figures 1G, H) and 10 paratypes MNHN IM-2000-26663, 2 coll. K. & D. Monsecour, 43 dd juv. — Stn DW917, 18°47'S, 163°14'E, 397-400 m, 5dd, 2 dd juv. — Stn DW918, 18°49'S, 163°16'E, 613-647 m, 5 dd, 10 dd juv. — Stn DW923, 18°52'S, 163°24'E, 470-502 m, 1 dd, 1 dd juv. — CONCALIS: stn DW2980, 18°16'S, 162°57'E, 574-660 m, 4 dd. **Norfolk Ridge**. SMIB 8: stn DW 146-147, 24°55'S, 168°22'E, 508-532 m, 1 dd.

DISTRIBUTION — New Caledonia: Grand Passage and Norfolk Ridge, 400-613 m.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 6.0 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of four slightly bulbous whorls. Axial sculpture of ten ribs on every whorl, interspaces wide, with rib closest to outer lip strongest. Spiral sculpture of basal cords, ventrally ranging roughly to three-fourths of columella height. Outer lip simple, with final axial rib close to outer lip, smooth, bearing only continuation of basal cords. Inner lip nearly smooth, but with two very fine denticles just above constriction of siphonal canal. Columellar callus slightly raised. Parietal callus slightly thickened. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls semi-translucent, off-white in colour. Protoconch white, semi-translucent. Aperture and columella off-white. Holotype height 5.2 mm.

REMARKS — This species is most similar to *Anachis constrictocanalisis* n. sp., but differs in the lack of colour pattern, the presence of two denticles on the lower inner lip, the open siphonal canal, the number of axial ribs per whorl and the somewhat larger size.

ETYMOLOGY — Latin adjectives *inferior*, lower, and *dentatus*, toothed, in reference to the two denticles on the lower inner lip.

Anachis pinguis n. sp.

Figures 1I, J

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26664 and 4 (dd) paratypes MNHN IM-2000-26665-26667, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°26'S, 167°50'E, 290-378 m [NORFOLK 1: stn DW1652].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW914, 18°49'S, 163°15'E, 600-616 m, 4 dd. **Norfolk Ridge**. BERYX 11: stn CH41, 23°39'S, 168°00'E, 230-360 m, 1 dd, paratype MNHN IM-2000-26665. — NORFOLK 1: stn DW1652, 23°26'S, 167°50'E, 290-378 m, 1 dd, holotype MNHN IM-2000-26664 (Figures 1I, J). — Stn DW1684, 24°5'S, 168°22'E, 508-541 m, 1 dd, paratype MNHN IM-2000-26666. — NORFOLK 2: stn DW2040, 23°41'S, 168°01'E, 285 m, 3 dd, 2 paratypes MNHN IM-2000-26667, 1 coll. K. & D. Monsecour.

DISTRIBUTION — New Caledonia: Grand Passage and Norfolk Ridge, 285-600 m.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 3.0 mm; fusiform, bulbous. Suture slightly impressed. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of 2.75 bulbous whorls. Axial sculpture of *ca.* ten equally spaced ribs on every whorl. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella. Outer lip thickened, smooth, bearing only continuation of basal cords. Inner lip smooth. Columellar callus slightly raised. Parietal callus slightly thickened. Columella smooth, with slight axial rim close to edge. Siphonal canal short, open, recurved. Teleoconch whorls semi-translucent, off-white in colour. Protoconch white, semi-translucent. Aperture and columella off-white. Holotype height 2.6 mm.

REMARKS — This species is most similar to *Anachis constrictocanal* n. sp., but differs in its lack of brown banding, much smaller size, more bulbous whorls, open siphonal canal, fewer teleoconch whorls and in the number of axial ribs on the teleoconch whorls.

ETYMOLOGY — Latin adjective *pinguis*, fat, in reference to the small, rounded shell.

Anachis limula n. sp.

Figures 1 K, L, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26668 and 12 (dd) paratypes MNHN IM-2000-26669, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Grand Passage, 18°49'S, 163°15'E, 600-616 m [BATHUS 4: stn DW914].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW914, 18°49'S, 163°15'E, 600-616 m, 37 dd, holotype MNHN IM-2000-26668 (Figures 1K, L, P) and 12 paratypes MNHN IM-2000-26669, 2 coll. K. & D. Monsecour, 10 dd juv. – Stn DW918, 18°49'S, 163°16'E, 613-647 m, 1 dd, 1 dd juv. – Stn DW927, 18°56'S, 163°22'E, 444-452 m, 1 dd.

DISTRIBUTION — New Caledonia: Grand Passage, 452-613 m.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 5.0 mm; fusiform, bulbous. Suture slightly impressed. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of 3.75 slightly bulbous whorls. Axial sculpture of *ca.* 10-12 equally spaced, opisthocline ribs on every whorl. Spiral sculpture of basal cords, ventrally ranging to just below adapical end of columella. Outer lip slightly thickened, with straight rim crossing axial sculpture, smooth, bearing only continuation of basal cords. Inner lip denticulate with eight very fine denticles; adapical- and abapical-most denticles markedly stronger than central denticles. Columellar callus slightly raised. Parietal callus slightly thickened. Columella with slightly raised abapical rim. Siphonal canal short, open, recurved. Teleoconch whorls semi-translucent, off-white in colour. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 4.5 mm.

REMARKS — This species is most similar to *Anachis constrictocanal* n. sp., but differs in its more bulbous shell, number and shape of the axial ribs, broader aperture, presence of denticles on the inner lip and the lack of brown banding. Another closely related species is *Anachis inferiodentata* n. sp., but the present species differs in the lack of shouldered whorls, the shape of the aperture, the presence of denticles on the entire inner lip, the more recurved siphonal canal and the oblique axial sculpture.

ETYMOLOGY — Latin adjective *limulus*, oblique, in reference to the oblique axial ribs.

Anachis incisa n. sp.

Figures 1M, N, Q

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26670, 2 (dd) paratypes MNHN IM-2000-26671-26672, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Grand Passage, 18°52'S, 163°23'E, 502-516 m [BATHUS 4: stn DW929].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW914, 18°49'S, 163°15'E, 600-616 m, 1 dd, paratype MNHN IM-2000-26671. — Stn DW918, 18°49'S, 163°16'E, 613-647 m, 2 dd, paratypes MNHN IM-2000-26672, coll. K. & D. Monsecour. — Stn DW929, 18°52'S, 163°23'E, 502-516 m, 1 lv, holotype MNHN IM-2000-26670 (Figures 1M, N, Q).

DISTRIBUTION — New Caledonia: Grand Passage, 516-613 m.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 4.8 mm; fusiform. Suture slightly incised. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of 3.25 straight, slightly shouldered whorls. Axial sculpture of numerous axial ribs, with *ca.* 13-14 equally spaced ribs on every whorl. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip with very fine denticles: adapical- and abapical-most denticles stronger than central denticles. Columellar callus slightly raised. Parietal callus very weak, almost obsolete. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls semi-translucent, off-white in colour. Protoconch off-white, semi-translucent. Aperture and columella off-white. Operculum typical of genus; pale brown, semi-translucent, with terminal nucleus. Holotype height 4.5 mm.

REMARKS — This species stands apart from all other New Caledonian deep-water congeners in the high number of axial ribs and the incised suture.

ETYMOLOGY — Latin adjective *incisus*, incised, in reference to the suture. It is the first New Caledonian *Anachis* with this feature.

Anachis norfolkensis n. sp.

Figures 2A, B, K

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26673 and 7 (dd) paratypes MNHN IM-2000-26674, 1 (dd) coll. K. & D. Monsecour.

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°20'S, 168°01'E, 361-365 m [BATHUS 3: stn DW830].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — New Caledonia, Norfolk Ridge.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 4.8 mm; fusiform, elongate. Suture very slightly incised. Protoconch paucispiral, 1.75 to two whorls; second whorl with minute axial riblets. Teleoconch of 3.75 straight whorls. Axial sculpture of numerous axial ribs, with *ca.* 15-16 equally spaced ribs on every whorl. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella. Outer lip thickened, with distinct rim, smooth, bearing only continuation

of basal cords. Inner lip denticulate with four to five strong, equally spaced denticles. Columellar callus slightly raised. Parietal callus thin. Columella with small abapical rim. Siphonal canal short, open, straight. Teleoconch whorls semi-translucent, off-white in colour, with irregular, faint yellowish-brown colouring on penultimate and final whorls. Protoconch off-white, semi-translucent. Aperture and columella off-white. Height of holotype 4.4 mm.

REMARKS — This species is most similar to *Anachis incisa*, but differs in its larger protoconch, slightly larger teleoconch, narrower aperture with strong denticles, and longer and narrower siphonal canal. Specimens from BATHUS 3 stn DW824 (23°19'S, 168°00'E, 601-608 m, 6 dd, 2 dd juv) are very similar to the type material, but possess a slightly less bulbous protoconch and a somewhat more rounded aperture. At this stage, we do not consider these differences sufficient to establish a separate species, but more material is needed to draw a correct conclusion.

ETYMOLOGY — Adjective formed after Norfolk Ridge, the type locality.

Anachis polyaulax n. sp.

Figures 2C, D

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26675 and 1 (dd) paratype MNHN IM-2000-26676.

TYPE LOCALITY — New Caledonia, between Ile des Pins and Grand Récif Sud, 23°00'S, 167°15'E, 360 m [BIOCAL: stn DW38].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — New Caledonia, between Ile des Pins and Grand Récif Sud.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 4.4 mm; fusiform, elongate. Suture very slightly incised. Protoconch paucispiral, slightly less than 1.5 whorls, smooth. Teleoconch of four whorls. Axial sculpture of numerous axial ribs, with *ca.* 14-15 equally spaced ribs on every whorl. Spiral sculpture obsolete on early whorls, consisting of broad, flattened cords with very narrow interspaces on final whorls, with seven cords on second half of penultimate whorl and 14-15 cords on final whorl. Outer lip thickened, with distinct rim, bearing only continuation of spiral cords. Inner lip denticulate with five to six equally spaced denticles. Columellar callus demarcated. Parietal callus thin. Columella with small abapical rim of *ca.* three merged denticles. Siphonal canal short, open, straight. Teleoconch whorls semi-translucent, salmon-coloured. Protoconch off-white. Aperture and columella off-white. Holotype height 4.4 mm.

REMARKS — This species is similar to *Anachis incisa* n. sp. and *A. norfolkensis* n. sp., but differs in its smaller and smooth protoconch and in the presence of spiral sculpture on the penultimate and final whorls.

ETYMOLOGY — Greek *poly*, many, and *aulax*, groove, in reference to the ribbed sculpture.

Anachis proclivis n. sp.

Figures 2E, F, L

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26677 and 2 (dd) paratypes MNHN IM-2000-26678.

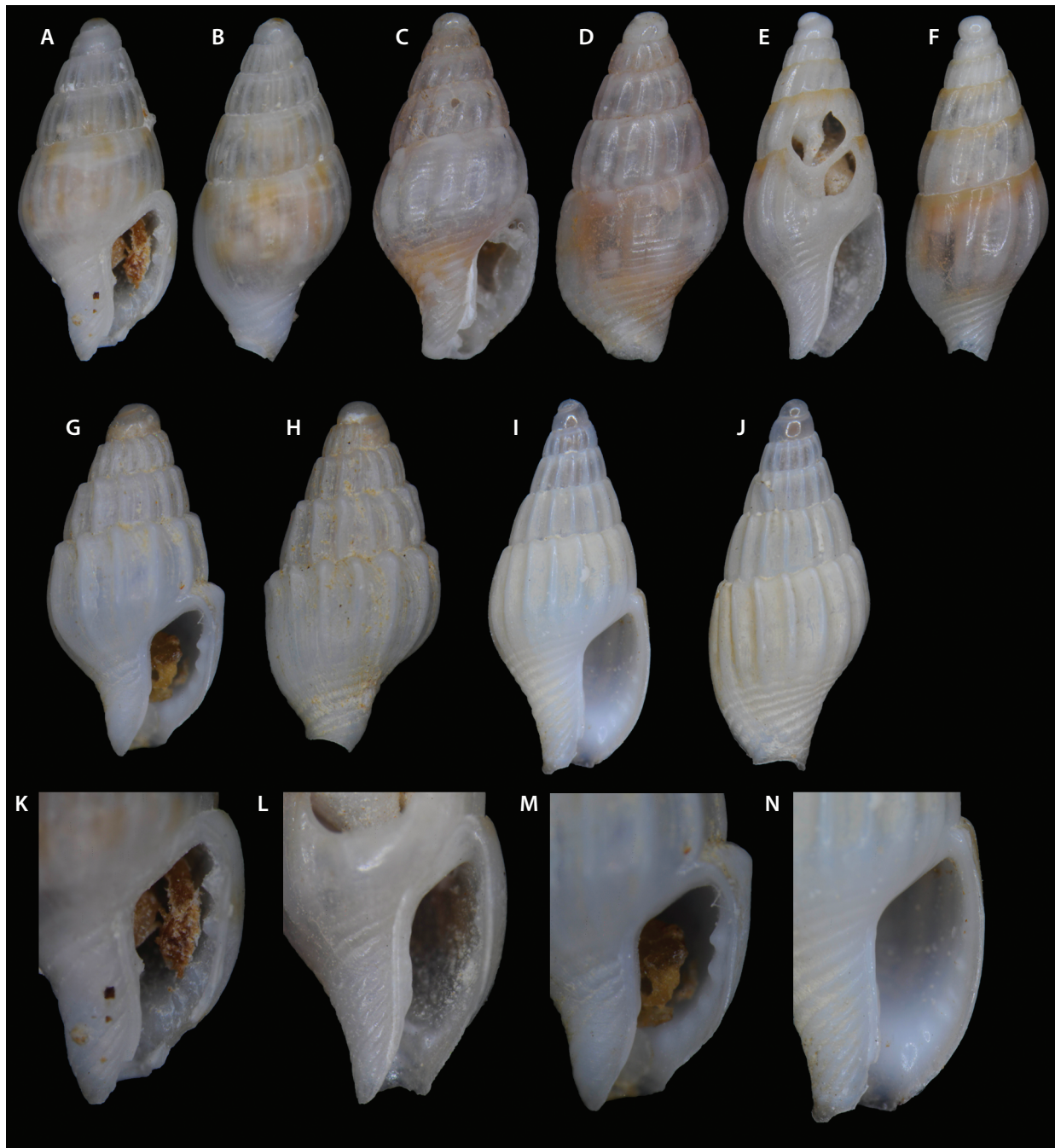


FIGURE 2

Anachis norfolkensis n. sp.; **A**, holotype (4.4 mm) MNHN IM-2000-26673, Norfolk Ridge, BATHUS 3 stn DW830, 361-365 m; **B**, dorsal view of holotype; **K**, aperture detail. *Anachis polyaulax* n. sp.; **C**, holotype (4.4 mm) MNHN IM-2000-26675, New Caledonia, BIOCAL stn DW38, 360 m; **D**, dorsal view of holotype. *Anachis proclivis* n. sp.; **E**, holotype (4.4 mm) MNHN IM-2000-26677, Loyalty Ridge, BIOCAL stn DW08, 435 m; **F**, dorsal view of holotype; **L**, aperture detail. *Anachis facula* n. sp.; **G**, holotype (3.6 mm) MNHN IM-2000-26679, New Caledonia, BATHUS 1 stn CP698, 491-533 m; **H**, dorsal view of holotype; **M**, aperture detail. *Costoanachis albicostata* n. sp.; **I**, holotype (8.6 mm) MNHN IM-2000-26682, Norfolk Ridge, BIOCAL stn DW51, 680-700 m; **J**, dorsal view of holotype; **N**, aperture detail.

TYPE LOCALITY — Loyalty Ridge, between Lifou and Ouvéa, 20°35'S, 166°54'E, 435 m. [BIOCAL: stn DW08].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — Loyalty Ridge, between Lifou and Ouvéa.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 4.4 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, slightly less than 1.5 whorls, smooth. Teleoconch of 4.25 straight whorls. Axial sculpture of *ca.* ten equally spaced opisthocline ribs on all whorls. Spiral sculpture absent on uppermost whorls; consisting of obscure incisions on subsequent whorls, and basal cords, ventrally ranging to just below adapical edge of columella. Outer lip thickened, with small rim, bearing only continuation of spiral sculpture. Inner lip denticulate, with six weak, equally spaced denticles. Columellar callus thickened. Parietal callus thin. Columella with small abapical rim, consisting of merged denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white to cream in colour, with pale, brownish-orange subsutural band. Protoconch off-white. Aperture and columella off-white. Holotype height 4.4 mm.

REMARKS — This species stands apart from all congeners in the combination of straight profile, opisthocline axial ribs and shape of the aperture.

ETYMOLOGY — Latin adjective *proclivis*, sloping, in reference to the oblique axial ribs.

***Anachis facula* n. sp.**

Figures 2G, H, M

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26679 and 10 (dd) paratypes MNHN IM-2000-26680-26681, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, east coast off Hienghène, 20°34'S, 164°57'E, 491-533 m [BATHUS 1: stn CP698].

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn CP698, 20°34'S, 164°57'E, 491-533 m, 1 lv, holotype MNHN IM-2000-26679 (Figures 2G, H, M), 3 dd, 3 dd juv, all paratypes MNHN IM-2000-26680. — Stn DE696, 20°34'S, 164°57'E, 497-520 m, 1 dd, 3 dd juv. — Stn DE697, 20°34'S, 164°58'E, 570-650 m, 4 dd, paratypes MNHN IM-2000-26681. — BATHUS 4: stn CP948, 20°33'S, 164°57'E, 533-610 m, 3 dd, 1 paratype coll. K. & D. Monsecour, 2 dd juv.

DISTRIBUTION — New Caledonia: east coast, 520-570 m.

DESCRIPTION — Shell small for genus, adult size up to *ca.* 4.4 mm; fusiform, strongly shouldered. Suture slightly impressed. Protoconch paucispiral, 1.6 smooth whorls. Teleoconch of 3.3 whorls. Axial sculpture of 13-14 strong, equally spaced ribs on every whorl. Spiral sculpture of basal cords, ventrally ranging to just below adapical end of columella. Outer lip slightly thickened, bearing only continuation of spiral cords. Inner lip denticulate, with five equally spaced denticles of equal size. Columellar callus thickened, slightly demarcated. Parietal callus thin, smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour. Protoconch creamy off-white. Aperture and columella off-white. Holotype height 3.6 mm.

REMARKS — This species is reminiscent of *Anachis chuni* (Thiele, 1925), but differs in its smaller size, fewer axial ribs per whorl, basal cords ranging only to the adapical end of the columella and the less scalariform teleoconch.

ETYMOLOGY — Latin *facula*, torch, in reference to the overall shape with axial cords ending exactly on the shoulder, suggestive of an Olympic torch; used as a noun in apposition.

Genus *COSTOANACHIS* Sacco, 1890

Costoanachis albicostata n. sp.

Figures 2I, J, N

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26682 and 15 (lv & dd) paratypes MNHN IM-2000-26683, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°05'S, 167°45'E, 680-700 m [BIOCAL: stn DW51].

MATERIAL EXAMINED — New Caledonia. BIOCAL: stn DW48, 23°00'S, 167°29'E, 775 m, 3 dd juv. – Stn DW51, 23°05'S, 167°45'E, 680-700 m, 4 lv, holotype MNHN IM-2000-26682 (Figures 2I, J, N) and 13 dd paratypes MNHN IM-2000-26683, 1 coll. K. & D. Monsecour, 10 lv juv, 10 dd juv. – BIOGEOCAL: stn KG228, 21°31'S, 166°24'E, 960 m, 1 dd juv.

DISTRIBUTION — New Caledonia: east coast of Grande Terre and Norfolk Ridge, 700-960 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 9.0 mm; fusiform, elongate. Whorls slightly shouldered. Protoconch paucispiral, ~1.75 smooth whorls. Teleoconch of *ca.* four straight whorls. Axial sculpture of numerous close-set axial ribs, with 14 on first whorl and up to 16 on final whorl. Spiral sculpture of basal cords, ventrally ranging to mid-parietal height. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with six to seven denticles becoming stronger abapically. Columellar callus slightly raised. Parietal callus thin. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls white to off-white in colour. Protoconch white, semi-translucent. Aperture and columella white to off-white. Holotype height 8.6 mm. Operculum typical of genus; pale brown, semi-translucent, with terminal nucleus.

ETYMOLOGY — Latin adjectives *albus*, white, and *costatus*, ribbed, in reference to the completely white shell with numerous axial ribs.

Genus *INDOMITRELLA* Oostingh, 1940

Indomitrella schepmani (K. Monsecour & D. Monsecour, 2007)

Figures 3A, B, M, Q

Mitrella (*Indomitrella*) *schepmani* K. Monsecour & D. Monsecour, 2007: 166, figs 1, 2.

Columbella (*Atilia*) *conspersa* var. *brevis* Schepman 1911: 88, pl. 20, fig. 9. (non *Columbella* (*Mitrella*) *scripta* var. *brevis* Monterosato, 1875).

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn DW654, 21°17'S, 165°57'E, 237-298 m, 1 dd – BATHUS 2: stn DW739, 22°35'S, 166°27'E, 465-525 m, 1 dd. – Stn DW749, 22°33'S, 166°26'E, 233-258 m, 1 dd. **Loyalty Ridge**. LIFOU 2000: stn DW1650, 20°54'S, 167°02'E, 120-250 m, 10 lv (1 coll. K. & D. Monsecour), 2 lv juv, 29 dd, 4 dd juv. **Coral Sea**. EBISCO: stn DW2608, 19°33'S, 158°40'E, 393-396 m, 1 dd.

DISTRIBUTION — New Caledonia: Coral Sea, east and west coasts of Grande Terre, and Loyalty Ridge, 250-465 m. Papua New Guinea, Philippines and Indonesia.

REMARKS — This is the first record from the New Caledonia region of this species with multispiral protoconch, indicative of good larval dispersal potential. Specimens from New Caledonia have a slightly longer siphonal canal and are slightly bigger, but we believe this falls within the range of intraspecific variability.

Indomitrella drivasi n. sp.

Figures 3C, D, R

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-25117 and 10 (lv) paratypes MNHN IM-2000-26684, 2 (lv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, east coast off Canala, 20°57'S, 165°35'E, 160-220 m [BATHUS 1: stn DE700].

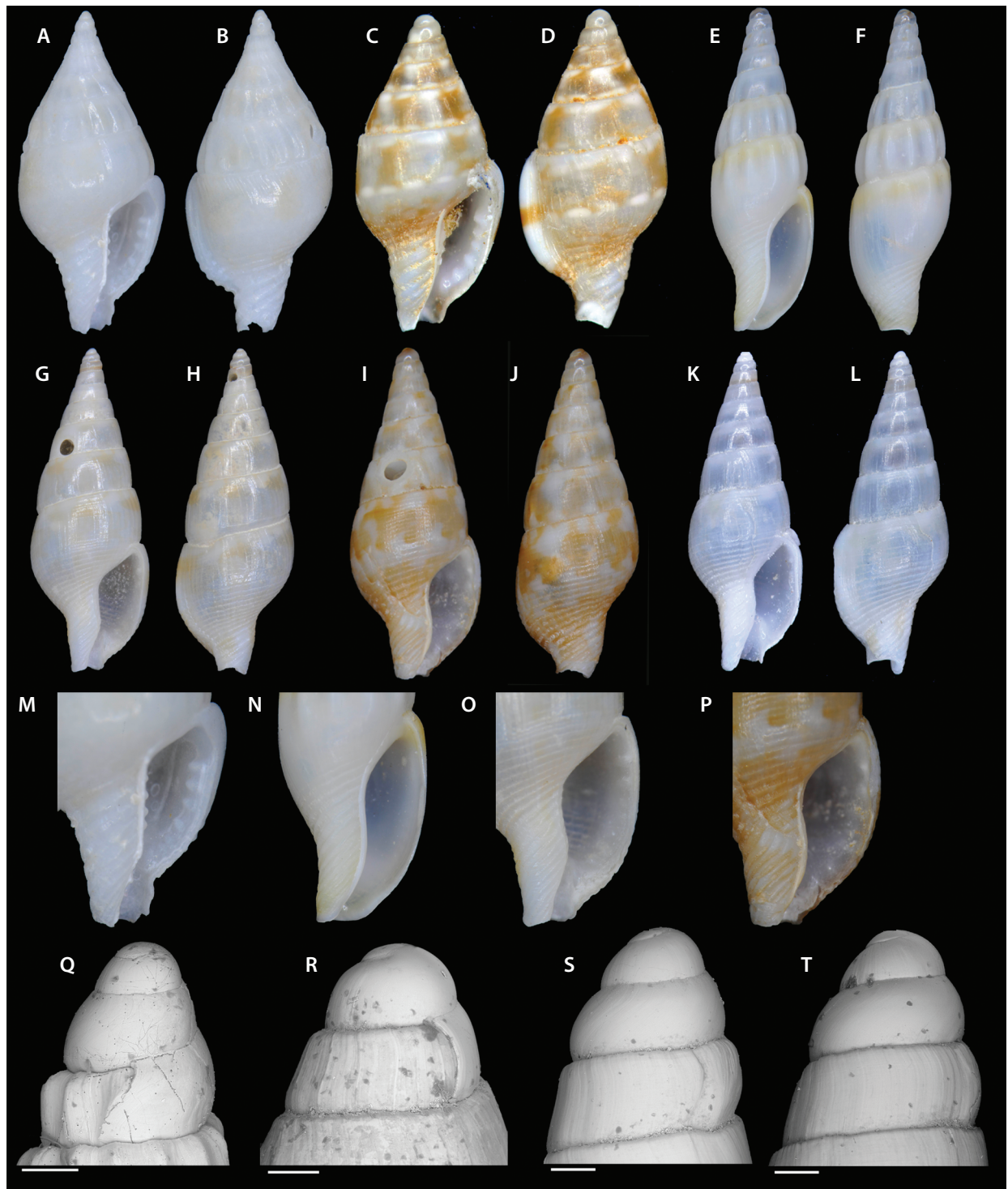
MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn CP713, 21°45'S, 166°37'E, 250 m, 1 lv juv. – Stn DE700, 20°57'S, 165°35'E, 160-220 m, 27 lv, holotype MNHN IM-2000-25117 (Figures 3C, D, R), 10 paratypes MNHN IM-2000-26684, 2 coll. K. & D. Monsecour, 4 lv juv, 37 dd, 85 dd juv. – Stn DW639, 21°52'S, 166°47'E, 120-180 m, 2 dd. – Stn DW640, 21°52'S, 166°48'E, 174 m, 2 dd. – Stn DW653, 21°17'S, 165°57'E, 190-207 m, 1 dd. – Stn DW654, 21°17'S, 165°57'E, 237-298 m, 1 dd juv. – Stn DW706, 21°42'S, 166°34'E, 247-252 m, 7 dd, 1 dd juv. – TERRASSES: stn DW3078, 22°29'S, 167°30'E, 180-210 m, 2 dd. – Stn DW3093, 22°06', 167°03'E, 190-200 m, 1 lv, 1 dd. – Stn DW3094, 22°04'S, 167°03'E, 250-300 m, 1 dd.

DISTRIBUTION — New Caledonia: east coast from off Ponerihouen to Ile des Pins, 174-250 m, alive in 200-250 m.

DESCRIPTION — Shell small for genus, adult size up to 8.4 mm; fusiform, elongate. Suture impressed. Protoconch multispiral, 1.75-2 smooth whorls. Teleoconch of 4.25-4.5 whorls. Axial sculpture of fine growth lines only. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip thickened, with strong axial rim, smooth, bearing only continuation of basal cords. Inner lip with clear sinus, denticulate, with six strong, equally spaced denticles. Columellar callus marked by distinct rim along siphonal canal. Parietal callus absent or very weak. Columella with five to six denticles. Siphonal canal rather long for genus, open, slightly recurved and curved to left when viewed from below. Teleoconch whorls off-white with beige, with white subsutural band, periodically interrupted by beige flammules. Second white band at mid-whorl on final whorl, appearing just above suture on spire whorls. Protoconch white, semi-translucent. Aperture and columella off-white. Holotype height 5.9 mm. Operculum typical of genus; pale brown, semi-translucent.

FIGURE 3

Indomitrella schepmani (K. Monsecour & D. Monsecour, 2007); **A**, shell (8.5 mm), BATHUS 2 DW739, 465-525 m; **B**, dorsal view; **M**, aperture detail; **Q**, protoconch of specimen (9.5 mm), New Caledonia, BATHUS 2 DW749, 223-258 m. *Indomitrella drivasi* n. sp.; **C**, holotype (5.9 mm) MNHN IM-2000-25117, New Caledonia, BATHUS 1 stn DE700, 160-220 m; **D**, dorsal view of holotype; **R**, protoconch. *Indomitrella erronea* n. sp.; **E**, holotype (10.0 mm) MNHN IM-2000-26685, New Caledonia, SMIB 8 stn DW154, 235-252 m; **F**, dorsal view of holotype; **N**, aperture detail. *Indomitrella strongae* n. sp.; **G**, holotype (12.7 mm) MNHN IM-2000-26688, New Caledonia, TERRASSES stn DW3113, 250-280 m; **H**, dorsal view of holotype; **O**, aperture detail; **S**, protoconch of paratype (10.6 mm) MNHN IM-2000-25118, New Caledonia, MUSORSTOM 4 stn DW149, 165 m. *Indomitrella concalis* n. sp.; **I**, holotype (9.6 mm) MNHN IM-2000-26689, New Caledonia, CONCALIS stn DW3016, 244-252 m; **J**, dorsal view of holotype; **P**, aperture detail. *Indomitrella exsanguis* n. sp.; **K**, holotype (10.7 mm) MNHN IM-2000-25116, New Caledonia, BATHUS 4 stn DW902, 341-351 m; **L**, dorsal view of holotype; **T**, protoconch.



REMARKS — *Indomitrella drivasi* n. sp. clearly belongs to the genus *Indomitrella*, but lacks axial sculpture on early teleoconch whorls, one of the defining features of *Indomitrella*. *Indomitrella drivasi* n. sp. differs from *I. schepmani*, its closest congener, by the abovementioned lack of axial sculpture on early teleoconch whorls and the much smaller protoconch (1.75-2 whorls in *I. drivasi* n. sp. vs. 3.5-4 whorls in *I. schepmani*).

ETYMOLOGY — Named in honour of Jean Drivas for his contributions to the study of Columbellidae.

***Indomitrella erronea* n. sp.**

Figures 3E, F, N

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26685 and 6 (dd) paratypes MNHN IM-2000-26686-26687, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Kaimon Maru seamount, 24°46'S, 168°08'E, 235-252 m [SMIB 8: stn DW154].

MATERIAL EXAMINED — **Norfolk Ridge.** BIOCAL: stn DW64, 24°48'S, 168°09'E, 250 m, 1 dd juv. – CHALCAL 2: stn DW71, 24°42'S, 168°09'E, 230 m, 1 dd. – HALIPRO 2: stn BT70, 24°46'S, 168°09'E, 226-238 m, 1 dd. – SMIB 3: stn DW08, 24°45'S, 168°08'E, 233 m, 2 dd. – SMIB 8: stn CP161, 24°47'S, 168°09'E, 232-251 m, 1 dd, paratype MNHN IM-2000-26687. – Stn DW154, 24°46'S, 168°08'E, 235-252 m, 5 dd, 1 dd juv, holotype MNHN IM-2000-26685 (Figures 3E, F, N) and paratypes MNHN IM-2000-26686. – Stn DW157, 24°46'S, 168°08'E, 251-255 m, 2 dd. – Stn DW159, 24°46'S, 168°08'E, 241-245 m, 4 dd (1 coll. K. & D. Monsecour), 1 dd juv. – TERRASSES: stn DW3101, 22°59'S, 168°21'E, 320-390 m, 1 dd juv.

DISTRIBUTION — New Caledonia: Norfolk Ridge, 230-320 m.

DESCRIPTION — Shell size typical for genus, adult size up to 11.0 mm; fusiform, elongate. Suture impressed. Protoconch multispiral, two smooth whorls. Teleoconch of 5.5 whorls. Axial sculpture on early whorls of weak, equally spaced ribs; ribs more prominent on later whorls, but becoming obsolete on last half of body whorl. Spiral sculpture of basal cords, ventrally ranging to mid-parietal height. Outer lip scarcely thickened, smooth, bearing only continuation of basal cords. Inner lip weakly denticulate, with eight to ten very weak denticles, often clearly visible only at abapical end. Columellar callus marked by distinct rim along siphonal canal. Parietal callus weak. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white to cream in colour, with beige/brown subsutural band. Protoconch white, semi-translucent. Aperture and columella white to off-white. Holotype height 10.0 mm.

REMARKS — This species was initially confused by the authors with *Indomitrella haziensis* Drivas & Jay, 1990, described from Réunion. After examining the holotype (MNHN IM-2000-6436), we conclude that these represent two separate but related species. The new species differs from *I. haziensis* in possessing fewer teleoconch whorls (5.5 vs 6 in *I. haziensis*), unshouldered whorls, a less bulbous protoconch, and subsutural banding (*I. haziensis* is uniformly cream), and in lacking a subsutural groove.

ETYMOLOGY — Latin adjective *erroneus*, wrong, in reference to the confusion with *Indomitrella haziensis*, as mentioned in the remarks.

Indomitrella strongae n. sp.

Figures 3G, H, O, S

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26688 and 4 (dd) paratypes MNHN IM-2000-25118, IM-2000-27994-5, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, between Ile des Pins and Grand Récif Sud, 22°43'S, 167°16'E, 250-280 m [TERRASSES: stn DW3113].

MATERIAL EXAMINED — North of New Caledonia. CONCALIS: stn DW2952, 19°07'S, 163°20'E, 171-193 m, 1 dd juv. – Stn DW2953, 19°05'S, 163°19'E, 217-220 m, 1 dd juv. – MUSORSTOM 4: stn DW149, 19°08'S, 163°23'E, 165 m, 2 dd, paratypes MNHN IM-2000-25118 (Figure 3S), 10 dd juv. – Stn DW150, 19°07'S, 163°22'E, 110 m, 1 dd, paratype coll. K. & D. Monsecour, 6 dd juv. – Stn DW151, 19°07'S, 163°22'E, 200 m, 8 dd juv. – Stn DW227, 22°46'S, 167°20'E, 320 m, 1 dd, paratype MNHN IM-2000-27994. New Caledonia. BATHUS 2: stn DW715, 22°39'S, 167°11'E, 202-227 m, 1 dd, 2 dd juv. – BATHUS 4: stn DW901, 19°03'S, 163°15'E, 297 m, 2 dd juv. – NORFOLK 2: stn DW2158, 22°41'S, 167°14'E, 265-283 m, 1 dd juv. – TERRASSES: stn DW3113, 22°43'S, 167°16'E, 250-280 m, 2 dd, holotype MNHN IM-2000-26688 (Figures 3G, H, O) and paratype MNHN IM-2000-27995. Coral Sea. CHALCAL 1: stn DC31, 19°33'S, 158°30'E, 230 m, 1 dd juv.

DISTRIBUTION — New Caledonia: Coral Sea, Grand Passage, and Grande Terre between Ile des Pins and Grand Récif Sud, 110-320 m.

DESCRIPTION — Shell size typical for genus, adult size up to 15 mm; fusiform, elongate. Whorls slightly shouldered, suture slightly incised on final whorl. Protoconch multispiral, 2.75 smooth whorls. Teleoconch of 6-6.75 whorls. Axial sculpture of close-set, almost equally spaced, thin, weak axial riblets, becoming increasingly distinct towards final whorl. Spiral sculpture absent on early whorls, with weak spiral cords on subsequent whorls. On final whorl, spiral cords weak near suture, stronger abapically, with basal cords strongest. Outer lip thickened with distinct rim, with spiral sculpture continuing onto outer lip. Inner lip denticulate, with eight denticles: two adapicalmost denticles strong, five central denticles weaker, abapicalmost denticle, near constriction of siphonal canal, strongest. Columellar callus weak. Parietal callus very weak. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white to beige in colour, with subsutural band of darker brown and paler flammules. Protoconch off-white. Aperture and columella off-white. Holotype height 12.7 mm.

REMARKS — *Indomitrella strongae* is most similar to *I. conspersa* (Gaskoin, 1851), but differs in the lack of strong axial sculpture on the early teleoconch whorls, the spiral and axial sculpture on more abapical teleoconch whorls, the more bulbous protoconch, the much lighter shell and slightly larger size.

ETYMOLOGY — Named after Ellen Strong, whose careful editing and attention to details has improved the present manuscript.

Indomitrella concalis n. sp.

Figures 3I, J, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26689.

TYPE LOCALITY — New Caledonia, Grand Passage, 19°05'S, 163°28'E, 244-252 m [CONCALIS: stn DW3016].

MATERIAL EXAMINED — Known only from the holotype.

DISTRIBUTION — New Caledonia, Grand Passage.

DESCRIPTION — Shell size typical for genus, adult size of holotype 9.6 mm; fusiform, elongate. Suture slightly incised. Protoconch paucispiral, consisting of *ca.* 1.75 smooth whorls. Teleoconch of six whorls. Axial sculpture of fine growth lines. Spiral sculpture absent on early whorls, with spiral cords on subsequent whorls. On final whorl, spiral cords clearly visible, with basal cords somewhat stronger. Outer lip thickened, with distinct rim, bearing continuation of spiral sculpture. Inner lip denticulate, with seven denticles: two adapicalmost denticles strong, four central denticles weaker, abapicalmost denticle again stronger. Columellar callus thickened, with distinct rim. Parietal callus weak. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls beige in colour, with row of white flammules immediately above and below suture. Final whorl with second pale band at mid-whorl. Protoconch pale reddish-brown. Aperture off-white and columella beige. Holotype height 9.6 mm.

REMARKS — *Indomitrella concalis* n. sp. is most similar to *I. strongae* n. sp., but differs in the smaller, paucispiral protoconch, the less shouldered whorls, the absence of axial sculpture, the stronger spiral sculpture on the final whorl, the thicker shell and the colour pattern.

ETYMOLOGY — Named after the CONCALIS cruise, which yielded the only specimen known thus far.

Indomitrella exsanguis n. sp.

Figures 3 K, L, T

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-25116 and 1 (dd) paratype MNHN IM-2000-26690 (as listed below).

TYPE LOCALITY — New Caledonia, Grand Passage, 19°01'S, 163°15'E, 341-351 m [BATHUS 4: stn DW902].

MATERIAL EXAMINED — New Caledonia. BATHUS 4: stn DW902, 19°01'S, 163°15'E, 341-351 m, 1 dd, holotype MNHN IM-2000-25116 (Figures 3K, L, T). Coral Sea. MUSORSTOM 5: stn DW347, 19°39'S, 158°28'E, 260 m, 1 dd, paratype MNHN IM-2000-26690.

DISTRIBUTION — New Caledonia: Coral Sea and Grand Passage, 260-341 m.

DESCRIPTION — Shell size typical for genus, adult size up to 10.7 mm; fusiform, elongate. Suture slightly impressed. Protoconch multispiral, slightly more than three smooth whorls. Teleoconch of 6.25-6.5 whorls. Axial sculpture absent. Spiral sculpture almost obsolete on earliest whorls, becoming stronger, consisting of ten flattened, broad cords with narrow interspaces on penultimate whorl and *ca.* 16 on final whorl, continuing as slightly thicker basal cords. Outer lip slightly thickened, with small rim, bearing continuation of spiral sculpture. Inner lip denticulate, with seven denticles; two adapicalmost strong, four central denticles weaker, abapicalmost denticle again stronger. Columellar callus slightly thickened. Parietal callus weak. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour with faint, random pattern of beige flecks on all whorls, but more pronounced on lower whorls. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 10.7 mm.

REMARKS — Most similar to *Indomitrella concalis*, but differing in the multispiral protoconch of a different colour, the higher spire and the colour pattern.

ETYMOLOGY — Latin adjective *exsanguis*, pale, in reference to the pale colour pattern.

Genus *MITRELLA* Risso, 1826

Mitrella praetermissa n. sp.

Figures 4A, B

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26809 and 4 (lv) paratypes MNHN IM-2000-26810, 1 (dd juv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°17'S, 168°14'E, 200-291 m [NORFOLK 1: stn DW1724].

MATERIAL EXAMINED — New Caledonia. NORFOLK 1: stn DW1724, 23°17'S, 168°14'E, 200-291 m, 1 lv, holotype MNHN IM-2000-26809 (Figures 4A, B). — Stn DW1727, 23°17'S, 168°14'E, 190-212 m, 4 lv (3 juv), paratypes MNHN IM-2000-26810, 4 dd juv (1 paratype coll. K. & D. Monsecour).

DISTRIBUTION — Known only from Norfolk Ridge, alive in 200-212 m.

DESCRIPTION — Shell rather small for genus, adult size up to 9.2 mm; fusiform, elongate, very slender. Suture slightly impressed. Protoconch paucispiral, 1.75 whorls. Teleoconch of 6-6.5 whorls. Axial sculpture of fine growth lines only. Spiral sculpture of basal cords, ventrally ranging to just above adapical edge of columella, weakening adapically. Outer lip S-shaped, not thickened, smooth, bearing only continuation of basal cords. Inner lip smooth. Columellar callus very weak. Parietal callus very weak, almost obsolete. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour with much clearer white band just above mid-whorl on later whorls, appearing as semi-translucent band just below suture on first whorls. Protoconch off-white with semi-translucent, brownish subsutural band. Aperture and columella white to off-white. Operculum typical of genus; pale brown, semi-translucent, with terminal nucleus. Holotype height 9.2 mm.

REMARKS — *Mitrella praetermissa* n. sp. is very similar to *Mitrella longissima* K. Monsecour & D. Monsecour, 2007, a species found in more shallow water (18-60 m). Both are of roughly the same size and general shell form, but *Mitrella praetermissa* can be distinguished from *Mitrella longissima* by its more elegant protoconch (both are paucispiral), more elegant shell shape, the S-shaped aperture, the presence of the brown subsutural band on the protoconch and the white band just above mid-whorl.

ETYMOLOGY — Latin adjective *praetermissus*, overlooked, in reference to the confusion with *Mitrella longissima*.

Mitrella maestratii K. Monsecour & D. Monsecour, 2011

Figures 4C, D, O, S

Mitrella maestratii K. Monsecour & D. Monsecour, 2011: 31, pl. 2, figs 3-4.

MATERIAL EXAMINED — New Caledonia. LAGON: stn DW830, 20°49'S, 165°19'E, 105-110 m, 3 dd.

DISTRIBUTION — New Caledonia: off east coast of Grande Terre. Philippines, alive in 77-200 m.

REMARKS — The first record of this species from the New Caledonia region. *Mitrella maestratii* differs from *Mitrella longissima* in the presence of extended denticles in the aperture, its multispiral protoconch and colour pattern. It is closest to *M. brunneolineata*, but differs in the larger size, the number of basal cords, the more bulbous whorls and the straight suture.

Mitrella brunnealineata K. Monsecour & D. Monsecour, 2011

Figures 4E, F, T

Mitrella brunnealinaeta Monsecour K. & Monsecour D., 2011: 30, pl. 1, figs 1-2.

MATERIAL EXAMINED — North of New Caledonia. MUSORSTOM 4: stn DW151, 19°07'S, 163°22'E, 200 m, 1 dd juv. New Caledonia. BIOCAL: stn DW41, 22°45'S, 167°12'E, 380-410 m, 1 dd.

DISTRIBUTION — New Caledonia: Grand Passage and off Grande Terre between Ile des Pins and Grand Récif Sud, 200-380 m. Philippines, alive in 80-124 m.

REMARKS — The first record of this species from the New Caledonia region. *Mitrella brunnealineata* can be distinguished from *M. longissima* and *M. maestratii* by its large, multispiral protoconch and fewer teleoconch whorls, combined with the typical colour pattern.

Mitrella gracilis n. sp.

Figures 4G, H

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26691 and 9 (lv & dd) paratypes MNHN IM-2000-26692-26693, 1 (lv) coll. K. & D. Monsecour (as listed below).

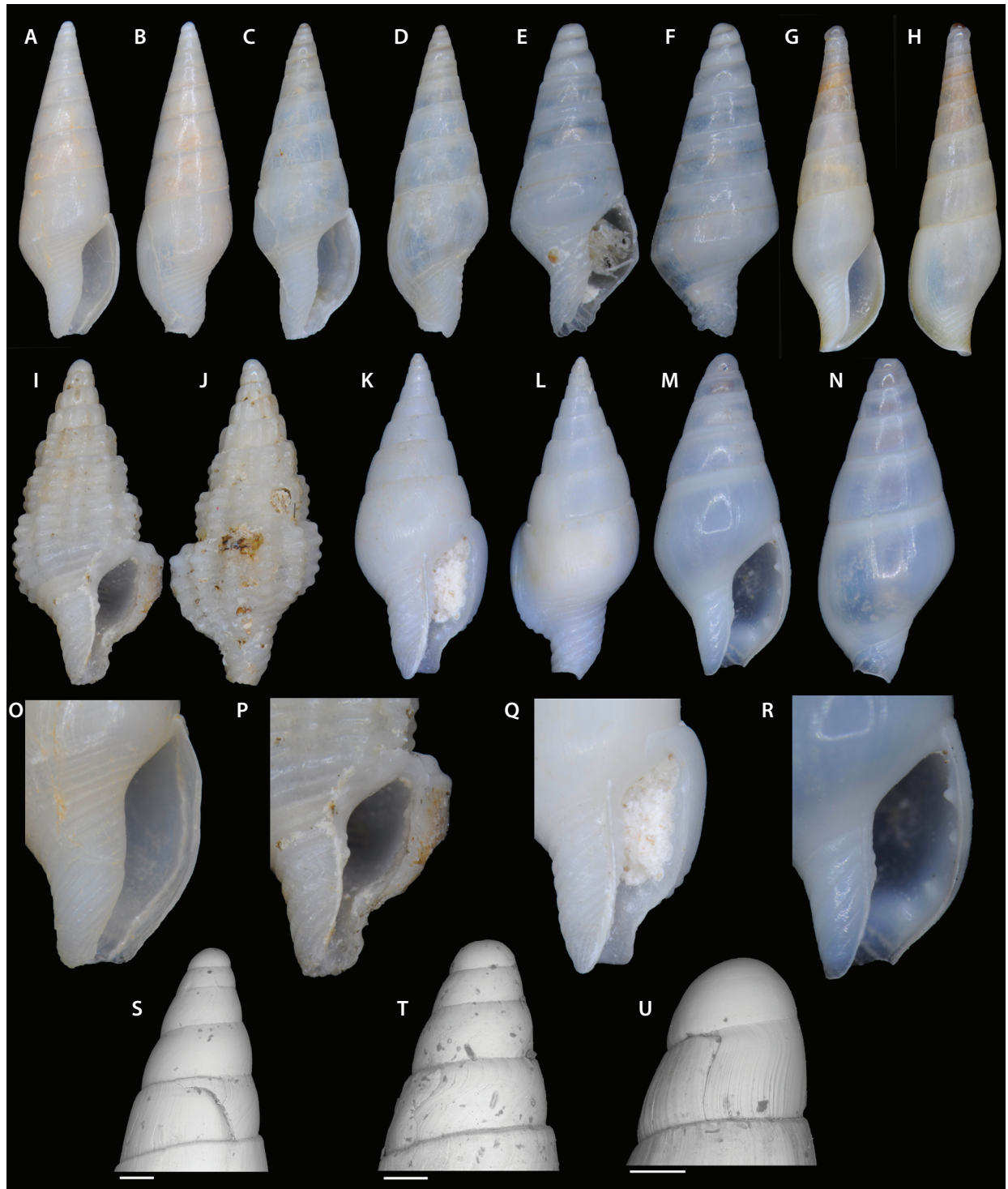
TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°18'S, 168°05'E, 305-330 m [SMIB 8: stn DW 182-184].

MATERIAL EXAMINED — New Caledonia. BIOCAL: stn DW38, 23°00'S, 167°15'E, 360 m, 1 dd juv. Norfolk Ridge. CHALCAL 2: stn DW81, 23°20'S, 168°03'E, 311 m, 1 dd – SMIB 8: stn DW169, 23°37'S, 167°42'E, 447-450 m, 1 dd juv. – Stn DW182-184, 23°18'S, 168°05'E, 305-330 m, 3 lv, holotype MNHN IM-2000-26691 (Figures 4G, H) and 2 lv, 2 dd paratypes MNHN IM-2000-26692, 1 lv juv, 8 dd juv. – Stn DW190, 23°18'S, 168°05'E, 305-310 m, 6 lv, 5 paratypes MNHN IM-2000-26693, 1 coll. K. & D. Monsecour, 2 lv juv, 1 dd juv. New Hebrides Ridge. VOLSMAR: stn DW09, 22°23'S, 171°42'E, 275-300 m, 1 dd juv.

DISTRIBUTION — New Caledonia: between Grande Terre and Ile des Pins, Norfolk Ridge, New Hebrides Ridge, 300-447 m, alive in 305-310 m.

FIGURE 4

Mitrella praetermissa n. sp.; **A**, holotype (9.2 mm) MNHN IM-2000-26809, New Caledonia, NORFOLK 1 stn DW1724, 200-291 m; **B**, dorsal view of holotype. *Mitrella maestratii* K. Monsecour & D. Monsecour, 2011; **C**, shell (7.1 mm), New Caledonia, LAGON stn DW830, 105-110 m; **D**, dorsal view; **O**, aperture detail; **S**, protoconch. *Mitrella brunnealineata* K. Monsecour & D. Monsecour, 2011; **E**, shell (6.3 mm), BIOCAL stn DW41, 380-410 m; **F**, dorsal view; **T**, protoconch. *Mitrella gracilis* n. sp.; **G**, holotype (10.6 mm) MNHN IM-2000-26691, Norfolk Ridge, SMIB 8 stn DW182-184, 305-330 m; **H**, dorsal view of holotype. *Mitrella peregrina* n. sp.; **I**, holotype (7.1 mm) MNHN IM-2000-26694, Loyalty Ridge, MUSORSTOM 6 stn DW453, 240 m; **J**, dorsal view of holotype; **P**, aperture detail. *Mitrella undulata* (Schepman, 1911); **K**, shell (10.4 mm) Coral Sea, EBISCO stn DW2622, 291-323 m; **L**, dorsal view; **Q**, aperture detail; **U**, protoconch of specimen (10.6 mm), MUSORSTOM 5 stn DW263, 150-225 m. *Mitrella neocaledonica* n. sp.; **M**, holotype (5.5 mm) MNHN IM-2000-26725, New Caledonia, BIOCAL stn DW46, 570-610 m; **N**, dorsal view of holotype; **R**, aperture detail.



DESCRIPTION — Shell of medium size for genus, adult size up to 14.8 mm; fusiform, elongate, slender. Suture slightly impressed. Protoconch paucispiral, 1.5 inflated whorls, broader than early teleoconch whorls. Teleoconch of 7-7.5 whorls. Axial sculpture of fine growth lines only. Spiral sculpture very weak, consisting of weak subsutural cord and basal cords ventrally ranging to adapical edge of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip smooth. Columellar callus marked by distinct rim along siphonal canal. Parietal callus slightly thickened. Columella smooth. Siphonal short, open, slightly recurved. Teleoconch whorls off-white in colour. Protoconch semi-translucent, off-white, with brown nucleus. Aperture and columella off-white. Operculum typical of genus, pale brown, semi-translucent, with terminal nucleus. Holotype height 10.6 mm.

REMARKS — *M. gracilis* n. sp. clearly belongs to the *longissima* group, in which it is closest to *M. longissima* and *Mitrella praetermissa* n. sp. These species all have a paucispiral protoconch, but the protoconch of *M. gracilis* is much more swollen. Other differences include the larger size, the presence of a subsutural cord and the straighter teleoconch whorl profile in *M. gracilis*.

ETYMOLOGY — Latin adjective *gracilis*, slender.

Mitrella peregrina n. sp.

Figures 4I, J, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26694 and 7 (dd) paratypes MNHN IM-2000-26695-26698, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Loyalty Ridge, off Lifou, 21°00'S, 167°27'E, 240 m [MUSORSTOM 6: stn DW453].

MATERIAL EXAMINED — Loyalty Ridge. LIFOU 2000: stn DW1649, 20°54'S, 167°01'E, 150-200 m, 2 dd, 1 dd juv, 2 paratypes MNHN IM-2000-26695, 1 coll. K. & D. Monsecour. – MUSORSTOM 6: stn DW442, 20°54'S, 167°17'E, 200 m, 1 dd, 1 dd juv, paratypes MNHN IM-2000-26696. – Stn DW453, 21°00'S, 167°27'E, 250 m, 1 dd, paratype MNHN IM-2000-26697. – Stn DW456, 21°01'S, 167°26'E, 240 m, 1 dd, holotype MNHN IM-2000-26694 (Figures 4I, J, P). – Stn DW462, 21°05'S, 167°27'E, 200 m, 1 dd, 1 dd juv, paratypes MNHN IM-2000-26698.

DISTRIBUTION — New Caledonia: Loyalty Ridge, 200-250 m.

DESCRIPTION — Shell rather small for genus, adult size up to 8.1 mm; fusiform, elongate. Suture slightly incised, whorls strongly shouldered. Protoconch paucispiral, 1.6-1.75 smooth whorls. Teleoconch of six whorls. Axial sculpture of nine to ten strong ribs on all whorls. Spiral sculpture absent on uppermost three whorls, four to five weak cords appearing subsequently, becoming stronger towards final whorl, which bears six to seven strong cords. Rounded knobs forming at intersections of spiral and axial sculpture on penultimate and final whorls, producing reticulate appearance. Basal cords immediately below spiral sculpture. Outer lip thickened, bearing continuation of spiral sculpture. Inner lip denticulate, with six weak denticles. Columellar callus thickened. Parietal callus thickened. Columella with two to three adapical knobs. Siphonal canal short, open, straight. Teleoconch whorls off-white to beige in colour. Protoconch off-white. Aperture and columella off-white. Holotype height 7.1 mm.

REMARKS — This species is most similar to *M. undulata*, but clearly differs by its more shouldered whorls, clear axial sculpture on all whorls, stronger spiral sculpture, fewer teleoconch whorls, smaller adult size, and the lack of colour pattern.

ETYMOLOGY — Latin adjective *peregrinus*, foreign, strange, in reference to the fact that, at first sight, this species does not seem to belong to Columbellidae.

Mitrella undulata (Schepman, 1911)

Figures 4 K, L, Q, U

Columbella (Atilia) undulata Schepman, 1911: 335-336, pl. 20, fig. 11.

Mitrella undulata – K. Monsecour & D. Monsecour 2007: 175, figs 20-21.

MATERIAL EXAMINED — Coral Sea. CHALCAL 1: stn DC63, 22°11'S, 159°15'E, 305 m, 1 dd, 1 dd juv. – MUSORSTOM 5: stn DW255, 25°15'S, 159°55'E, 280-295 m, 1 dd. – Stn DW263, 25°21'S, 159°46'E, 150-250 m, 19 dd (1 coll. K. & D. Monsecour), 4 dd juv. – Stn DW265, 25°21'S, 159°45'E, 190-260 m, 1 dd. – Stn DW270, 24°49'S, 159°34'E, 223 m, 1 dd. – Stn DW274, 24°45'S, 159°41'E, 285 m, 21 dd, 5 dd juv. – Stn DW277, 24°11'S, 159°35'E, 270 m, 5 dd, 4 dd juv. – Stn DW298, 22°44'S, 159°22'E, 320 m, 1 dd, 3 dd juv. – Stn DW299, 22°48'S, 159°24'E, 360-390 m, 2 dd. – Stn DW300, 22°48'S, 159°24'E, 450 m, 1 dd juv. – Stn DW302, 22°10'S, 159°23'E, 345-360 m, 1 dd juv. – Stn DW303, 22°12'S, 159°23'E, 332 m, 2 dd juv. – Stn DW304, 22°10'S, 159°25'E, 385-420 m, 2 dd, 1 dd juv. – EBISCO: stn CP2542, 22°15'S, 159°25'E, 335-338 m, 1 dd. – Stn DW2512, 24°07'S, 159°38'E, 267 m, 1 dd. – Stn DW2523, 22°45'S, 159°22'E, 325-400 m, 1 dd juv. – Stn DW2622, 20°04'S, 160°21'E, 291-323 m, 1 dd. – Stn DW2632, 21°05'S, 160°45'E, 297-378 m, 2 dd juv. – Stn DW2636, 21°04'S, 160°45'E, 254-271 m, 2 dd. **North of New Caledonia.** CONCALIS: stn DW2972, 18°15'S, 163°06'E, 260-284 m, 1 dd. – Stn DW2999, 18°31'S, 163°06'E, 250-270 m, 2 dd. – MUSORSTOM 4: stn CC175, 18°59'S, 163°17'E, 370 m, 1 dd juv. – PALEOSURPRISE: stn DW1391, 18°30'S, 163°03'E, 365 m, 1 dd. **New Caledonia.** SMIB 2: stn DW01, 22°53'S, 167°13'E, 438-444 m, 1 dd juv.

DISTRIBUTION — New Caledonia: Coral Sea, Grand Passage, and between Grande Terre and Ile des Pins, 223-450 m. Philippines and Indonesia.

REMARKS — The first record of this species from the New Caledonia region. The protoconch, however, is paucispiral and suggests poor larval dispersal capabilities.

Mitrella neocaledonica n. sp.

Figures 4M, N, R

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26725 and 15 (lv) paratypes MNHN IM-2000-26726, 2 (lv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, south of Ile des Pins, 22°53'S, 167°17'E, 570-610 m [BIOCAL: stn DW46].

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn DE705, 21°02'S, 168°38'E, 350-400 m, 1 lv, 15 lv juv. – Stn DW687, 20°35'S, 165°07'E, 408-440 m, 6 dd, 16 dd juv. – Stn DW688, 10°33'S, 165°00'E, 270-282 m, 1 dd. – Stn DW706, 21°42'S, 166°34'E, 247-252 m, 1 dd. – BATHUS 2: stn DW719, 22°48'S, 167°15'E, 444-445 m, 2 lv, 2 dd. – Stn DW720, 22°52'S, 167°16'E, 530-541 m, 7 lv, 50 dd, 5 lv juv, 28 dd juv. – Stn DW721, 22°54'S, 167°17'E, 525-547 m, 91 dd, 45 dd juv. – BATHUS 3: stn DW824, 23°19'S, 168°00'E, 601-608 m, 4 dd juv. – BERYX 11: stn DW35, 23°33'S, 167°16'E, 550-570 m, 1 dd, 1 dd juv. – BIOCAL: stn DW33, 23°11'S, 167°10'E, 675-680 m, 1 dd. – Stn DW38, 23°00'S, 167°15'E, 360 m, 1 dd, 1 dd juv. – Stn DW44, 22°47'S, 167°15'E, 440-450 m, 26 lv, 17 lv juv, 60 dd, 26 dd juv. – Stn DW46, 22°53'S, 167°17'E, 570-610 m, 33 lv, holotype MNHN IM-2000-26725 (Figures 4M, N, R) and 15 paratypes MNHN IM-2000-26726, 2 coll. K. & D. Monsecour, 33 lv juv, 446 dd, 152 dd juv. – Stn DW48, 23°00'S, 167°29'E, 775 m, 9 dd, 1 dd juv. – Stn DW51, 23°05'S, 167°45'E, 680-700 m, 1 dd. – Stn DW65, 24°48'S, 168°09'E, 245-275 m, 1 dd. – Stn DW77, 22°16'S, 167°15'E, 440 m, 1 lv, 1 lv juv, 7 dd. – NORFOLK 1: stn DW1733, 22°56'S, 167°15'E, 427-433 m, 1 lv, 1 dd. – NORFOLK 2: stn DW2144, 23°09'S, 167°27'E, 1004-1009 m, 52 dd, 3 dd juv. – SMIB 3: stn DW21, 22°59'S, 167°19'E, 525 m, 1 lv. – Stn DW22, 23°03'S, 167°19'E, 503 m, 2 dd, 6 dd juv. – SMIB 8: stn DW146-147, 24°55'S, 168°22'E, 508-532 m, 1 dd.

DISTRIBUTION — New Caledonia: east coast, off Ile des Pins and Norfolk Ridge, 252-1004 m, alive in 400-570 m.

DESCRIPTION — Shell small for genus, adult size up to 7.5 mm; fusiform, slightly bulbous, elongate. Suture straight. Protoconch paucispiral, 1.5-1.75 smooth whorls. Teleoconch of 3.75-4.25 whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with four to five strong, equally spaced denticles. Columellar callus thickened. Parietal callus absent or very weak. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour, semi-translucent. Protoconch off-white, semi-translucent. Aperture and columella off-white. Operculum typical of the genus, semi-translucent, beige. Holotype height 5.5 mm.

REMARKS — *Mitrella neocaledonica* n. sp. is most similar to *M. philia* (Duclos, 1846), a species also found in New Caledonia typically at depths of 2-80 m. *Mitrella philia* is easily distinguished by its more shouldered shell, incised suture, much more pronounced basal cords and columella with a distinct rim with strong denticles.

ETYMOLOGY — Latin adjective formed from the type locality, New Caledonia.

***Mitrella minisipho* n. sp.**

Figures 5A, B

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26727 and 2 (dd) paratypes MNHN IM-2000-26728, 1 (dd) coll. K. & D. Monsecour (as listed below).

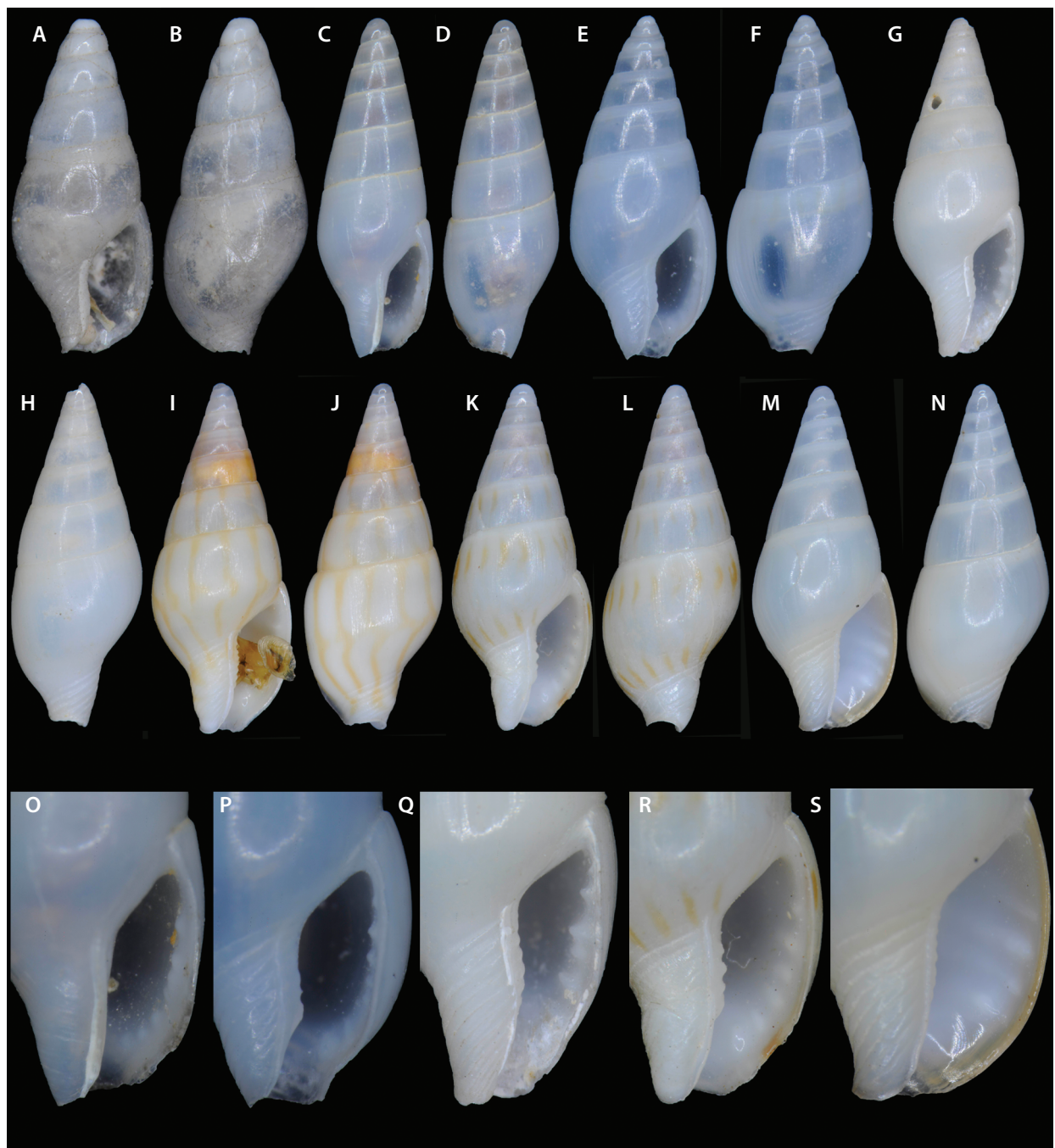
TYPE LOCALITY — New Caledonia, between Ile des Pins and Grand Récif Sud, 23°00'S, 167°15'E, 360 m [BIOCAL: stn DW38].

MATERIAL EXAMINED — Coral Sea. EBISCO: stn DW2629, 21°06'S, 160°46'E, 569-583 m, 7 dd, 1 dd juv. New Caledonia. BIOCAL: stn DW38, 23°00'S, 167°15'E, 360 m, 4 dd, holotype MNHN IM-2000-26727 (Figures 5A, B) and 2 paratypes MNHN IM-2000-26728, 1 coll. K. & D. Monsecour.

DISTRIBUTION — New Caledonia: Coral Sea, and south of Ile des Pins; shells in 360-569 m.

FIGURE 5

Mitrella minisipho n. sp.; **A**, holotype (4.2 mm) MNHN IM-2000-26727, New Caledonia, BIOCAL stn DW38, 360 m; **B**, dorsal view of holotype. *Mitrella aesopiiformis* n. sp.; **C**, holotype (7.1 mm) MNHN IM-2000-26729, New Caledonia, BIOCAL stn CP75, 825-860 m; **D**, dorsal view of holotype; **O**, aperture detail. *Mitrella vaubani* n. sp.; **E**, holotype (4.5 mm) MNHN IM-2000-26731, New Caledonia, MUSORSTOM 4 stn DW149, 165 m; **F**, dorsal view of holotype; **P**, aperture detail. *Mitrella arcta* n. sp.; **G**, holotype (10.2 mm) MNHN IM-2000-26738, Loyalty Ridge, MUSORSTOM 6 stn DW457, 353 m; **H**, dorsal view of holotype, **Q**, aperture detail. *Mitrella angustalineata* n. sp.; **I**, holotype (11.0 mm) MNHN IM-2000-26733, New Caledonia, BATHUS 2 stn DW723, 430-433m; **J**, dorsal view of holotype; **K**, paratype (9.6 mm) MNHN IM-2000-26736, Coral Sea, MUSORSTOM 5 stn DC361, 400 m; **L**, dorsal view of paratype; **R**, aperture detail. *Mitrella nix* n. sp.; **M**, holotype (9.2 mm) MNHN IM-2000-26740, Norfolk Ridge, BIOCAL stn DW33, 675-680 m; **N**, dorsal view of holotype; **S**, aperture detail.



DESCRIPTION — Shell small for genus, adult size up to 4.8 mm; fusiform, elongate. Suture straight. Protoconch paucispiral, 1.25-1.5 smooth whorls. Teleoconch of 4-4.5 bulbous whorls. Axial sculpture of very fine axial lines. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip thickened, with small rim, smooth, bearing only continuation of basal cords. Inner lip with thickened rim along edge, connecting and almost completely obscuring denticles. Columellar callus thickened. Parietal callus absent or very weak. Columella smooth. Siphonal canal very short, open, straight. Teleoconch whorls off-white in colour, semi-translucent. Protoconch off-white, thicker than teleoconch whorls. Aperture and columella off-white. Holotype height 4.2 mm.

REMARKS — *Mitrella minisipho* n. sp. stands apart from all known *Mitrella* species in the thickened rim of the inner lip.

ETYMOLOGY — Latin prefix *mini*, small, and generic name *Sipho*, with reference to the overall resemblance to a minute buccinid.

Mitrella aesopiformis n. sp.

Figures 5C, D, O

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26729 and 15 (lv) paratypes MNHN IM-2000-26730, 2 (lv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, north of Ile des Pins, 22°20'S, 167°23'E, 825-860 m [BIOCAL: stn CP75].

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn CP651, 21°42'S, 166°40'E, 1080-1180 m, 11 dd, 8 dd juv. – BIOCAL: stn CP75, 22°20'S, 167°23'E, 825-860 m, 42 lv, holotype MNHN IM-2000-26729 (Figures 5C, D, O) and 15 paratypes MNHN IM-2000-26730, 2 coll. K. & D. Monsecour, 4 lv juv, 89 dd, 19 dd juv. – Stn DW46, 22°53'S, 167°17'E, 570-610 m, 1 dd juv. – Stn DW70, 23°26'S, 167°53'E, 965 m, 1 dd juv. – Stn DW80, 20°32'S, 16°49'E, 900-980 m, 1 dd, 1 dd juv. – Stn DW106, 21°36'S, 166°29'E, 625-650 m, 1 dd, 1 dd juv. – Stn KG73, 22°13'S, 167°29'E, 1306 m, 1 dd. – BIOGEOCAL: stn CP232, 21°34'S, 166°27'E, 760-790 m, 4 dd, 5 dd juv. – SMIB 3: stn DW22, 23°03'S, 167°19'E, 503 m, 2 dd juv. **Coral Sea.** EBISCO: stn CP2647, 21°32'S, 162°27'E, 747 m, 7 dd, 3 dd juv. – Stn CP2648, 21°32'S, 162°30'E, 458-750 m, 1 dd.

DISTRIBUTION — New Caledonia: Coral Sea, east coast of Grande Terre, Ile des Pins and Norfolk Ridge, 503-1306 m.

DESCRIPTION — Shell small for genus, adult size up to 7.5 mm; fusiform, elongate. Suture straight. Protoconch paucispiral, 1.5-1.75 smooth whorls. Teleoconch of 5.5-5.75 whorls. Axial and spiral sculpture absent. Outer lip slightly thickened with weak rim, smooth. Inner lip denticulate, with six strong, equally spaced denticles. Columellar callus thickened, marked by distinct rim along siphonal canal. Parietal callus absent or very weak. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour, semi-translucent. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 7.1 mm.

REMARKS — *Mitrella aesopiformis* n. sp. stands apart from all known *Mitrella* in the lack of basal cords.

ETYMOLOGY — Latin adjective formed in reference to the shape of the shell, which is reminiscent of the genus *Aesopus* Gould, 1860, despite that the species clearly belongs to the genus *Mitrella*.

Mitrella vaubani n. sp.

Figures 5E, F, P

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26731 and 15 (lv) paratypes MNHN IM-2000-26732, 2 (lv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Grand Passage, 19°08'S, 163°23'E, 165 m [MUSORSTOM 4: stn DW149].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW903, 19°00'S, 163°14'E, 386-400 m, 10 dd, 1 dd juv. – CONCALIS: stn DW2952, 19°07'S, 163°20'E, 171-193 m, 1 dd. – Stn DW3023, 19°00'S, 163°26'E, 285-300 m, 1 dd. – MUSORSTOM 4: stn CP179, 18°57'S, 163°14'E, 480 m, 2 dd. – Stn DW149, 19°08'S, 163°23'E, 165 m, 110 lv, holotype MNHN IM-2000-26731 (Figures 5E, F, P) and 15 paratypes MNHN IM-2000-26732, 2 coll. K. & D. Monsecour, 5 lv juv, 53 dd, 5 dd juv. – Stn DW151, 19°07'S, 163°22'E, 200 m, 37 lv, 68 dd, 13 dd juv. – Stn DW150, 19°07'S, 163°22'E, 110 m, 44 lv, 13 lv juv, 80 dd, 4 dd juv. **New Caledonia.** VAUBAN 1978-1979: stn DR40, 22°30'S, 166°24'E, 250-350 m, 2 dd juv.

DISTRIBUTION — New Caledonia: Grand Passage and west coast off Noumea, 110-480 m, alive in 110-200 m.

DESCRIPTION — Shell small for genus, adult size up to 5 mm; fusiform, elongate. Suture straight. Protoconch paucispiral, 1–1.25 smooth whorls. Teleoconch of 6–6.5 whorls. Axial sculpture nearly absent, first whorl with minute axial riblets. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip thickened with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with seven weak, equally spaced denticles; second and third adapical denticles strongest, and sometimes only ones visible. Columellar callus thickened. Parietal callus very weak. Columella with impressions of basal cords through callus. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, semi-translucent, with white subsutural band. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 4.5 mm.

REMARKS — The unique shape of this species does not allow confusion with any known species.

ETYMOLOGY — A noun in genitive, after the research vessel *Vauban*, from which much of the examined material, including the type material, was collected in the 1980s.

Mitrella arcta n. sp.

Figures 5G, H, Q

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26738 and 7 (dd) paratypes MNHN IM-2000-26739, 1 (dd) paratype coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Loyalty Ridge, off Lifou, 21°00'S, 167°29'E, 353 m [MUSORSTOM 6: stn DW457].

MATERIAL EXAMINED — Coral Sea. EBISCO: stn DW2618, 20°06'S, 160°23'E, 280-304 m, 1 dd. **New Caledonia.** BATHUS 1: stn DW688, 20°33'S, 165°00'E, 270-282 m, 8 dd, paratypes MNHN IM-2000-26739, 1 paratype coll. K. & D. Monsecour, 8 dd juv. – BATHUS 4: stn DW887, 21°07'S, 164°28'E, 320-344 m, 1 dd, 2 dd juv. – MUSORSTOM 4: stn CC246, 22°08'S, 167°11'E, 410-420 m, 3 dd juv. – NORFOLK 1: stn DW1733, 22°56'S, 167°15'E, 427-433 m, 1 dd. **Loyalty Ridge.** MUSORSTOM 6: stn DW417, 20°42'S, 167°04'E, 283 m, 1 dd. – Stn DW457, 21°00'S, 167°29'E, 353 m, 1 dd, holotype MNHN IM-2000-26738 (Figures 5G, H, Q).

DISTRIBUTION — New Caledonia: off east and west coasts of Grande Terre, Ile des Pins, and off Lifou, 282-427 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 12.3 mm; fusiform, elongate. Suture straight. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of 5.5-6 whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with eight denticles, diminishing in strength abapically, with second and third denticles closer than the other denticles. Columellar callus thickened. Parietal callus very weak. Columella with seven denticles. Siphonal canal long, open, straight. Teleoconch whorls off-white in colour, occasionally with pattern of pale brown axial lines on lower whorls. Protoconch off-white. Aperture and columella off-white. Holotype height 10.2 mm.

REMARKS — This species is similar to *Mitrella angustalineata* n. sp., but differs in its smaller teleoconch, number and position of denticles in the inner lip, longer siphonal canal and narrower, more elongate aperture.

ETYMOLOGY — Latin adjective *arctus*, narrow, in reference to the narrow, elongate aperture.

Mitrella angustalineata n. sp.

Figures 5I-L, R

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26733 and 6 (lv & dd) paratypes MNHN IM-2000-26734-26737, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, between Ile des Pins and Grand Récif Sud, 22°50'S, 167°27'E, 430-433 m [BATHUS 2: stn DW723].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW902, 19°01'S, 163°15'E, 341-351 m, 3 dd, 3 dd juv. — Stn DW923, 18°52'S, 163°24'E, 470-502 m, 1 lv juv. — Stn DW927, 18°56'S, 163°22'E, 444-452 m, 2 lv, 1 lv juv, 2 dd, paratypes MNHN IM-2000-26734. — Stn DW942, 19°04'S, 163°27'E, 264-270 m, 1 dd juv. — PALEO-SURPRISE: stn DW1391, 18°30'S, 163°03'E, 365 m, 5 dd. — CONCALIS: stn DW2946, 19°02'S, 163°27'E, 276-277 m, 2 dd, 4 dd juv. — Stn DW2949, 19°00'S, 163°28'E, 261-272 m, 1 dd juv. — Stn DW2967, 18°18'S, 162°58'E, 340-345 m, 1 dd. — Stn DW2974, 18°15'S, 163°06'E, 283-326 m, 1 dd. — Stn DW2983, 18°01'S, 163°02'E, 367-430 m, 1 dd, 1 dd juv. — Stn DW2998, 18°32'S, 163°05'E, 390 m, 1 dd juv. **New Caledonia.** BATHUS 1: stn CP698, 20°34'S, 164°57'E, 491-533 m, 1 lv juv, 1 dd juv. — Stn DW654, 21°17'S, 165°57'E, 237-298 m, 1 dd juv. — Stn DW683, 20°35'S, 165°07'E, 380-400 m, 9 dd juv. — BATHUS 2: stn CP760, 22°19'S, 166°11'E, 455 m, 3 dd juv. — Stn DW717, 22°44'S, 167°17'E, 350-393 m, 1 dd juv. — Stn DW720, 22°52'S, 167°16'E, 530-541 m, 1 dd juv. — Stn DW723, 22°50'S, 167°27'E, 430-433 m, 1 lv, holotype MNHN IM-2000-26733 (Figures 5I, J). — Stn DW724, 22°48'S, 167°26'E, 344-358 m, 18 dd, 2 paratypes coll. K. & D. Monsecour, 2 dd juv. — Stn DW739, 22°35'S, 166°27'E, 465-525 m, 2 dd juv. — BATHUS 3: stn CH802, 23°41'S, 168°00'E, 237-550 m, 1 dd juv. — Stn DW827, 23°22'S, 168°01'E, 381-469 m, 1 dd, 1 dd juv. — Stn DW829, 23°21'S, 168°02'E, 386-390 m, 1 dd, 2 dd juv. — Stn DW830, 23°20'S, 168°01'E, 361-365 m, 1 lv. — BIOCAL: stn DW41, 22°45'S, 167°12'E, 380-410 m, 1 dd. — Stn DW44, 22°47'S, 167°15'E, 440-450 m, 3 dd juv. — MUSORSTOM 4: stn CC246, 22°08'S, 167°11'E, 410-420 m, 1 dd. — Stn DW210, 22°44'S, 167°09'E, 340-345 m, 1 dd, 1 dd juv. — Stn DW222, 22°58'S, 168°33'E, 410-440 m, 3 dd juv. — Stn DW226, 22°47'S, 167°22'E, 395 m, 1 dd, 2 dd juv. — NORFOLK 1: stn DW1739, 22°51'S, 167°12'E, 404-448 m, 1 dd juv. — SMIB 3: stn DW21, 22°59'S, 167°19'E, 525 m, 1 dd juv. — SMIB 8: stn DW189, 23°18'S, 168°06'E, 400-402 m, 1 dd, 1 dd juv. — Stn DW197-199, 22°51'S-22°52'S, 167°12'E-168°13'E, 408-436 m, 2 lv juv, 2 dd. — Stn DW182-184, 23°18'S, 168°05'E, 305-330 m, 2 lv, paratypes MNHN IM-2000-26735, 1 lv juv, 4 dd, 3 dd juv. — Stn DW190, 23°18'S, 168°05'E, 305-310 m, 2 lv, 2 dd, 3 dd juv. — TERRASSES: stn DW3063, 23°23'S, 168°00'E, 430-480 m, 1 dd. — Stn DW3086, 22°15'S, 167°13'E, 400 m, 2 dd juv. — Stn DW3121, 22°45'S, 167°13'E, 380-400 m, 2 dd, 1 dd juv. — VAUBAN 1978-1979: stn DC3, 22°14'S, 167°14'E, 390 m, 2 dd — Stn DR16, 22°46'S, 167°12'E, 390-400 m, 1 dd. **Loyalty Ridge.** MUSORSTOM 6: stn DW392, 20°47'S, 167°05'E, 340 m, 1 dd juv. — Stn DW449, 20°54'S, 167°18'E, 300 m, 1 dd, 3 dd juv. **Coral Sea.** MUSORSTOM 5: stn DC361, 19°52'S, 158°38'E, 400 m, 1 dd, paratype MNHN IM-2000-26736 (Figures 5K, L, R). — Stn DC362, 19°53'S, 158°40'E, 410 m, 3 dd. — EBISCO: stn DW2607, 19°33'S, 158°40'E, 400-413 m, 1 lv, paratype MNHN IM-2000-26737.

DISTRIBUTION — One of the most widely distributed species within New Caledonia: Coral Sea, Grand Passage, south of Grande Terre, and Loyalty Ridge, 270-525 m, alive in 310-470 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 13 mm; fusiform, elongate. Suture straight. Protoconch paucispiral, ~1.75 smooth whorls. Teleoconch of 6.25-6.5 whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with five equally spaced denticles of roughly equal size. Columellar callus thickened, with slightly raised rim. Parietal callus very weak. Columella with seven denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, with yellowish-brown sinuous axial lines on later whorls, occasionally interrupted near shoulder of final whorl. Upper whorls off-white. Some shells entirely white. Protoconch off-white. Aperture and columella off-white. Operculum typical of genus, light brown, semi-translucent, with terminal nucleus. Holotype height 11.0 mm.

REMARKS — This deeper-water species is most similar to *Mitrella arcta* n. sp. and *Mitrella nix* n. sp., see below for comparisons.

ETYMOLOGY — Latin adjectives *angustus*, narrow, and *lineatus*, lined, in reference to the fine yellowish-brown axial lines comprising the typical colour pattern.

***Mitrella nix* n. sp.**

Figures 5M, N, S

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26740 and 8 (dd) paratypes MNHN IM-2000-26741, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°11'S, 167°10'E, 675-680 m [BIOCAL: stn DW33].

MATERIAL EXAMINED — North of New Caledonia. CONCALIS: stn CP3027, 20°17'S, 163°50'E, 600-1100 m, 1 dd juv. – Stn DW2982, 18°02'S, 163°04'E, 320-337 m, 3 dd. **New Caledonia.** LAGON: stn DW444, 18°15'S, 162°59'E, 300-350 m, 5 dd, 1 paratype coll. K. & D. Monsecour. – BATHUS 1: stn CP711, 21°43'S, 166°36'E, 315-327 m, 1 dd juv. – BATHUS 2: stn DW729, 22°52'S, 167°12'E, 400 m, 1 dd, 1 dd juv. – BIOCAL: stn DW33, 23°11'S, 167°10'E, 675-680 m, 9 dd, holotype MNHN IM-2000-26740 (Figures 5, M, N, S) and 8 paratypes MNHN IM-2000-26741, 1 dd juv. – BIOGEOCAL: stn DW253, 21°32'S, 166°29'E, 310-315 m, 1 dd, 1 dd juv. – CHALCAL 2: stn CP18, 24°47'S, 168°09'E, 274 m, 1 dd juv. – Stn DW81, 23°20'S, 168°03'E, 311 m, 1 dd. – MUSORSTOM 4: stn DW221, 22°59'S, 167°37'E, 535-560 m, 4 dd, 4 dd juv. **Loyalty Ridge.** MUSORSTOM 6: stn DW473, 21°09'S, 167°55'E, 236 m, 1 dd.

DISTRIBUTION — New Caledonia: Grand Passage, off east and west coasts of Grande Terre, Ile des Pins, Norfolk Ridge and Loyalty Ridge, 236-675 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 9.6 mm; fusiform, elongate. Suture straight. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of five whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with five to six more or less equally spaced denticles of equal size; abapicalmost denticle smaller. Columellar callus thickened. Parietal callus weak. Columella nearly smooth, with row of eight very small, partially merged denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, semi-translucent, pale yellowish-brown near outer lip. All teleoconch whorls with bright white subsutural band. Protoconch off-white. Aperture and columella off-white. Holotype height 9.2 mm.

REMARKS — This species is similar to *M. angustalineata* n. sp. and *M. arcta* n. sp., but differs in the position and number of columellar denticles, fewer teleoconch whorls, broader shell, and subsutural white band. Additional differentiating characteristics in comparison to *M. arcta* n. sp. include the less elongate aperture and shorter siphonal canal.

ETYMOLOGY — Latin *nix*, snow, in reference to the colour of the shell; used as a noun in apposition.

Mitrella deforgesii n. sp.

Figures 6A, B, M

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26742 and 10 (dd) paratypes MNHN IM-2000-26743, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, south of Ile des Pins, 22°59'S-23°00'S, 168°21'E-168°22'E, 500-558 m [SMIB 8: stn DW193-196].

MATERIAL EXAMINED — New Caledonia. BATHUS 2: stn DW730, 23°03'S, 166°58'E, 397-400 m, 3 dd. – SMIB 8: stn DW193-196, 22°59'S-23°00'S, 168°21'E-168°22'E, 500-558 m, 77 dd, 35 dd juv, holotype MNHN IM-2000-26742 (Figures 6A, B, M) and 10 paratypes MNHN IM-2000-26743, 2 coll. K. & D. Monsecour. Loyalty Ridge. MUSORSTOM 6: stn DW459, 21°01'S, 167°31'E, 425 m, 1 dd.

DISTRIBUTION — New Caledonia: south of Ile des Pins and Loyalty Ridge off Lifou, 400-500 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 9 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of five whorls. Axial sculpture present only on two first whorls, consisting of very weak, low axial riblets. Subsequent whorls smooth. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with seven equally spaced denticles of unequal size. Columellar callus thickened. Parietal callus weak, almost obsolete. Columella with row of four, partially merged denticles. Siphonal canal short, open, straight. Teleoconch whorls semi-translucent, pale beige in colour. Protoconch semi-translucent, pale beige. Aperture and columella off-white. Holotype height 8.2 mm.

REMARKS — This species is most similar to *Mitrella nix* n. sp., but differs in the thin axial sculpture on the early teleoconch whorls, the more bulbous teleoconch whorls, the less bulbous protoconch, the somewhat smaller and narrower shape and the colour.

ETYMOLOGY — Named after Bertrand Richer de Forges (formerly of ORSTOM and IRD), the indefatigable explorer of New Caledonia and the South Pacific.

Mitrella scapula n. sp.

Figures 6C, D, N

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26744 and 3 (dd) paratypes MNHN IM-2000-26745-26747, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, east coast off Canala, 21°17'S, 165°57'E, 190-207 m [BATHUS 1: stn DW653].

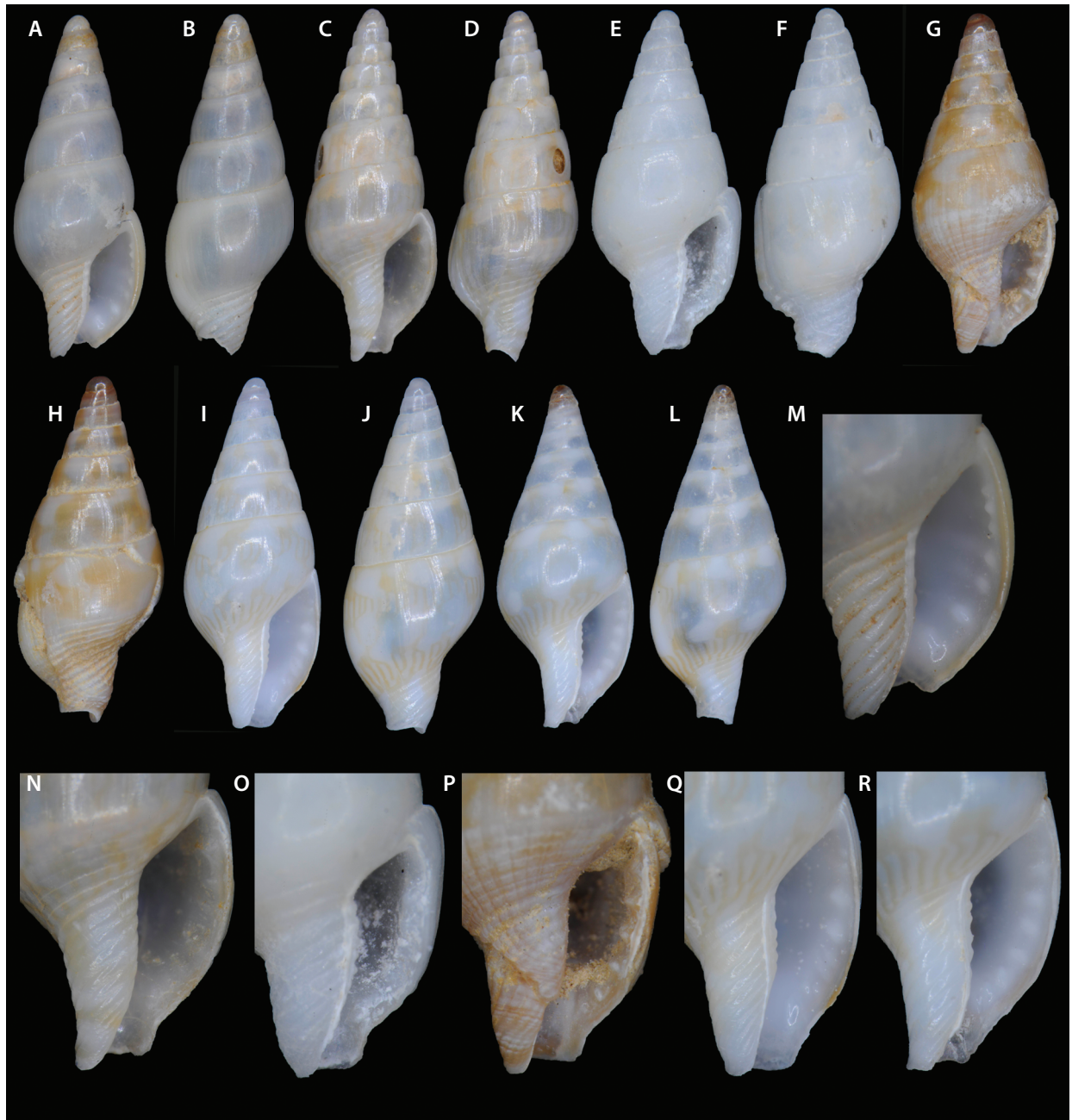


FIGURE 6

Mitrella deforgesii n. sp.; **A**, holotype (8.2 mm) MNHN IM-2000-26742, Norfolk Ridge, SMIB 8 stn DW193-196, 500-558 m; **B**, dorsal view of holotype; **M**, aperture detail. *Mitrella scapula* n. sp.; **C**, holotype (8.7 mm) MNHN IM-2000-26744, New Caledonia, BATHUS 1 stn DW653, 190-207 m; **D**, dorsal view of holotype; **N**, aperture detail. *Mitrella debitusae* n. sp.; **E**, holotype (6.9 mm) MNHN IM-2000-26748, New Caledonia, MUSORSTOM 4 stn DW149, 165 m; **F**, dorsal view of holotype; **O**, aperture detail. *Mitrella fortuita* n. sp.; **G**, holotype (6.7 mm) MNHN IM-2000-26754, New Caledonia, BATHUS 1 stn DW673, 170 m; **H**, dorsal view of holotype; **P**, aperture detail. *Mitrella intermissilineata* n. sp.; **I**, holotype (9.7 mm) MNHN IM-2000-26755, New Caledonia, BATHUS 4 stn DW887, 320-344 m; **J**, dorsal view of holotype; **Q**, aperture detail. *Mitrella prolixa* n. sp.; **K**, holotype (8.9 mm) MNHN IM-2000-26761, New Caledonia, Lifou, LIFOU 2000 stn DW1649, 150-200 m; **L**, dorsal view of holotype; **R**, aperture detail.

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn DW653, 21°17'S, 165°57'E, 190-207 m, 1 dd, holotype MNHN IM-2000-26744 (Figures 6C, D, N). – Stn DW654, 21°17'S, 165°57'E, 237-298 m, 1 dd, paratype MNHN IM-2000-26746. – Stn DE700, 20°57'S, 135°35'E, 160-222 m, 2 dd, paratype MNHN IM-2000-26745, paratype coll. K. & D. Monsecour, 11 dd juv. – Stn DW706, 21°42'S, 166°34'E, 247-252 m, 1 dd, paratype MNHN IM-2000-26747, 3 dd juv.

DISTRIBUTION — New Caledonia: off east coast of Grande Terre, 207-247 m.

DESCRIPTION — Shell of rather small size for genus, adult size up to ~8.7 mm; fusiform, elongate. Suture slightly incised, whorls strongly shouldered. Protoconch paucispiral, ~1.75 smooth whorls. Teleoconch of *ca.* 6.5 whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to mid-parietal height, diminishing in strength adapically. Outer lip thickened, with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with six equally spaced denticles, diminishing in strength abapically. Columellar callus and parietal callus almost obsolete. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour with pale brown flammules. Protoconch off-white. Aperture and columella off-white. Holotype height 8.7 mm.

REMARKS — The species stands apart from all congeners in the very strongly shouldered whorls.

ETYMOLOGY — Latin *scapula*, shoulder, in reference to the strongly shouldered whorls; used as a noun in apposition.

Mitrella debitusae n. sp.

Figures 6E, F, O

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26748 and 7 (dd) paratypes MNHN IM-2000-26753, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 19°08'S, 163°23'E, 165 m [MUSORSTOM 4: stn DW149].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW923, 18°52'S, 163°24'E, 470-502 m, 1 dd, paratype MNHN IM-2000-26749. – CONCALIS: stn DW2941, 19°03'S, 163°27'E, 271-272 m, 1 dd, paratype MNHN IM-2000-26750. – MUSORSTOM 4: stn DW149, 19°08'S, 163°23'E, 165 m, 3 dd, holotype MNHN IM-2000-26748 (Figures 6E, F, O) and 1 paratype MNHN IM-2000-26751, 1 coll. K. & D. Monsecour. Coral Sea. EBISCO: stn DW2585, 19°35'S, 158°43'E, 543-544 m, 1 dd juv, paratype MNHN IM-2000-26752. – Stn DW2588, 19°46'S, 158°26'E, 175-200 m, 2 dd, 1 dd juv, all paratypes MNHN IM-2000-26753.

DISTRIBUTION — New Caledonia: Coral Sea and Grand Passage, 165-543 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 7.6 mm; fusiform, elongate. Suture slightly impressed, whorls shouldered. Protoconch paucispiral, *ca.* two smooth whorls. Teleoconch of *ca.* five whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella; two adapicalmost cords markedly weaker. Outer lip thickened, with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with six equally spaced denticles, diminishing in strength abapically. Columellar callus present, thickened. Parietal callus thin. Columella with five to six denticles. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white. Protoconch off-white. Aperture and columella off-white. Holotype height 6.9 mm.

REMARKS — The species is most similar to *Mitrella scapula* n. sp., but differs in the denticulate columella, the smaller teleoconch and less bulbous protoconch.

ETYMOLOGY — Named after Cécile Debitus, formerly of IRD Noumea, where she led on the Norfolk Ridge a series of cruises for the SMIB programme (“Substances Marines d’Intérêt Biologique”).

***Mitrella fortuita* n. sp.**

Figures 6G, H, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26754.

TYPE LOCALITY — New Caledonia, east coast off Hienghène, 20°48’S, 165°19’E, 170 m [BATHUS 1: stn DW673].

MATERIAL EXAMINED — Known only from the holotype.

DISTRIBUTION — New Caledonia, east coast off Hienghène.

DESCRIPTION — Shell of rather small size for genus, adult size of holotype 6.7 mm; fusiform, elongate. Suture slightly incised, whorls shouldered. Protoconch paucispiral, 1.75 smooth whorls. Teleoconch of slightly more than five whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical end of parietal callus. Outer lip thickened, with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with six strong, equally spaced denticles. Columellar callus thin. Parietal callus thin. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls pale brown in colour with randomly placed off-white to beige flecks. Protoconch reddish-orange. Aperture and columella off-white to beige.

REMARKS — The species is similar to *Mitrella scapula* n. sp. and *M. debitusae* n. sp., but differs from *M. scapula* in its fewer teleoconch whorls, broader overall appearance, less shouldered whorls, higher extension of the basal cords, shorter siphonal canal, and colour pattern. It differs from *M. debitusae* in the higher extension of the basal cords, the less shouldered whorls, the broader protoconch, the absence of teeth on the columella, the thinner columellar callus and the colour pattern.

ETYMOLOGY — Latin adjective *fortuitus*, haphazardly, randomly, in reference to the randomly placed off-white to beige flecks that define the colour pattern.

***Mitrella intermissalineata* n. sp.**

Figures 6I, J, Q

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26755 and 6 (dd) paratypes MNHN IM-2000-26756-26760, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 21°07’S, 164°28’E, 320-344 m [BATHUS 4: stn DW887].

MATERIAL EXAMINED — Coral Sea. EBISCO: stn DW2588, 19°46’S, 158°26’E, 175-200 m, 1 dd, paratype MNHN IM-2000-26756. North of New Caledonia. CONCALIS: stn DW2963, 18°22’S, 162°59’E, 220-240 m, 1 dd, paratype MNHN IM-2000-26757. New Caledonia. BATHUS 1: stn DE700, 20°57’S, 165°35’E, 160-222 m, 1 dd, paratype coll. K. & D. Monsecour, 2 dd juv. – Stn DW689, 20°33’S, 165°00’E, 260-265 m, 1 dd, 1 dd juv, paratypes MNHN IM-2000-26758. – BATHUS 4: stn DW887, 21°07’S, 164°28’E, 320-344 m, 1 dd, holotype MNHN IM-2000-26755 (Figures 6I, J, Q). Loyalty Ridge. MUSORSTOM 6: stn DW399, 20°42’S, 167°00’E, 282 m, 1 dd juv, paratype MNHN IM-2000-26759. – Stn DW442, 20°54’S, 167°17’E, 200 m, 1 dd, paratype MNHN IM-2000-26760.

DISTRIBUTION — New Caledonia: Coral Sea, d'Entrecasteaux Reefs, off east and west coasts of Grande Terre, and Loyalty Ridge off Lifou, 200-320 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 10 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of *ca.* 5.75 whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella. Outer lip slightly thickened, with weak rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with nine equally spaced denticles of unequal size. Columellar callus thickened. Parietal callus very weak, almost obsolete. Columella with rim of six partially merged denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, with faint pattern of beige axial lines interrupted by off-white band at mid-whorl. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 9.7 mm.

REMARKS — The species is close to *Mitrella scapula* n. sp. and *M. debitusae* n. sp., but differs in the lack of shouldered whorls, the number of denticles on the inner lip, the less constricted siphonal canal and the colour pattern.

ETYMOLOGY — Latin noun *intermissus*, interruption, and adjective *lineatus*, lined, in reference to the interrupted axial lines that define the colour pattern.

Mitrella prolixa n. sp.

Figures 6K, L, R

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26761 and 3 (dd) paratypes MNHN IM-2000-26762-26763, 1 (dd juv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Loyalty Ridge, 20°54'S, 167°01'E, 150-200 m [LIFOU 2000: stn DW1649].

MATERIAL EXAMINED — North of New Caledonia. MUSORSTOM 4: stn DW184, 19°04'S, 163°27'E, 260 m, 1 dd, paratype MNHN IM-2000-26762. New Caledonia. MUSORSTOM 4: stn DW227, 22°46'S, 167°20'E, 320 m, 2 dd, 1 dd juv, paratypes MNHN IM-2000-26763, 1 coll. K. & D. Monsecour. Loyalty Ridge. LIFOU 2000: stn DW1649, 20°54'S, 167°01'E, 150-200 m, 1 dd, holotype MNHN IM-2000-26761 (Figures 6K, L, R).

DISTRIBUTION — New Caledonia: Grand Passage, south of Ile des Pins, and Loyalty Ridge off Lifou, 200-320 m.

DESCRIPTION — Shell size typical for genus, adult size up to *ca.* 10.5 mm; fusiform, elongate. Suture straight. Protoconch paucispiral, ~1.75 smooth whorls. Teleoconch of *ca.* six whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella. Outer lip thickened, with clear rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with seven equally spaced denticles of equal size. Columellar callus thickened, slightly demarcated. Parietal callus very weak, almost obsolete. Columella with rim of five partially merged denticles. Siphonal canal rather long for genus, open, recurved. Teleoconch whorls off-white in colour, with subsutural band of white and beige blotches. Body whorl with similar band at mid-whorl and with faint pattern of beige axial lines on abapical half of whorl. Protoconch purplish. Aperture and columella off-white. Holotype height 8.9 mm.

REMARKS — The species is similar to *Mitrella intermissilineata* n. sp., but differs in its more elegant, convex shell shape, less bulbous, purplish protoconch, longer, recurved siphonal canal and different colour pattern.

ETYMOLOGY — Latin adjective *prolixus*, lengthy, extended, in reference to the rather long siphonal canal in comparison to other congeners.

Mitrella ebisco n. sp.

Figures 7A, B, M

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26764 and 1 (dd juv) paratype MNHN IM-2000-26765.

TYPE LOCALITY — Coral Sea, Chesterfield-Bellona Plateau, 20°25'S, 158°41'E, 333-386 m [EBISCO: stn DW2564].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — Coral Sea, Chesterfield-Bellona Plateau.

DESCRIPTION — Shell size typical for genus, adult size 8.1 mm; fusiform, elongate. Suture slightly incised, whorls slightly shouldered. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of *ca.* six whorls. Axial sculpture of minute riblets on early whorls, absent on subsequent whorls. Spiral sculpture present only on dorsal aspect of final whorl, consisting of numerous fine spiral incisions ranging from suture to basal cords. Basal cords ventrally ranging to adapical end of columella. Outer lip thickened, with clear rim, smooth, bearing only continuation of basal cords. Inner lip virtually smooth (slightly damaged in holotype). Columellar callus slightly thickened. Parietal callus very weak, almost obsolete. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour, with subsutural whitish band; body whorl with band of white blotches at mid-whorl and with faint pattern of beige axial lines on abapical half of final half whorl. Protoconch semi-translucent, off-white. Aperture and columella off-white. Holotype height 8.1 mm.

REMARKS — The species is similar to *Mitrella intermissalineata* n. sp., but differs in its more elongate shape, less bulbous protoconch, more shouldered whorls, shorter siphonal canal and spiral sculpture on the body whorl.

ETYMOLOGY — Named after the cruise acronym; used a noun in apposition.

Mitrella bellonae n. sp.

Figures 7C, D, N

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26766 and 1 (dd) paratype MNHN IM-2000-26767 (as listed below).

TYPE LOCALITY — Coral Sea, Chesterfield-Bellona Plateau, 20°25'S, 158°41'E, 333-386 m [EBISCO: stn DW2564].

MATERIAL EXAMINED — Coral Sea. EBISCO: stn DW2564, 20°25'S, 158°41'E, 333-386 m, 1 dd, holotype MNHN IM-2000-26766 (Figures 7C, D, N). — Stn DW2570, 20°27'S, 158°45'E, 235-263 m, 1 dd juv, paratype MNHN IM-2000-26767.

DISTRIBUTION — Chesterfield-Bellona Plateau, 263-333 m.

DESCRIPTION — Shell size typical for genus, adult size 8.9 mm; fusiform, elongate. Suture slightly incised, whorls shouldered. Protoconch paucispiral, slightly more than two smooth whorls. Teleoconch of slightly more than five whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella. Outer lip thickened, with clear rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with six strong, equally spaced denticles. Columellar callus thickened. Parietal callus obsolete. Columella with rim of four to five merged denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, subsutural band of alternating white

and beige blotches appearing on third whorl. Body whorl with second similar band at mid-whorl and with beige area just above basal cords. Protoconch off-white. Aperture and columella off-white. Holotype height 8.9 mm.

REMARKS — This species stands apart from the preceding three species in the more shouldered whorls, very short siphonal canal, the sloping body whorl on the columellar side when viewed ventrally and the slightly different colour pattern.

ETYMOLOGY — Named after the type locality on the Bellona Plateau.

Mitrella parvicosta n. sp.

Figures 7E, F, O

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26768 and 12 (lv & dd) paratypes MNHN IM-2000-26769-26772, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 22°52'S, 167°16'E, 530-541 m [BATHUS 2: stn DW720].

MATERIAL EXAMINED — **New Caledonia.** VAUBAN 1978-1979: stn DR15, 22°49'S, 167°12'E, 390-395 m, 1 dd. — Stn DR16, 22°46'S, 167°12'E, 390-400 m, 2 dd. — BIOCAL: stn DW44, 22°47'S, 167°15'E, 440-450 m, 5 lv, paratypes MNHN IM-2000-26769, 15 dd, 2 paratypes coll. K. & D. Monsecour, 7 dd juv. — BATHUS 2: stn DW719, 22°48'S, 167°15'E, 444-445 m, 1 lv, 3 dd, paratypes MNHN IM-2000-26770. — Stn DW720, 22°52'S, 167°16'E, 530-541 m, 1 lv, 1 dd, holotype MNHN IM-2000-26768 (Figures 7E, F, O) and paratype MNHN IM-2000-26771. — Stn DW724, 22°48'S, 167°26'E, 344-358 m, 2 dd. — Stn DW729, 22°52'S, 167°12'E, 400 m, 2 lv, paratypes MNHN IM-2000-26772, 3 lv juv 1 dd. — **NORFOLK 1:** stn DW1733, 22°56'S, 167°15'E, 427-433 m, 19 dd, 6 dd juv. **Norfolk Ridge.** SMIB 8: stn DW146-147, 24°55'S, 168°22'E, 508-532 m, 2 lv, 1 lv juv, 1 dd, 1 dd juv. — Stn DW189, 23°18'S, 168°06'E, 400-402 m, 1 lv juv, 1 dd juv. — **NORFOLK 1:** stn DW1666, 23°42'S, 167°44'E, 469-860 m, 4 dd juv. — Stn DW1723, 23°18'S, 168°15'E, 266-267 m, 9 dd, 9 dd juv. — Stn DW1727, 23°17'S, 168°14'E, 190-212 m, 1 dd, 11 dd juv.

DISTRIBUTION — New Caledonia: between Grande Terre and Ile des Pins, and Norfolk Ridge, 212-530 m, alive in 400-530 m.

DESCRIPTION — Shell size small for genus, adult size up to *ca.* 4.2 mm; fusiform. Suture slightly impressed, whorls slightly shouldered. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of *ca.* 3.5 whorls. Axial sculpture of close-set ribs; strongest on first whorl, diminishing in strength on subsequent whorls until obsolete, final whorl smooth. Spiral sculpture of basal cords, ventrally ranging to just below adapical edge of columella. Outer lip thickened, with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with four to five denticles; middle denticle markedly smaller. Columellar callus raised, clearly demarcated. Parietal callus weak. Columella nearly smooth, but with one to two abapical denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white to beige in colour, semi-translucent. Protoconch off white to beige, occasionally with somewhat darker nucleus. Aperture and columella off-white. Operculum light brown, semi-translucent, with terminal nucleus. Holotype height 3.9 mm.

REMARKS — The only congener of the same size at similar depths known thus far is *Mitrella fineti* Poppe & Tagaro, 2010 from the Philippines. The latter differs from the new species in the multispiral protoconch, the absence of axial sculpture and the shape of the columella.

ETYMOLOGY — Latin adjective *parvus*, small, and noun *costa*, rib, in reference to the typical axial sculpture and small size of the genus; used as a noun in apposition.

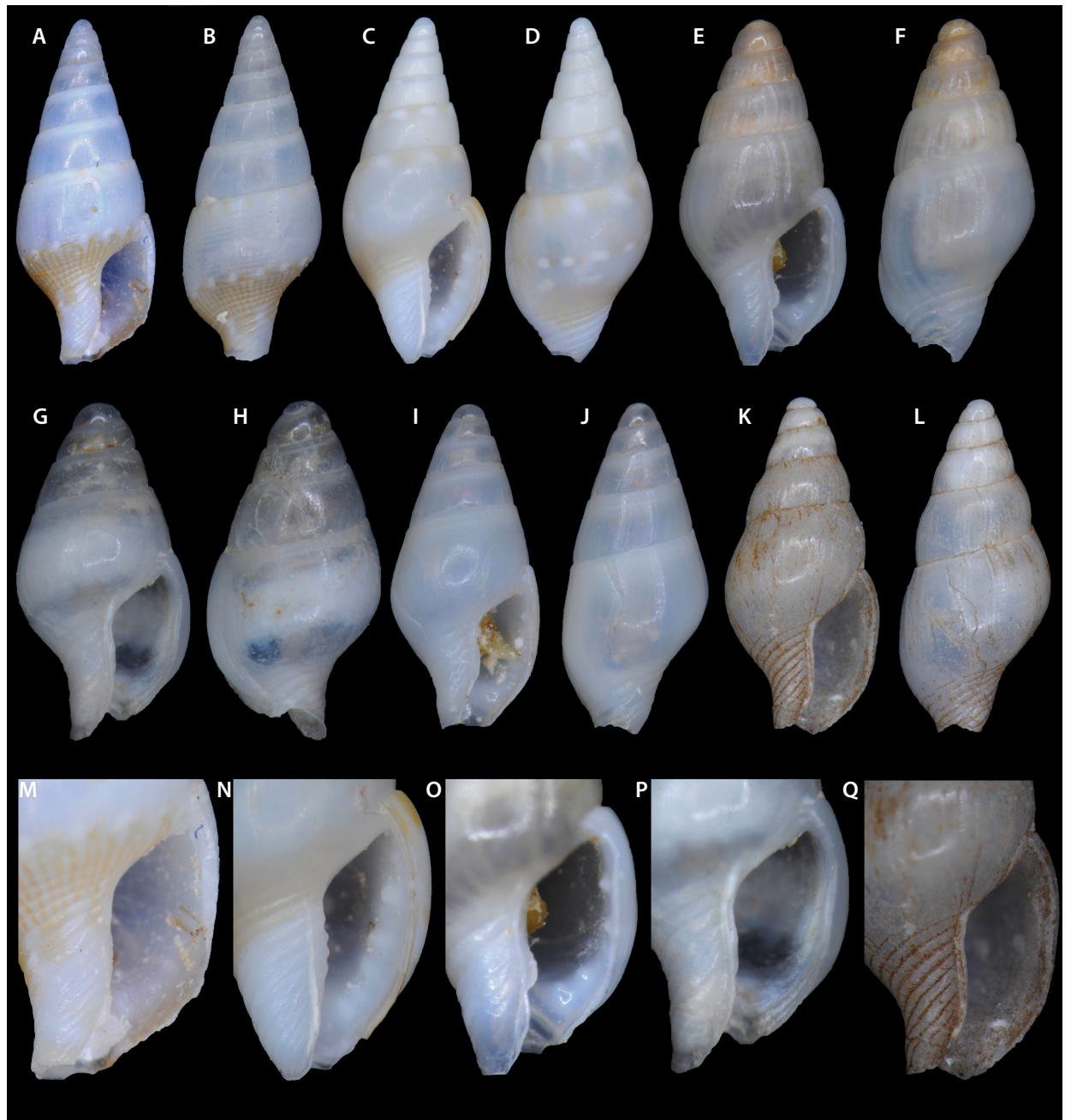


FIGURE 7

Mitrella ebisco n. sp.; **A**, holotype (8.1 mm) MNHN IM-2000-26764, Coral Sea, EBISCO stn DW2564, 333-386 m; **B**, dorsal view of holotype; **M**, aperture detail. *Mitrella bellonae* n. sp.; **C**, holotype (8.9 mm) MNHN IM-2000-26766, Coral Sea, EBISCO stn DW2564, 333-386 m; **D**, dorsal view of holotype; **N**, aperture detail. *Mitrella parvicosta* n. sp.; **E**, holotype (3.9 mm) MNHN IM-2000-26768, New Caledonia, BATHUS 2 stn DW720, 530-541 m; **F**, dorsal view of holotype; **O**, aperture detail. *Mitrella pauxillula* n. sp.; **G**, holotype (2.9 mm) MNHN IM-2000-26773, New Caledonia, BATHUS 3 stn CP811, 383-408 m; **H**, dorsal view of holotype; **P**, aperture detail. *Mitrella trivialis* n. sp.; **I**, holotype (4.6 mm) MNHN IM-2000-26776, New Caledonia, SMIB 8 stn DW193-196, 500-558 m; **J**, dorsal view of holotype. *Mitrella subtilicostata* n. sp.; **K**, holotype (4.8 mm) MNHN IM-2000-26778, New Caledonia, BIOCAL stn DW70, 965 m; **L**, dorsal view of holotype; **Q**, aperture detail.

***Mitrella pauxillula* n. sp.**

Figures 7G, H, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26773 and 7 (dd) paratypes MNHN IM-2000-26774-26775, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°41'S, 168°16'E, 383-408 m [BATHUS 3: stn CP811].

MATERIAL EXAMINED — Norfolk Ridge. BATHUS 3: stn CP811, 23°41'S, 168°16'E, 383-408 m, 3 dd, holotype MNHN IM-2000-26773 (Figures 7G, H, P) and 2 paratypes MNHN IM-2000-26774. – Stn CP813, 23°45'S, 168°17'E, 410-415 m, 1 dd. – Stn DW807, 23°40'S, 167°59'E, 420-438 m, 1 dd. – Stn DW809, 23°39'S, 167°59'E, 650-730 m, 26 dd, 2 paratypes coll. K. & D. Monsecour, 3 dd juv. – Stn DW817, 23°42'S, 168°16'E, 405-410 m, 2 dd. – Stn DW818, 23°44'S, 168°16'E, 394-401 m, 5 dd, paratypes MNHN IM-2000-26775. – NORFOLK 1: stn DW1732, 23°20'S, 168°16'E, 347-1063 m, 4 dd, 1 dd juv. – NORFOLK 2: stn DW2057, 24°40'S, 168°39'E, 555-565 m, 1 dd.

DISTRIBUTION — New Caledonia: Norfolk Ridge, 401-650 m.

DESCRIPTION — Shell size small for genus, adult size up to *ca.* 3.2 mm; fusiform, bulbous. Suture slightly impressed. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of little less than three whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to just below adapical end of columella. Outer lip thickened, with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with four very weak denticles. Columellar callus raised, clearly demarcated. Parietal callus weak. Columella smooth. Siphonal canal short, open, slightly recurved, markedly longer on columellar side. Teleoconch whorls off-white in colour, semi-translucent. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 2.9 mm.

REMARKS — This species is most similar to *M. parvicosta* n. sp., but differs in its lack of shouldered whorls, smaller teleoconch, lack of both spiral and axial sculpture, weaker denticles on inner lip, smooth columella and in the shape of the siphonal canal.

ETYMOLOGY — Latin adjective *pauxillulus*, very small, very little, in reference to its small size.

***Mitrella trivialis* n. sp.**

Figures 7I, J

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26776 and 11 (dd) paratypes MNHN IM-2000-26777, 2 (lv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 22°59'S-23°00'S, 168°21'E-168°22'E, 500-558 m [SMIB 8: stn DW193-196].

MATERIAL EXAMINED — New Caledonia. BATHUS 2: stn DW719, 22°48'S, 167°15'E, 444-445 m, 2 lv, 5 lv juv, 3 dd. Norfolk Ridge. CHALCAL 2: stn DW76, 23°40'S, 167°45'E, 470 m, 4 lv, 1 lv juv, 6 dd. – BATHUS 3: stn DW809, 23°39'S, 167°59'E, 650-730 m, 3 lv, 4 dd, 22 dd juv. – NORFOLK 1: stn DW1732, 23°20'S, 168°16'E, 347-1063 m, 2 dd, 4 dd juv. – NORFOLK 2: stn DW2033, 23°39'S, 167°43'E, 430-450 m, 4 dd, 3 dd juv. – Stn DW2036, 23°38'S, 167°39'E, 571-610 m, 5 dd, 2 dd juv. – Stn DW2132, 23°17'S, 168°14'E, 405-455 m, 7 dd. – SMIB 8: stn DW166, 23°38'S, 167°43'E, 433-450 m, 14 dd, 6 dd juv. – Stn DW167, 23°38'S, 167°43'E, 430-452 m, 6 lv, 2 paratypes coll. K. & D. Monsecour, 4 lv juv, 20 dd, 24 dd juv. – Stn DW169, 23°37'S, 167°42'E, 447-450 m, 18 dd, 10 dd juv. – Stn DW193-196, 22°59'S-23°00'S, 168°21'E-168°22'E, 500-558 m, 1 lv, holotype MNHN IM-2000-26776 (Figures 7I, J), 11 dd, paratypes MNHN IM-2000-26777.

DISTRIBUTION — New Caledonia: between Grande Terre and Ile des Pins, and Norfolk Ridge, alive in 445–650 m.

DESCRIPTION — Shell size small for genus, adult size up to *ca.* 4.9 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, ~1.5–1.6 smooth whorls. Teleoconch of *ca.* 3.75 whorls. Axial sculpture absent, apart from very weak riblets on first whorl. Spiral sculpture of basal cords, ventrally ranging to just below adapical edge of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with seven weak, equally spaced denticles. Columellar callus raised, clearly demarcated. Parietal callus weak. Columella with rim of merged denticles. Siphonal canal short, open, straight. Teleoconch whorls beige in colour, semi-translucent. Protoconch off-white, semi-translucent. Aperture and columella off-white. Operculum light brown, semi-translucent, with terminal nucleus. Holotype height 4.6 mm.

REMARKS — This species differs from *Mitrella parvicosta* n. sp. in its lack of distinct axial sculpture, the position and number of denticles in the inner lip, the rim of merged denticles on the columella, the less shouldered whorls and the larger adult size. *Mitrella fineti* Poppe & Tagaro, 2010 differs in having a multispiral protoconch and more shouldered whorls.

ETYMOLOGY — Latin adjective *trivialis*, commonplace, in reference to its lack of distinctive features and its close approximation of the commonly accepted diagnosis for the genus.

***Mitrella subtilicostata* n. sp.**

Figures 7K, L, Q

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26778 and 7 (dd) paratypes MNHN IM-2000-26779, 1 (dd) coll. K. & D. Monsecour.

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°26'S, 167°53'E, 965 m [BIOCAL: stn DW70].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — New Caledonia, Norfolk Ridge.

DESCRIPTION — Shell of rather small size for genus, adult size up to 5.0 mm; fusiform, bulbously elongate. Suture slightly impressed. Protoconch paucispiral, ~1.25 smooth whorls. Teleoconch of four whorls. Axial sculpture consisting of numerous, close-set, very weak riblets. Spiral sculpture of basal cords, ventrally ranging to just below adapical end of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip denticulate, with four weak, widely spaced denticles. Columellar callus thin, but slightly demarcated. Parietal callus very weak, almost obsolete. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls white in colour, semi-translucent. Protoconch white, semi-translucent. Aperture and columella white. Holotype height 4.8 mm.

REMARKS — This species is most similar to *Mitrella trivialis* n. sp., but differs in the more bulbous whorls, more rounded aperture, the axial sculpture and the slightly different protoconch.

ETYMOLOGY — Latin adjectives *subtilis*, fine, subtle, and *costatus*, ribbed, in reference to the fine axial sculpture.

Mitrella expolita n. sp.

Figures 8A, B

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26780 and 6 (dd) paratypes MNHN IM-2000-26781-26782, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 22°39'S, 166°34'E, 570 m [BIOGEOCAL: stn KG219].

MATERIAL EXAMINED — New Caledonia. BIOCAL: stn DW49, 23°03'S, 167°33'E, 825-830 m, 1 dd, paratype MNHN IM-2000-26781. – BIOGEOCAL: stn KG201, 22°40'S, 166°33'E, 595 m, 1 dd, 1 paratype coll. K. & D. Monsecour, 2 dd juv. – Stn KG219, 22°39'S, 166°34'E, 570 m, 6 dd, holotype MNHN IM-2000-26780 (Figures 8A, B) and 5 paratypes MNHN IM-2000-26782. – Stn KG227, 21°33'S, 166°24'E, 500 m, 1 dd juv.

DISTRIBUTION — New Caledonia: off east and west coasts of Grande Terre, and south of Ile des Pins, 500-825 m.

DESCRIPTION — Shell size small for genus, adult size up to *ca.* 4.7 mm; fusiform, elongate. Suture very weakly incised. Protoconch paucispiral, slightly less than 1.5 smooth whorls. Teleoconch of *ca.* 3.5 whorls. Axial and spiral sculpture absent. Outer lip very slightly thickened, smooth. Inner lip smooth. Columellar callus weak. Parietal callus weak. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour. Protoconch off-white. Aperture and columella off-white. Holotype height 4.5 mm.

REMARKS — This species differs from *Mitrella parvicosta* n. sp. in its lack of axial and spiral sculpture and smooth columella and inner lip.

ETYMOLOGY — Latin adjective *expolitus*, smooth, polished, glossy, in reference to the lack of sculpture and the smooth columella and inner lip.

Mitrella charcoti n. sp.

Figures 8C, D

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26783 and 3 (dd) paratypes MNHN IM-2000-26784.

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°36'S, 167°12'E, 695-705 m [BIOCAL: stn DW56].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — New Caledonia, Norfolk Ridge.

DESCRIPTION — Shell size small for genus, adult size up to 5.0 mm; fusiform, slightly bulbous. Suture weakly incised. Protoconch paucispiral, 1.5 smooth whorls. Teleoconch consisting of *ca.* 3.5 whorls. Axial and spiral sculpture absent. Outer lip slightly thickened, with small rim, smooth. Inner lip smooth. Columellar callus weak. Parietal callus weak. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, semi-translucent. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 4.9 mm.

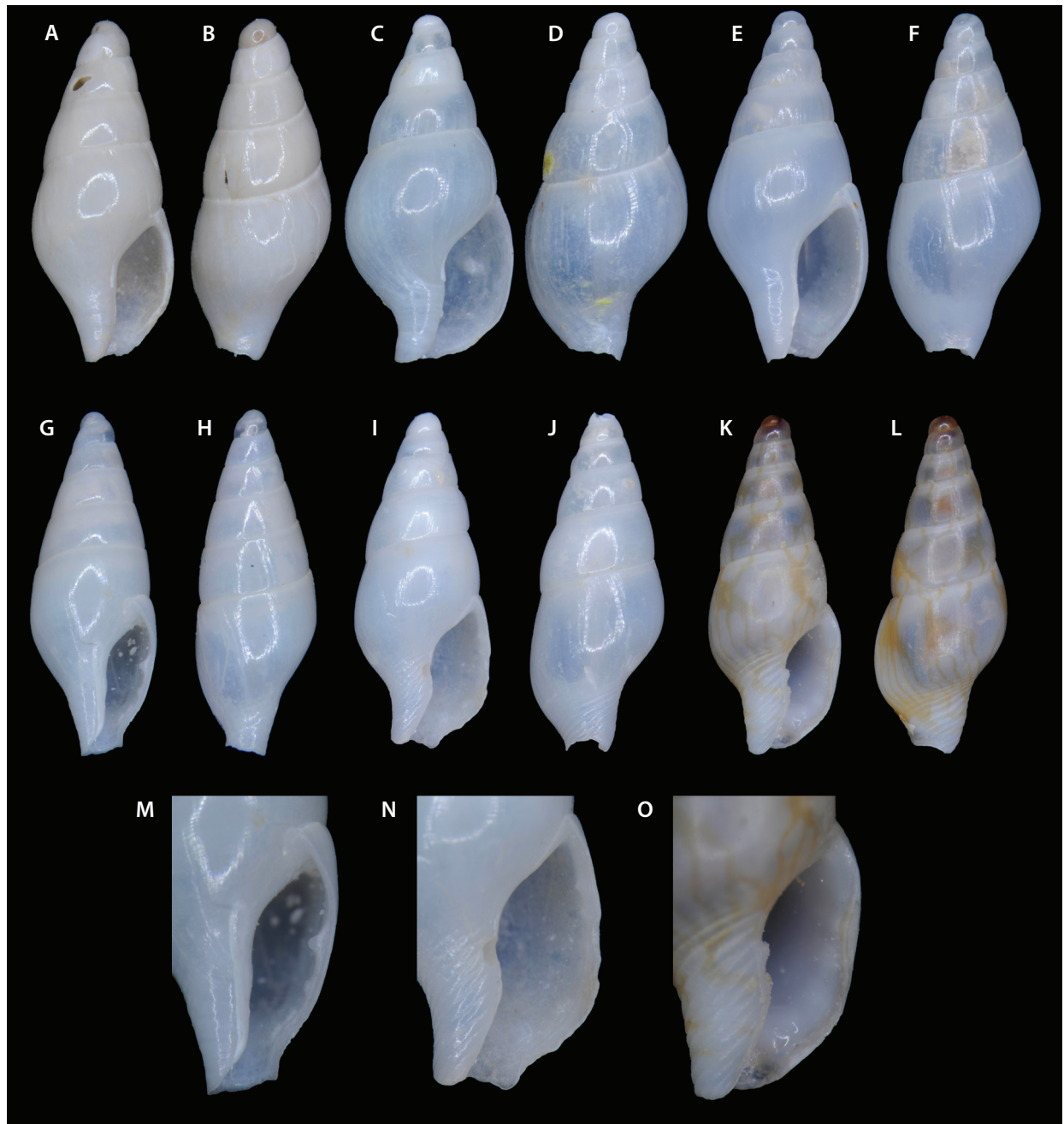


FIGURE 8

Mitrella expolita n. sp.; **A**, holotype (4.5 mm) MNHN IM-2000-26780, New Caledonia, BIOGEOCAL stn KG219, 570 m; **B**, dorsal view of holotype. *Mitrella charcoti* n. sp.; **C**, holotype (4.9 mm) MNHN IM-2000-26783, New Caledonia, BIOCAL stn DW56, 695-705 m; **D**, dorsal view of holotype. *Mitrella inaccessa* n. sp.; **E**, holotype (7.7 mm) MNHN IM-2000-26785, New Caledonia, NORFOLK 2 stn DW2144, 1004-1009 m; **F**, dorsal view of holotype. *Mitrella inaequalis* n. sp.; **G**, holotype (5.5 mm) MNHN IM-2000-26787, Coral Sea, EBISCO stn DW2629, 569-583 m; **H**, dorsal view of holotype; **M**, aperture detail. *Mitrella laevior* n. sp.; **I**, holotype (8.3 mm) MNHN IM-2000-26788, New Caledonia, BIOCAL stn DW48, 775 m; **J**, dorsal view of holotype; **N**, aperture detail. *Mitrella herosae* n. sp.; **K**, holotype (6.3 mm) MNHN IM-2000-26794, New Caledonia, NORFOLK 1 stn DW1727, 190-212 m; **L**, dorsal view of holotype; **O**, aperture detail.

REMARKS — This species is very close to *Mitrella expolita* n. sp., but differs in the thinner and more bulbous shell.

ETYMOLOGY — Named after the research vessel *Jean-Charcot*, on board of which the type material was collected.

Mitrella inaccessa n. sp.

Figures 8E, F

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26785 and 10 (dd) paratypes MNHN IM-2000-26786, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 23°09'S, 167°27'E, 1004-1009 m [NORFOLK 2: stn DW2144].

MATERIAL EXAMINED — **Norfolk Ridge.** BIOCAL: stn DW48, 23°00'S, 167°29'E, 775 m, 11 dd, 2 dd juv. — Stn DW49, 23°03'S, 167°33'E, 825-830 m, 8 dd, 2 dd juv. — Stn DW53, 23°09'S, 167°43'E, 975-1005 m, 2 dd 2 dd juv. — Stn DW70, 23°26'S, 167°53'E, 965 m, 13 dd, 5 dd juv. — MUSORSTOM 4: stn DW219, 23°02'S, 167°33'E, 760 m, 1 dd. — NORFOLK 2: stn DW2144, 23°09'S, 167°27'E, 1004-1009 m, 19 dd, holotype MNHN IM-2000-26785 (Figures 8E, F) and 10 paratypes MNHN IM-2000-26786, 2 coll. K. & D. Monsecour, 2 dd juv.

DISTRIBUTION — New Caledonia: Norfolk Ridge, 760-1004 m.

DESCRIPTION — Shell size small for genus, adult size up to 8.1 mm; fusiform, slightly bulbously elongate. Suture slightly impressed. Protoconch paucispiral, 1.5 smooth whorls. Teleoconch of four whorls. Axial sculpture of very weak, rounded, axial cords on first two whorls, obsolete on subsequent whorls. Spiral sculpture absent. Outer lip slightly thickened, smooth. Inner lip smooth. Columellar callus slightly thickened. Parietal callus very weak, almost obsolete. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, semi-translucent. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 7.7 mm.

REMARKS — This species is most similar to *Mitrella charcoti* n. sp., another species without basal cords, but differs in its more bulbous protoconch, less bulbous teleoconch whorls, larger size and faint axial sculpture on the early teleoconch whorls. Another closely related species is *Mitrella simplex* (Schepman, 1911), a species known only from Indonesian waters, which is less bulbous and possesses basal cords.

ETYMOLOGY — Latin adjective *inaccessus*, unapproachable, unreachable, in reference to the species' deep bathymetric range.

Mitrella inaequalis n. sp.

Figures 8G, H, M

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26787.

TYPE LOCALITY — Coral Sea, Lansdowne Bank, Fairway Reef, 21°06'S, 160°46'E, 569-583 m [EBISCO: stn DW2629].

MATERIAL EXAMINED. — Known only from the holotype.

DISTRIBUTION — Coral Sea, Lansdowne Bank, Fairway Reef.

DESCRIPTION — Shell size small for genus, size of adult holotype 5.5 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, 1.5 smooth whorls. Teleoconch slightly less than five whorls. Axial and spiral sculpture absent. Outer lip slightly thickened, with small rim, smooth. Lower half of inner lip with four denticles, diminishing in strength abapically. Columellar callus thickened, semi-demarcated. Parietal callus thin. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour. Protoconch off-white, semi-translucent. Aperture and columella off-white.

REMARKS — This species is most similar to *Mitrella expolita* n. sp., but differs in its slightly larger adult size, greater number of teleoconch whorls, thicker callus and apertural denticles.

ETYMOLOGY — Latin adjective *inaequalis*, uneven, unequal, in reference to the unique placement and dissimilar size of the denticles in the inner lip.

Mitrella laevior n. sp.

Figures 8I, J, N

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26788 and 3 (dd) paratypes MNHN IM-2000-26789, 1 (dd) coll. K. & D. Monsecour.

TYPE LOCALITY — New Caledonia, south of Ile des Pins, 23°00'S, 167°29'E, 775 m [BIOCAL: stn DW48].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — Known only from the type locality.

DESCRIPTION — Shell size slightly smaller than typical for genus, adult size up to 8.5 mm; fusiform, slightly bulbously elongate. Suture weakly incised. Protoconch paucispiral, 1.5 smooth whorls. Teleoconch of *ca.* 4.5 whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to just below adapical end of columella. Outer lip slightly thickened, smooth, bearing only continuation of basal cords. Inner lip with weak rim, denticulate, with seven weak denticles. Columellar callus weak. Parietal callus very weak, almost obsolete. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, semi-translucent. Protoconch off-white, semi-translucent. Aperture and columella off-white. Holotype height 8.3 mm.

REMARKS — This species stands apart from all congeners in the very light, semi-translucent construction of the shell for its size.

ETYMOLOGY — Latin adjective *laevior*, lighter, in reference to its very light construction.

Mitrella cuspidata Lussi, 2009

Figures 9A, B, I, M

Mitrella cuspidata Lussi, 2009: 24-25.

MATERIAL EXAMINED — New Caledonia. LAGON stn DW830, 20°49'S, 165°19'E, 105-110 m, 12 dd (1 coll. K. & D. Monsecour), 6 dd juv. — BATHUS 1: stn DW692, 20°35'S, 164°59'E, 140-150 m, 1 dd. — BATHUS 4: stn DW887, 21°07'S, 164°28'E, 320-344 m, 1 dd. **Norfolk Ridge**. BATHUS 3: stn CH802, 23°41'S, 168°00'E, 237-550 m, 1 lv. — NORFOLK 1: stn DW1675, 24°45'S, 168°09'E, 231-233 m, 1 dd. — Stn DW1723, 23°18'S, 168°15'E,

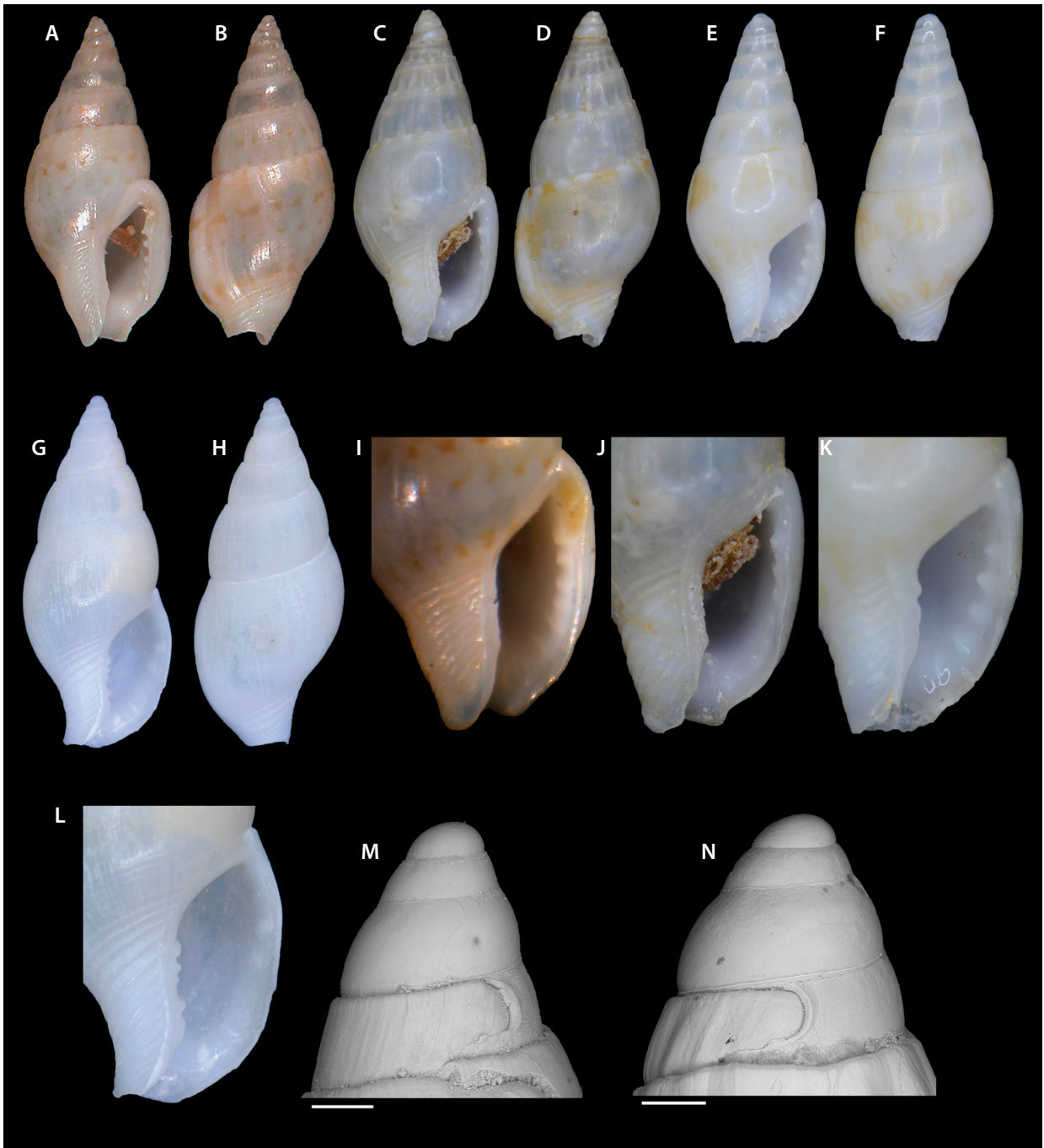


FIGURE 9

Mitrella cuspidata Lussi, 2009; **A**, shell (6.7 mm), New Caledonia, NORFOLK 1 stn DW1675, 231-233 m; **B**, dorsal view; **I**, aperture detail; **M**, protoconch. *Mitrella jayi* n. sp.; **C**, holotype (6.9 mm) MNHN IM-2000-26792, New Caledonia, NORFOLK 1 stn DW1657, 305-332 m; **D**, dorsal view of holotype; **J**, aperture detail; **N**, protoconch of paratype (6.8 mm) MNHN IM-2000-25120, SMIB 8 stn DW157, 251-255 m. *Mitrella maculafasciata* n. sp.; **E**, holotype (7.5 mm) MNHN IM-2000-26798, New Caledonia, MUSORSTOM 6 stn DW459, 425 m; **F**, dorsal view of holotype; **K**, aperture detail. *Mitrella cyanae* n. sp.; **G**, holotype (13.9 mm) MNHN IM-2000-26800, New Caledonia, CALSUB stn Pl. 22, 563-627 m; **H**, dorsal view of holotype; **L**, aperture detail.

266-267 m, 1 dd juv. – Stn DW1724, 23°17'S, 168°14'E, 200-291 m, 1 dd, 1 dd juv. – Stn DW1727, 23°17'S, 168°14'E, 190-212 m, 1 dd, 3 dd juv. – NORFOLK 2: stn DW2040, 23°41'S, 168°01'E, 285 m, 1 dd. – Stn DW2123, 23°18'S, 168°15'E, 187-197 m, 1 dd. – SMIB 8: stn DW154-159, 24°46'S, 168°08'E, 235-300 m, 1 dd juv. **Loyalty Ridge**. MUSORSTOM 6: stn DW 468, 21°06'S, 167°33'E, 600 m, 1 dd, 1 dd juv.

DISTRIBUTION — New Caledonia: off east and west coasts of Grande Terre, Norfolk Ridge, and Loyalty Ridge, 110-600 m. Durban, South Africa (type locality).

REMARKS — *Mitrella cuspidata* was described from Natal, South Africa and has never been reported since its original description. Thus, the present material represents a significant range extension to the east, but one that is consistent with its multispiral protoconch (Figure 9C), indicative of a long period of planktotrophic larval development and hence good dispersal potential. Future deep-water expeditions in the Indian and Pacific Oceans may help confirm the undoubtedly broad distribution of this species.

Mitrella jayi n. sp.

Figures 9C, D, J, N

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26792 and 8 (lv & dd) paratypes MNHN IM-2000-25120, IM-2000-26790-26791, IM-2000-26793, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 23°28'S, 167°52'E, 305-332 m [NORFOLK 1: stn DW1657].

MATERIAL EXAMINED — North of New Caledonia. MUSORSTOM 4: stn DW164, 18°33'S, 163°13'E, 255 m, 1 dd. **Norfolk Ridge**. BATHUS 3: stn CH801, 23°39'S, 168°01'E, 270-300 m, 3 dd, 1 paratype coll. K. & D. Monsecour. – Stn CH802, 23°41'S, 168°00'E, 237-550 m, 1 dd. – BERYX 11: stn DW18, 24°48'S, 168°10'E, 250-270 m, 3 dd, 1 dd juv. – BIOCAL: stn DW64, 24°48'S, 168°09'E, 250 m, 1 dd. – Stn KG73, 22°13'S, 167°29'E, 1285 m, 1 dd. – NORFOLK 1: stn DW1657, 23°28'S, 167°52'E, 305-332 m, 1 lv, holotype MNHN IM-2000-26792 (Figures 9C, D, J, N). – Stn DW1675, 24°45'S, 168°09'E, 231-233 m, 2 lv, 2 dd, paratypes MNHN IM-2000-26790. – Stn DW1723, 23°18'S, 168°15'E, 266-267 m, 3 dd juv. – Stn DW1724, 23°17'S, 168°14'E, 200-291 m, 1 dd, 1 dd juv. – Stn DW1727, 23°17'S, 168°14'E, 190-212 m, 1 dd paratype MNHN IM-2000-26791. – SMIB 8: stn DW157, 24°46'S, 168°08'E, 251-255 m, 2 dd, paratypes MNHN IM-2000-25120. – Stn DW170-172, 23°41'S, 168°01'E, 241-290 m, 1 lv, paratype MNHN IM-2000-26793. **Coral Sea**. EBISCO: stn DW2515, 24°04'S, 159°41'E, 330-370 m, 1 dd, 1 dd juv. – Stn DW2639, 20°47'S, 161°01'E, 289-294 m, 3 dd.

DISTRIBUTION — Coral Sea, Grand Passage and Norfolk Ridge, 212-330 m, alive in 233-305 m. The single empty shell from BIOCAL stn DW64, 1285 m, is certainly allochthonous.

DESCRIPTION — Shell size slightly smaller than typical for genus, adult size up to *ca.* 7.7 mm; fusiform, elongate. Suture slightly impressed. Protoconch multispiral, 3.5-3.75 smooth whorls. Teleoconch of *ca.* 4.5 whorls. Axial sculpture of strong axial ribs on first 2–2.5 whorls, diminishing in strength on subsequent whorls, obsolete on final two whorls. Spiral sculpture of basal cords, ventrally ranging to adapical end of columella. Outer lip thickened, with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with seven equally spaced denticles of equal size. Columellar callus thickened. Parietal callus thinner than columellar callus. Columella with row of merged denticles, forming small rim. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour, with band of white spots, interrupted by pale yellowish-brown flammules, immediately above and below suture. Protoconch off-white. Aperture and columella off-white. Operculum typical of genus, pale brown, semi-translucent, with terminal nucleus. Holotype height 6.9 mm.

REMARKS — This species is most similar to *Mitrella cuspidata*, but the latter differs in the lack of axial sculpture, the more shouldered whorls and the more elongate and lighter shell.

ETYMOLOGY — Named after Maurice Jay, for his contributions to the knowledge of the molluscs of Réunion in general, and Columbelloidea in particular.

Mitrella herosae n. sp.

Figures 8K, L, O

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26794 and 9 (lv) paratypes MNHN IM-2000-26795-26797, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 23°17'S, 168°14'E, 190-212 m [NORFOLK 1: stn DW1727].

MATERIAL EXAMINED — New Caledonia. CONCALIS: stn CP3028, 20°17'S, 163°49'E, 650-1200 m, 2 dd. Norfolk Ridge. BATHUS 3: stn CH801, 23°39'S, 168°01'E, 270-300 m, 3 dd, 1 dd juv. — Stn CH802, 23°41'S, 168°00'E, 237-550 m, 3 dd. — Stn CP806, 23°42'S, 168°01'E, 308-312 m, 1 dd juv. — BERYX 11: stn CH41, 23°39'S, 168°00'E, 230-260 m, 5 dd, 3 dd juv. — NORFOLK 1: stn DW1724, 23°17'S, 168°14'E, 200-291 m, 10 dd, 6 dd juv. — Stn DW1727, 23°17'S, 168°14'E, 190-212 m, 2 lv, holotype MNHN IM-2000-26794 (Figures 8K, L, O) and paratype MNHN IM-2000-26795, 7 dd, 2 coll. K. & D. Monsecour, 2 lv juv, 33 dd juv. — NORFOLK 2: stn DW2040, 23°41'S, 168°01'E, 285 m, 1 lv, paratype MNHN IM-2000-26796. — Stn DW2123, 23°18'S, 168°15'E, 187-197 m, 7 lv, paratypes MNHN IM-2000-26797, 19 dd, 2 lv juv, 16 lv juv. — SMIB 8: stn DW170-172, 23°41'S, 168°01'E, 230-290 m, 1 lv, 1 dd. — TERRASSES: stn DW3109, 23°01'S, 168°18'E, 150-180 m, 1 dd.

DISTRIBUTION — Off Grande Terre and Norfolk Ridge, 180-650 m, alive in 197-285 m.

DESCRIPTION — Shell size small for genus, adult size up to ca. 7.8 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, 1.6–1.75 smooth whorls. Teleoconch of ca. 4.25 semi-translucent whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to just above adapical end of columella. Outer lip thickened, with distinct rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with six equally spaced denticles of equal size. Columellar callus thickened. Parietal callus weak. Columella with three denticles, extending into aperture. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, with yellowish-brown axial lines, sometimes merging roughly at mid-whorl. Protoconch pale purplish. Aperture and columella off-white. Operculum typical of genus, pale brown, semi-translucent, with terminal nucleus. Holotype height 6.3 mm.

REMARKS — This species is most similar to the shallow water *Mitrella philia* (Duclos, 1846), but differs in the suture, which is not incised, the more bulbous and robust purplish protoconch, the number of columellar denticles and the shorter siphonal canal.

ETYMOLOGY — Named after Virginie Héros for all her kind help in our research on Columbelloidea.

Mitrella maculafasciata n. sp.

Figures 9E, F, K

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26798 and 2 (dd) paratypes MNHN IM-2000-26799, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Loyalty Ridge, off Lifou, 21°01'S, 167°31'E, 425 m [MUSORSTOM 6: stn DW459].

MATERIAL EXAMINED — Loyalty Ridge. MUSORSTOM 6: stn DW459, 21°01'S, 167°31'E, 425 m, 4 dd, holotype MNHN IM-2000-26798 (Figures 9E, F, K) and 2 paratypes MNHN IM-2000-26799, 1 coll. K. & D. Monsecour, 7 dd juv.

DISTRIBUTION — Known only from the type locality.

DESCRIPTION — Shell size small for genus, adult size up to *ca.* 7.7 mm; fusiform, elongate. Suture slightly impressed, whorls slightly shouldered. Protoconch paucispiral, slightly less than two smooth whorls. Teleoconch of slightly more than five whorls. Axial sculpture absent. Spiral sculpture of basal cords, ventrally ranging to just above adapical end of columella. Outer lip thickened, with small rim, smooth, bearing only continuation of basal cords. Inner lip denticulate, with five strong, equally spaced denticles. Columellar callus thickened, slightly demarcated. Parietal callus weak. Columella with three partially merged denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, with band of faint pale brown flecks across adapical half of whorls. Final whorl with second band of flecks just above basal cords. Protoconch semi-translucent, off-white. Aperture and columella off-white. Holotype height 7.5 mm.

REMARKS — This species is most similar to *Mitrella debitusae* n. sp., but differs in the less shouldered whorls, the more bulbous protoconch, a less constricted siphonal canal, fewer columellar denticles and the colour pattern.

ETYMOLOGY — Latin noun *macula*, fleck, spot, and adjective *fasciatus*, banded, in reference to the colour pattern.

Mitrella cyanae n. sp.

Figures 9G, H, L

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26800 and 2 (dd) paratypes MNHN IM-2000-26801, 1 (dd) coll. K. & D. Monsecour.

TYPE LOCALITY — New Caledonia, south of Ile des Pins, 22°53'S, 167°23'E, 563-627 m [CALSUB: stn Pl. 22].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — New Caledonia, south of Ile des Pins.

DESCRIPTION — Shell size typical for genus, adult size up to 14.0 mm; fusiform, bulbously elongate. Suture slightly impressed. Protoconch paucispiral, 1.5 smooth whorls. Teleoconch of *ca.* 5.5 whorls. Axial sculpture absent. Spiral sculpture of two shallow spiral grooves just below suture on early whorls, increasing in number abapically to cover entire body whorl; basal cords ventrally ranging to mid-parietal height. Outer lip slightly thickened. Inner lip with seven denticles; two adapicalmost denticles and most abapical denticle stronger. Columellar callus thickened. Parietal callus weaker. Columella with six denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white to pale brown in colour. Protoconch off-white. Aperture and columella off-white. Holotype height 13.9 mm.

REMARKS — This species is most similar to *Mitrella alizonae* (Melvill & Standen, 1901), but differs in its thinner and more bulbous shell, broader aperture, spiral sculpture and larger size.

ETYMOLOGY — Named after the Research Submersible *Cyana*, through which the type material was collected.

Genus **SULCOMITRELLA** Kuroda, Habe & Oyama, 1971

Sulcomitrella monodonta (Habe, 1958)

Figures 10A, B, M

Mitrella monodonta Habe, 1958: 34.

Mitrella (Sulcomitrella) monodonta – Okutani (ed) 2000: 429, pl. 214, fig. 31.

Mitrella monodonta – Monsecour in Poppe 2008: 68, pl. 329, fig. 1.

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn CP646, 21°53'S, 166°50'E, 255-360 m, 1 lv.

DISTRIBUTION — New Caledonia: off east coast of Grande Terre. Japan, East China Sea, and Philippines, in *ca* 50-350 m, based on commercial sources.

REMARKS — The first record of this species from the New Caledonia region. The present material represents an extension of the known range to the south. Despite a paucispiral protoconch, specimens from throughout the geographical range are morphologically indistinguishable.

Sulcomitrella adversa n. sp.

Figures 10C, D, N

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26802 and 7 (dd) paratypes MNHN IM-2000-26803-26808, 1 (dd) coll. K. & D. Monsecour (as listed below).

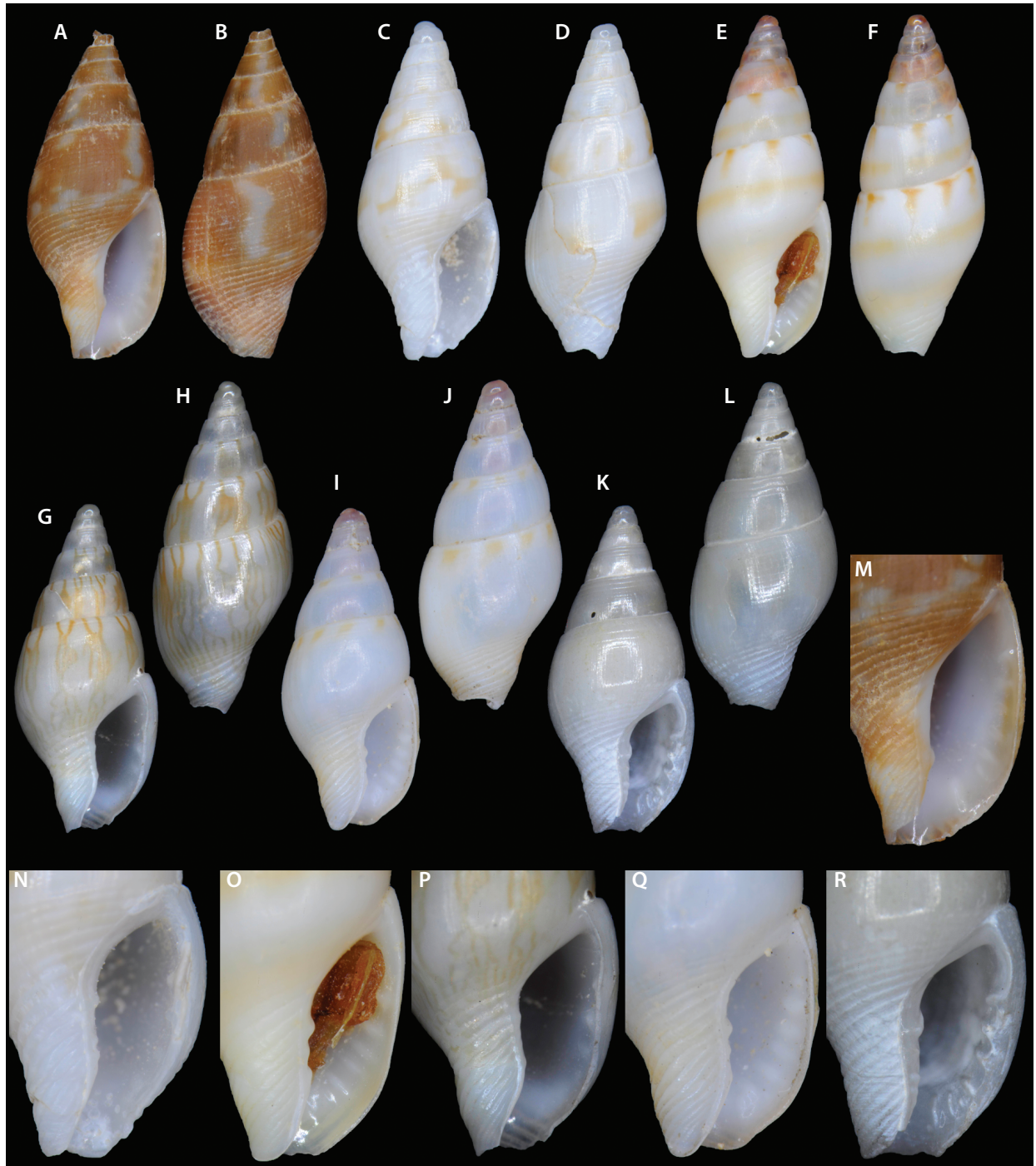
TYPE LOCALITY — New Caledonia, 22°05'S, 165°58'E, 250-300 m [BATHUS 4: stn DW885].

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn DW654, 21°17'S, 165°57'E, 237-298 m, 1 dd, paratype MNHN IM-2000-26803. – Stn DW688, 20°33'S, 165°00'E, 270-282 m, 2 dd, paratype MNHN IM-2000-26804, paratype coll. K. & D. Monsecour. – Stn DE700, 20°57'S, 165°35'E, 160-222 m, 1 dd juv, paratype MNHN IM-2000-26805. – Stn CP711, 21°43'S, 166°36'E, 315-327 m, 2 dd, paratypes MNHN IM-2000-26806. – BATHUS 4: stn DW885, 22°05'S, 165°58'E, 250-300 m, 2 dd, holotype MNHN IM-2000-26802 (Figures 10C, D, N) and paratype MNHN IM-2000-26807. – SMIB 8: stn DW146-147, 24°55'S, 168°22'E, 508-532 m, 1 dd, paratype MNHN IM-2000-26808.

DISTRIBUTION — New Caledonia, 222-508 m.

FIGURE 10

Sulcomitrella monodonta (Habe, 1958); **A**, shell (7.9 mm), New Caledonia, BATHUS 1 stn CP646, 255-360 m; **B**, dorsal view; **M**, aperture detail. *Sulcomitrella adversa* n. sp.; **C**, holotype (6.9 mm) MNHN IM-2000-26802, New Caledonia, BATHUS 4 stn DW885, 250-300 m; **D**, dorsal view of holotype; **N**, aperture detail. *Sulcomitrella evanescens* n. sp.; **E**, holotype (10.3 mm) MNHN IM-2000-26811, New Caledonia, BATHUS 3 DW818, 394-401 m; **F**, dorsal view of holotype; **O**, aperture detail. *Sulcomitrella imperfecta* n. sp.; **G**, holotype (9.8 mm) MNHN IM-2000-26813, Coral Sea, EBISCO stn DW2574, 358-374 m; **H**, dorsal view of holotype; **P**, aperture detail. *Sulcomitrella imbecillis* n. sp.; **I**, holotype (7.3 mm) MNHN IM-2000-26818, Coral Sea, MUSORSTOM 5 stn DW298, 320 m; **J**, dorsal view of holotype; **Q**, aperture detail. *Sulcomitrella alisiensis* n. sp.; **K**, holotype (9.1 mm) MNHN IM-2000-26821, New Caledonia, BATHUS 2 stn DW739, 465-525m; **L**, dorsal view of holotype; **R**, aperture detail.



DESCRIPTION — Shell size typical for genus, adult size up to 8.4 mm; fusiform, elongate. Suture slightly incised, whorls slightly shouldered. Protoconch paucispiral, ~1.6-1.7 smooth whorls. Teleoconch of 4.25 whorls. Axial sculpture absent. Spiral sculpture of six very broad flattened spiral cords, with narrow, groove-like interspaces, on first whorl, increasing in number adapically; basal cords difficult to differentiate from spiral cords. Outer lip slightly thickened, bearing continuation of spiral cords. Inner lip denticulate, with seven denticles of unequal strength. Columellar callus thickened. Parietal callus thickened. Columella typically with three denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, with band of pale brown blotches at mid-whorl. Protoconch white, semi-translucent. Aperture and columella off-white. Holotype height 6.9 mm.

REMARKS — This slender species is most similar to *Sulcomitrella monodonta*, but differs in the paucispiral protoconch, the shouldered whorls, the incised suture, the columellar denticles and the colour pattern.

ETYMOLOGY — Latin adjective *adversus*, opposite, in reference to the affinity with *Sulcomitrella monodonta*, from which it differs in possessing a colour pattern that is exactly reversed.

Sulcomitrella evanescens n. sp.

Figures 10E, F, O

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26811 and 15 (lv) paratypes MNHN IM-2000-26812, 2 (lv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, 23°44'S, 168°16'E, 394-401 m [BATHUS 3: stn DW818].

MATERIAL EXAMINED — North of New Caledonia. MUSORSTOM 4: stn DW164, 18°33'S, 163°13'E, 250 m, 1 dd juv. – CONCALIS: stn DW2979, 18°16'S, 162°54'E, 350 m, 2 dd. – Stn DW2984, 18°00'S, 163°03'E, 450-509 m, 3lv, 1 lv juv. **New Caledonia.** BATHUS 2: stn DW724, 22°48'S, 167°26'E, 344-358 m, 2 dd, 12 dd juv. – Stn DW730, 23°03'S, 166°58'E, 397-400 m, 1 dd. – NORFOLK 2 stn DW2151, 22°43'S, 167°14'E, 353-368 m, 1 dd. **Norfolk Ridge.** BATHUS 3: stn CP805, 23°41'S, 168°01'E, 278-301 m, 1 dd juv. – Stn CP811, 23°41'S, 168°16'E, 383-408 m, 1 lv, 16 lv juv, 7 dd, 19 dd juv. – Stn CP813, 23°45'S, 168°17'E, 410-415 m, 2 lv, 35 lv juv, 1 dd, 34 dd juv. – Stn DW807, 23°40'S, 167°59'E, 420-438 m, 1 dd. – Stn DW816, 23°41'S, 168°15'E, 380-391 m, 1 dd. – Stn DW817, 23°42'S, 168°16'E, 405-410 m, 5 lv, 24 lv juv, 1 dd, 16 dd juv. – Stn DW818, 23°44'S, 168°16'E, 394-401 m, 44 lv, holotype MNHN IM-2000-26811 (Figures 10E, F, O) and 15 paratypes MNHN IM-2000-26812, 2 coll. K. & D. Monsecour, 176 lv juv, 10 dd, 41 dd juv. – LITHIST: stn DW13, 23°45'S, 168°17'E, 400 m, 3 dd, 1 dd juv. – NORFOLK 1: stn CP1706, 23°44'S, 168°17'E, 383-394 m, 3 dd, 1 dd juv. – Stn DW1652, 23°26'S, 167°50'E, 290-378 m, 2 dd. – Stn DW1654, 23°28'S, 167°52'E, 366-560 m, 1 dd juv. – Stn DW1704, 23°45'S, 168°16'E, 400-420 m, 12 lv, 5 lv juv, 45 dd, 22 dd juv. – Sn DW1707, 23°43'S, 168°16'E, 381-493 m, 18 dd, 5 dd juv. – Stn DW1709, 23°42'S, 168°16'E, 380-389 m, 34 dd, 9 juv. – Stn DW1710, 23°44'S, 168°17'E, 386-426 m, 2 lv. – NORFOLK 2: stn CP2048, 23°44'S, 168°16'E, 380-389 m, 1 dd – Stn DW2024, 23°28'S, 167°51'E, 370-371 m, 1 lv. – Stn DW2033, 23°39'S, 167°43'E, 430-450 m, 6 lv, 3 lv juv, 3 dd, 1 dd juv. – Stn DW2049, 23°43'S, 168°15'E, 470-621 m, 1 dd. – Stn DW2052, 23°42'S, 168°15'E, 473-525 m, 1 lv, 1 dd, 2 dd juv. – Stn DW2108, 23°47'S, 168°17'E, 403-440 m, 21 dd, 6 dd juv. – Stn DW2109, 23°47'S, 168°17'E, 422-495 m, 29 dd, 7 dd juv. – Stn DW2110, 23°48'S, 168°17'E, 493-850 m, 6 lv, 3 dd, 1 dd juv. – Stn DW2132, 23°17'S, 168°14'E, 405-455 m, 1 lv, 1 lv juv. – SMIB 8: stn DW166, 23°38'S, 167°43'E, 433-450 m, 2 dd, 3 dd juv. – Stn DW167, 23°38'S, 167°43'E, 430-452 m, 2 lv, 18 lv juv, 5 dd, 3 dd juv. – Stn DW168, 23°38'S, 167°43'E, 433-450 m, 1 dd juv. – Stn DW169, 23°37'S, 167°42'E, 447-450 m, 1 dd juv. – Stn DW179, 23°46'S, 168°17'E, 400-405 m, 1 dd. – Stn DW180, 23°49'S, 168°17'E, 460-525 m, 1 dd. **Coral Sea.** MUSORSTOM 5: stn DC361, 19°52'S, 158°38'E, 400 m, 1 dd.

DISTRIBUTION — Coral Sea, Grand Passage, Ile des Pins and Norfolk Ridge, 250-493 m, alive in 371-493 m.

DESCRIPTION — Shell size typical for genus, adult size up to 12 mm; fusiform, elongate. Suture slightly incised, whorls slightly shouldered. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of 5.5-6 slightly bulbous whorls. Axial

sculpture absent. Spiral sculpture of subsutural incision on first two whorls, becoming shallower and gradually disappearing on second whorl; basal cords ventrally ranging to adapical end of columella. Outer lip thickened with small rim, smooth, bearing continuation of basal cords. Inner lip denticulate, with seven equally spaced denticles; more adapical denticles stronger. Columellar callus thickened. Parietal callus thickened. Columella typically with three, occasionally four, denticles. Siphonal canal short, open, straight. Upper teleoconch whorls yellowish beige to reddish brown in colour, later whorls beige. Teleoconch whorls typically with subsutural band of brown blotches, and pale brown band just below mid-whorl. Protoconch reddish brown, semi-translucent. Aperture and columella off-white. Operculum typical of genus, yellowish-brown, semi-translucent, with terminal nucleus. Holotype height 10.3 mm.

REMARKS — This species differs from others in the genus in the paucispiral protoconch, the single subsutural incision on the first two whorls and the shell colour.

ETYMOLOGY — Latin adjective *evanescent*, vanishing, in reference to the disappearance of the single subsutural incision after roughly two whorls; the first known *Sulcomitrella* with this feature.

Sulcomitrella imperfecta n. sp.

Figures 10G, H, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26813 and 6 (dd) paratypes MNHN IM-2000-26814-26817, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Coral Sea, Chesterfield-Bellona Plateau, 20°20'S, 158°45'E, 358-374 m [EBISCO: stn DW2574].

MATERIAL EXAMINED — **Coral Sea.** MUSORSTOM 5: stn DC379, 19°53'S, 158°39'E, 370-400 m, 1 dd, paratype MNHN IM-2000-26814. – EBISCO: stn DW2564, 20°25'S, 158°41'E, 333-386 m, 1 dd, paratype MNHN IM-2000-26815. – Stn DW2574, 20°20'S, 158°45'E, 358-374 m, 1 dd, holotype MNHN IM-2000-26813 (Figures 10G, H, P). **North of New Caledonia.** MUSORSTOM 4: stn CC175, 18°59'S, 163°17'E, 370 m, 1 dd paratype MNHN IM-2000-26816. – **BATHUS 4:** stn DW902, 19°01'S, 163°15'E, 341-351 m, 1 dd. – **PALEO-SURPRISE:** stn DW1391, 18°30'S, 163°03'E, 365 m, 1 dd. – **CONCALIS:** stn CP2957, 18°57'S, 163°16'E, 450-460 m, 1 dd juv. **New Caledonia.** **BATHUS 1:** stn DE694, 20°36'S, 164°58'E, 400-500 m, 1 dd juv. – **VAUBAN 1978-1979:** stn DR40, 22°30'S, 166°24'E, 250-350 m, 1 dd juv. **Norfolk Ridge.** **NORFOLK 2:** stn DW2136, 23°01'S, 168°23'E, 402-410 m, 3 dd, paratypes MNHN IM-2000-26817. **Loyalty Ridge.** MUSORSTOM 6: stn DW459, 21°01'S, 167°31'E, 425 m, 2 dd, 1 paratype coll. K. & D. Monsecour, 1 dd juv.

DISTRIBUTION — Coral Sea, Grand Passage, off Grande Terre, Norfolk Ridge and Loyalty Ridge, 351-450 m.

DESCRIPTION — Shell size typical for genus, adult size up to 10.5 mm; fusiform, elongate. Suture slightly incised, whorls clearly shouldered. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of five straight whorls. Axial sculpture absent. Spiral sculpture of two clear and one very weak subsutural incisions on first teleoconch whorl, gradually diminishing and becoming obsolete on subsequent whorls, with two subsutural incisions on second and third whorls and only one incision on penultimate and final whorls; basal cords ventrally ranging to adapical end of columella. Outer lip thickened with distinct rim, bearing continuation of basal cords and subsutural incision. Inner lip denticulate, with six equally spaced denticles; more adapical denticles stronger. Columellar callus thickened. Parietal callus slightly thickened. Columella with three or four denticles. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, with fine, pale orange lines extending from suture to suture, periodically merging to form blotches. Protoconch off-white. Aperture and columella off-white. Holotype height 9.8 mm.

REMARKS — This species shares a paucispiral protoconch with *Sulcomitrella evanescens* n. sp., but differs in spiral sculpture, the more shouldered whorls and the colour pattern. The shouldered shell and pale orange colour pattern are reminiscent of *Sulcomitrella aikeni* (Lussi, 2009), but this species differs in possessing a multispiral protoconch and a body whorl with incisions across its surface.

ETYMOLOGY — Latin adjective *imperfectus*, incomplete, a second *Sulcomitrella* species with subsutural incisions that diminish or disappear toward the body whorl.

Sulcomitrella imbecillis n. sp.

Figures 10I, J, Q

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26818 and 2 (dd) paratypes MNHN IM-2000-26819-26820, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Coral Sea, Nova Bank, 22°44'S, 159°22'E, 320 m [MUSORSTOM 5: stn DW298].

MATERIAL EXAMINED — Coral Sea. MUSORSTOM 5: stn DW298, 22°44'S, 159°22'E, 320 m, 1 dd, holotype MNHN IM-2000-26818 (Figures 10I, J, Q). Norfolk Ridge. NORFOLK 1: stn DW1723, 23°18'S, 168°15'E, 266-267 m, 1 dd juv. – TERRASSES: stn DW3100, 22°59'S, 168°23'E, 260-320 m, 2 dd, paratype MNHN IM-2000-26819, 1 coll. K. & D. Monsecour. Loyalty Ridge. MUSORSTOM 6: stn DW472, 21°09'S, 167°55'E, 300 m, 1 dd, paratype MNHN IM-2000-26820.

DISTRIBUTION — Coral Sea, Norfolk Ridge and Loyalty Ridge, 267-320 m.

DESCRIPTION — Shell size small for genus, adult size up to 7.9 mm; fusiform, elongate, slightly bulbous. Suture slightly incised. Protoconch paucispiral, ~1.75 smooth whorls. Teleoconch of 4.25 slightly bulbous whorls. Axial sculpture absent. Spiral sculpture of three subsutural incisions on all whorls, with adapicalmost incision most prominent; basal cords ventrally ranging to just above adapical end of columella. Outer lip thickened, bearing continuation of basal cords and subsutural incisions. Inner lip denticulate, with six equally spaced denticles; more adapical denticles stronger. Columellar callus thickened. Parietal callus thickened. Columella with three folds extending into aperture. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour, with subsutural band of pale orange blotches, almost obsolete on early whorls. Protoconch pinkish-purple. Aperture and columella off-white. Holotype height 7.3 mm.

REMARKS — This species shares a paucispiral protoconch with the New Caledonian *Sulcomitrella* described above, but differs in the smaller adult size, the spiral sculpture, the columellar folds extending into the aperture and the colour pattern.

ETYMOLOGY — Latin adjective *imbecillis*, weak, in reference to the weak subsutural incisions.

Sulcomitrella alisiensis n. sp.

Figures 10K, L, R

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26821 and 1 (dd) paratype MNHN IM-2000-26822 (as listed below).

TYPE LOCALITY — New Caledonia, off Noumea, 22°35'S, 166°27'E, 465-525 m [BATHUS 2: stn DW739].

MATERIAL EXAMINED — New Caledonia. BATHUS 2: stn DW739, 22°35'S, 166°27'E, 465-525 m, 1 dd, holotype MNHN IM-2000-26821 (Figures 10K, L, R). — Stn CP760, 22°19'S, 166°11'E, 455 m, 1 dd, paratype MNHN IM-2000-26822.

DISTRIBUTION — New Caledonia, 455-465 m.

DESCRIPTION — Shell size typical for genus, adult size up to 9.1 mm; fusiform, elongate, slightly bulbous. Suture slightly incised, whorls shouldered. Protoconch paucispiral, *ca.* two smooth whorls. Teleoconch of 4.75 slightly bulbous whorls. Axial sculpture absent. Spiral sculpture of three clear subsutural incisions, and several additional weak to almost obsolete incisions on all whorls; basal cords ventrally ranging to upper edge of parietal callus, diminishing in strength adapically from mid-parietal height. Outer lip thickened, bearing continuation of basal cords and incisions. Inner lip denticulate, with six strong, equally spaced denticles. Columellar callus thickened. Parietal callus thickened. Columella with five denticles; three adapicalmost denticles extending into aperture. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour. Protoconch off-white. Aperture and columella off-white. Holotype height 9.1 mm.

REMARKS — This species is similar to *Sulcomitrella imperfecta* n. sp., but differs in the number of protoconch whorls, the basal cords which extend to the upper edge of the parietal callus, and the columellar denticles and incisions distributed across the surface of the whorls.

ETYMOLOGY — Adjective formed from the research vessel *Alis*, on board of which the material was collected.

Genus **PLEURIFERA** Drivas & Jay, 1997

Pleurifera suzannae (Drivas & Jay, 1990)

Figures 11A-D, K, L, N

Mitrella suzannae Drivas & Jay, 1990: 178-180, fig. 26.

Pleurifera suzannae — Drivas & Jay 1997a: 34-35, fig. 24.

MATERIAL EXAMINED — Coral Sea. EBISCO: stn DW2603, 19°36'S, 158°43'E, 568-570 m, 2 dd. — Stn DW2629, 21°06'S, 160°46'E, 569-583 m, 1 dd. — MUSORSTOM 5: stn DW340, 19°48'S, 158°41'E, 675-680 m, 1 dd. **New Caledonia**. BATHUS 1: stn DW687, 20°35'S, 165°07'E, 408-440 m, 1 lv, 3 dd (1 coll. K. & D. Monsecour). **Norfolk Ridge**. BIOCAL stn DW48, 23°00'S, 167°29'E, 775 m, 1 dd — BERYX 11: stn. DW09, 24°52'S, 168°22'E, 630-680 m, 1 dd juv. — Stn DW10, 24°53'S, 168°21'E, 560-600 m, 1 dd. — Stn DW35, 23°33'S, 167°16'E, 550-570 m, 1 dd. — SMIB 8: stn DW146-147, 24°55'S, 168°22'E, 508-532 m, 1 dd — NORFOLK 1: stn DW1732, 23°20'S, 168°16'E, 347-1063 m, 1 dd juv. **Loyalty Ridge**. BIOCAL: stn DW08, 20°35'S, 166°54'E, 435 m, 1 dd juv. — Stn KG06, 20°35'S, 166°53'E, 735 m, 1 dd juv. — BIOGEOCAL: stn DW291, 20°34'S, 166°54'E, 510-520 m, 3 dd. — MUSORSTOM 6: stn DW468, 21°06'S, 167°33'E, 600 m, 1 dd juv.

DISTRIBUTION —New Caledonia: Coral Sea, off east coast of Grande Terre, Ile des Pins, Norfolk Ridge, Loyalty Ridge, 435-775 m. South-West Indian Ocean: Glorieuses Islands, Réunion, Mauritius, 460-830 m;

REMARKS — The first record of this species from the New Caledonia region. *Pleurifera suzannae* was described from the Marion-Dufresne expedition north off Réunion (20°51'S, 55°39'E). Drivas & Jay (1990) also reported it from Mauritius and the Glorieuses Islands (1997a). The present material represents a considerable range extension to the east of this species with multispiral protoconch, thus inferred to have good dispersal capacities.

Pleurifera tenuilabris n. sp.

Figures 11E, F, O

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-25122 and 4 (dd) paratypes MNHN IM-2000-26823-26825, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, Loyalty Basin, 20°36'S, 167°00'E, 830-840 m [BIOGEOCAL: stn DW289].

MATERIAL EXAMINED — New Caledonia. BIOGEOCAL: stn DW289, 20°36'S, 167°00'E, 830-840 m, 4 dd, holotype MNHN IM-2000-25122 (Figures 11E, F, O) and 2 paratypes MNHN IM-2000-26823, 1 coll. K. & D. Monsecour. Norfolk Ridge. BATHUS 3: stn DW780, 24°46'S, 170°07'E, 850-855 m, 1 dd, paratype MNHN IM-2000-26824. – Stn DW786, 23°54'S, 169°49'E, 699-715 m, 1 dd, paratype MNHN IM-2000-26825.

DISTRIBUTION — Loyalty Basin and Norfolk Ridge, 715-850 m.

DESCRIPTION — Shell size typical for genus, adult size up to 8.9 mm; fusiform, elongate. Suture straight. Protoconch multispiral, 3.5 whorls, with fine axial ribs. Teleoconch of 5.5-5.75 whorls. Axial sculpture on two uppermost whorls consisting of strong axial riblets, diminishing in strength and disappearing from third whorl onwards. Spiral sculpture of basal cords, ventrally ranging to adapical edge of columella. Outer lip slightly thickened, smooth, bearing continuation of basal cords. Inner lip denticulate, with eight to nine equally spaced denticles of equal strength. Columellar callus marked by distinct rim along siphonal canal. Parietal callus absent or very weak. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls completely off-white in colour. Protoconch pale pinkish. Aperture and columella off-white. Holotype height 7.9 mm.

REMARKS — *Pleurifera tenuilabris* n. sp. stands apart from *P. suzannae* in the more elongate shell, greater number of teleoconch whorls, more prominent axial sculpture and the absence of any spiral sculpture.

ETYMOLOGY — Adjectival epithet formed from the Latin adjective *tenuis*, thin, and noun *labrum*, lip; the only *Pleurifera* without a thickened rim on the outer lip.

Pleurifera lepida n. sp.

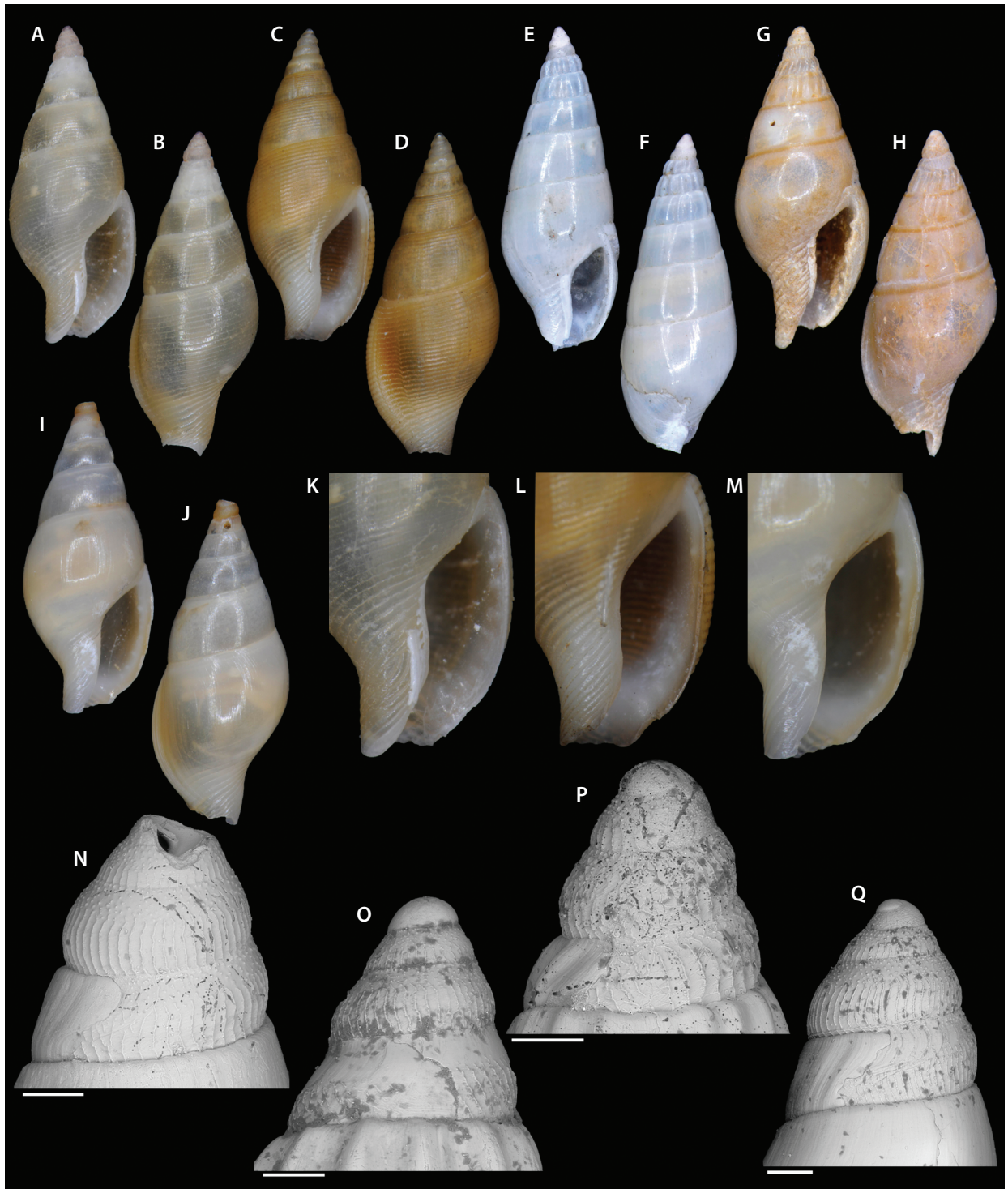
Figures 11G, H, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-25121 and 2 (dd) paratypes MNHN IM-2000-26827-26828, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — New Caledonia, east coast off Canala, 21°17'S, 165°57'E, 237-298 m [BATHUS 1: stn DW654].

FIGURE 11

Pleurifera suzannae (Drivas & Jay, 1990); **A**, holotype (8.4 mm), MNHN IM-2000-22695, Marion-Dufresne MD32 Réunion, stn DC134, 650-750 m; **B**, dorsal view of holotype; **K**, aperture detail of holotype; **C**, shell (6.9 mm), Coral Sea, EBISCO stn DW2603, 568-570 m; **D**, dorsal view; **L**, aperture detail; **N**, protoconch of shell (6.8 mm), New Caledonia, BATHUS 1 stn DW687, 408-440 m. *Pleurifera tenuilabris* n. sp.; **E**, holotype (7.9 mm) MNHN IM-2000-25122, New Caledonia, BIOGEOCAL stn DW289, 830-840 m; **F**, dorsal view of holotype; **O**, protoconch. *Pleurifera lepida* n. sp.; **G**, holotype (5.7 mm) MNHN IM-2000-25121, New Caledonia, BATHUS 1 stn DW654, 237-298 m; **H**, dorsal view of holotype; **P**, protoconch. *Pleurifera fulgens* n. sp.; **I**, holotype (9.5 mm) MNHN IM-2000-25119, New Caledonia, TERRASSES stn DW3041, 800-840 m; **J**, dorsal view of holotype; **M**, aperture detail; **Q**, protoconch of paratype (5.0 mm), MNHN IM-2000-26829, New Caledonia, HALIPRO 2 stn BT71, 820-1120 m.



MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn DW654, 21°17'S, 165°57'E, 237-298 m, 1 dd, holotype MNHN IM-2000-25121 (Figures 11G, H, P). — BIOGEOCAL: stn DW253, 21°32'S, 166°29'E, 310-315 m, 2 dd, paratypes MNHN IM-2000-26827, coll. K. & D. Monsecour. **Loyalty Ridge**. BIOGEOCAL: stn DW307, 20°35'S, 166°55'E, 470-480 m, 1 dd, paratype MNHN IM-2000-26828.

DISTRIBUTION — East coast of New Caledonia and Loyalty Ridge, 298-470 m.

DESCRIPTION — Shell of rather small size for genus, adult size up to 5.7 mm (holotype); fusiform, elongate. Suture straight. Protoconch multispiral, 3.5 whorls with fine axial ribs. Teleoconch of 4-4.25 whorls. Axial sculpture on two uppermost whorls of strong axial riblets, diminishing in strength and completely disappearing from third teleoconch whorl onwards. Spiral sculpture of very weak spiral grooves; basal cords ventrally ranging to adapical edge of columella. Outer lip thickened, with distinct axial rim, bearing continuation of spiral sculpture and basal cords. Inner lip denticulate, with seven equally spaced denticles of equal strength. Columellar callus marked by distinct rim along siphonal canal. Parietal callus absent or very weak. Columella with five to seven denticles. Siphonal canal relatively long for genus, open, slightly recurved. Teleoconch whorls off-white to pale beige in colour with thin brown subsutural band and brown flammules on final whorl. Protoconch off-white to beige. Aperture and columella off-white.

REMARKS — *Pleurifera lepida* n. sp. is the smallest representative of the genus (adult size up to 5.7 mm). It stands apart from *P. suzannae* in the smaller teleoconch, denticles on the columella, less prominent spiral sculpture, more prominent axial sculpture on early teleoconch whorls, narrower aperture, longer siphonal canal and brown subsutural band. Differences with *P. tenuilabris* n. sp. include the smaller teleoconch, less elongate overall shape, narrower aperture, longer siphonal canal, denticles on the columella, thickened rim on the outer lip, and brown subsutural band.

ETYMOLOGY — Latin adjective *lepidus*, elegant, in reference to the narrow, elegant shape of the aperture and siphonal canal.

Pleurifera fulgens n. sp.

Figures 11I, J, M, Q

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-25119 and 2 (dd) paratypes MNHN IM-2000-26829-26830 (as listed below).

TYPE LOCALITY — New Caledonia, Norfolk Ridge, 23°59'S, 169°44'E, 800-840 m [TERRASSES: stn DW3041].

MATERIAL EXAMINED — Norfolk Ridge. HALIPRO 2: stn BT71, 24°52'S, 168°11', 820-1220 m, 1 dd juv, paratype MNHN IM-2000-26829. — TERRASSES: stn DW3041, 23°59'S, 169°44'E, 800-840 m, 1 dd, holotype MNHN IM-2000-25119 (Figures 11I, J, M, Q). **Loyalty Ridge**. MUSORSTOM 6: stn DW416, 20°42'S, 167°00'E, 343 m, 1 dd juv, paratype MNHN IM-2000-26830.

DISTRIBUTION — Norfolk Ridge and Loyalty Ridge, 343-820 m.

DESCRIPTION — Shell rather large for genus, semi-translucent, adult size up to 9.5 mm (holotype); fusiform, bulbously elongate. Suture straight, with distinct subsutural rim. Protoconch multispiral, 3.5 whorls with fine axial ribs. Teleoconch of 4.5-4.75 whorls. Axial sculpture of very fine growth lines. Spiral sculpture of basal cords, ranging to adapical edge of columella; four to five weaker adapical basal cords ranging to mid-parietal height. Outer lip thickened, with distinct axial rim, bearing continuation of basal cords. Inner lip thickened, denticulate, with 10-12 equally spaced denticles, diminishing in strength abapically. Columellar callus slightly thickened, not demarcated. Parietal callus absent or very

weak. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls beige in colour. Protoconch somewhat darker beige. Aperture and columella off-white to pale beige.

REMARKS — *Pleurifera fulgens* n. sp. is set apart from all congeners by the distinct subsutural rim in combination with the lack of both spiral and axial sculpture. Additional differences include the adapical cords ranging to mid-parietal height, the absence of the columellar rim and the thinner, semi-translucent shell.

ETYMOLOGY — Latin adjective *fulgens*, polished, shining, in reference to the reduced spiral and axial sculpture on the teleoconch.

Genus **ZEMITRELLA** Finlay, 1926

Zemitrella epicroca n. sp.

Figures 13E, F

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26831 and 1 (dd) paratype MNHN IM-2000-26832 (as listed below).

TYPE LOCALITY — West coast of New Caledonia, off Noumea, 22°23'S, 166°13'E, 577-780 m [BATHUS 2: stn DW754].

MATERIAL EXAMINED — New Caledonia. BATHUS 1: stn DE700, 20°57'S, 165°35'E, 160-222 m, 1 dd juv, paratype MNHN IM-2000-26832. – BATHUS 2: stn DW754, 22°23'S, 166°13'E, 577-780 m, 1 dd, holotype MNHN IM-2000-26831 (Figures 13E, F).

DISTRIBUTION — New Caledonia, 222-577 m.

DESCRIPTION — Shell of minute size for genus, adult size up to 1.9 mm; fusiform, bulbously elongate. Suture slightly impressed. Protoconch paucispiral, ~1.4 smooth whorls. Teleoconch of 2.75 whorls. Axial sculpture absent. Spiral sculpture of basal cords, sloping strongly downwards, ventrally ranging to adapical edge of columella. Outer lip slightly thickened, with weak rim, smooth. Inner lip smooth. Columellar callus absent. Parietal callus absent. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls translucent, almost transparent, pale white in colour, with thin white band at mid-whorl. Protoconch white. Aperture and columella white. Holotype height 1.9 mm.

REMARKS — *Zemitrella epicroca* n. sp. is unique in the smooth, almost transparent shell, the sloping basal cords and the thin white band at mid-whorl. The species displays some affinities with *Z. finlayi* Powell, 1933 and *Z. benthicola* Dell, 1956, but the generic placement is considered to be only tentative.

ETYMOLOGY — Latin adjective *epicrocus*, transparent, in reference to the almost transparent shell.

Zemitrella tenuicostata n. sp.

Figures 13G, H

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26833 and 7 (dd) paratypes MNHN IM-2000-26834, 1 (dd) coll. K. & D. Monsecour.

TYPE LOCALITY — New Caledonia, south of Ile des Pins, 23°09'S, 167°27'E, 1004-1109 m [NORFOLK 2: stn DW2144].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — New Caledonia, south of Ile des Pins.

DESCRIPTION — Shell size typical for genus, adult size up to 5.7 mm; fusiform, elongate. Suture slightly incised. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of *ca.* four whorls. Axial sculpture of over 30 fine, close-set riblets. Spiral sculpture absent. Outer lip simple. Inner lip smooth. Columellar callus thickened. Parietal callus thinner than columellar callus. Columella smooth. Siphonal canal very short, open, straight. Teleoconch whorls off-white in colour. Protoconch semi-translucent, white. Aperture and columella white. Holotype height 5.6 mm.

REMARKS — This species is most similar to *Zemitrella sericea* Powell, 1937, but differs in its larger size, absence of spiral sculpture, and more rounded aperture.

ETYMOLOGY — Latin adjectives *tenuis*, thin, and *costatus*, ribbed, in reference to the numerous, fine axial ribs.

Genus *AOTEATILIA* Powell, 1939

Aoteatilia caledonica n. sp.

Figures 13I, J

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26835 and 1 (dd) paratype MNHN IM-2000-26836 (as listed below).

TYPE LOCALITY — New Caledonia, south of Ile des Pins, 22°59'S-23°00'S, 168°19'E-168°22'E, 500-558 m [SMIB 8: stn DW193-196].

MATERIAL EXAMINED — New Caledonia. SMIB 3: stn DW22, 23°03'S, 167°19'E, 503 m, 1 dd juv, paratype MNHN IM-2000-26836. – SMIB 8: stn DW193-196, 22°59'S-23°00'S, 168°19'E-168°22'E, 500-558 m, 1 dd, holotype MNHN IM-2000-26835 (Figures 13I, J).

DISTRIBUTION — New Caledonia, ~503 m.

DESCRIPTION — Shell size typical for genus, adult size up to 4.5 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch consisting of *ca.* 3.25 whorls. Axial sculpture of weak axial riblets on first whorl and first half of second whorl. Spiral sculpture of broad, flattened spiral cords with narrow interspaces, lacking on first whorl, with eight cords on second and penultimate whorls and 16 cords on final whorl; continuing as basal cords. Outer lip thickened with small rim, bearing continuation of spiral sculpture. Inner lip smooth. Columellar callus thin. Parietal callus thin. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls semi-translucent, off-white in colour. Protoconch semi-translucent, off-white. Aperture and columella off-white. Holotype height 4.5 mm.

REMARKS — This species stands apart from all congeners in possessing fewer spiral cords and axial sculpture on the early teleoconch whorls.

ETYMOLOGY — Adjective formed from the type locality, New Caledonia; the first member of the genus from the New Caledonia region.

Genus *RETIZAFRA* Hedley, 1913

Retizafra brevilata n. sp.

Figures 12A, B, M

TYPE MATERIAL — Holotype MNHN (lv) IM-2000-26837 and 8 (lv) paratypes MNHN IM-2000-26838, 2 (lv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Norfolk Ridge, 23°40'S, 167°45'E, 470 m [CHALCAL 2: stn DW76].

MATERIAL EXAMINED — New Caledonia. BLOCAL: stn DW38, 23°00'S, 167°15'E, 360 m, 1 dd. — Stn DW77, 22°16'S, 167°15'E, 440 m, 3 dd. — SMIB 3: stn DW22, 23°03'S, 167°19'E, 503 m, 1 dd. **Norfolk Ridge.** CHALCAL 2: stn DW76, 23°40'S, 167°45'E, 470 m, 67 lv, holotype MNHN IM-2000-26837 and 8 paratypes MNHN IM-2000-26838, 2 coll. K. & D. Monsecour, 3 dd, 9 lv juv, 10 dd juv. — NORFOLK 1: stn DW1666, 23°42'S, 167°44'E, 469-860 m, 2 dd juv. — Stn DW1704, 23°45'S, 168°16'E, 400 m, 1 dd juv. — Stn DW1723, 23°18'S, 168°15'E, 266-267 m, 3 dd, 1 dd juv. — Stn DW1724, 23°17'S, 168°14'E, 200-291 m, 9 dd, 6 dd juv. — Stn DW1727, 23°17'S, 168°14'E, 190-212 m, 2 lv, 8 dd, 16 dd juv. — NORFOLK 2: stn DW2033, 23°39'S, 167°43'E, 430-450 m, 20 dd, 5 dd juv. — Stn DW2123, 23°18'S, 168°15'E, 187-197 m, 43 dd, 12 dd juv. — SMIB 8: stn DW166, 23°38'S, 167°43'E, 433-450 m, 2 lv, 15 dd, 14 dd juv. — Stn DW167, 23°38'S, 167°43'E, 430-452 m, 13 lv, 62 dd, 4 lv juv, 97 dd juv. — Stn DW169, 23°37'S, 167°42'E, 447-450 m, 2 lv, 26 dd, 3 lv juv, 17 dd juv.

DISTRIBUTION — South of New Caledonia and Norfolk Ridge, 197-503 m, alive in 212-470 m.

DESCRIPTION — Shell size typical for genus, adult size up to 5.5 mm; fusiform, elongate. Whorls slightly shouldered. Protoconch paucispiral, ~1.25 smooth whorls. Teleoconch of 3.75-4 whorls. Axial sculpture of 17-18 strong ribs on all whorls. Spiral sculpture of flattened, low spiral cords with narrower interspaces, with nine to ten cords on spire whorls and 17-18 cords on final whorl; subsutural cord more pronounced. Basal cords difficult to distinguish from spiral cords, ventrally ranging to just below adapical edge of columella. Outer lip slightly thickened, bearing continuation of spiral sculpture. Inner lip denticulate, with five to six denticles, diminishing in strength abapically. Columellar callus thickened. Parietal callus very weak. Columella with row of merged denticles. Siphonal canal short, open, slightly recurved. Teleoconch whorls semi-translucent, off-white or pale salmon in colour. Protoconch off-white with pale brown. Aperture and columella off-white. Operculum typical of genus, pale brown, semi-translucent, with terminal nucleus. Holotype height 4.8 mm.

REMARKS — This species is most similar to *Retizafra multicostata* (May, 1911), a southern Australian (New South Wales and Tasmania) congener with very similar axial and spiral sculpture. *Retizafra multicostata* n. sp. differs in its larger size (up to 6.5 mm), smoothly rounded, not shouldered whorls, more elegant shape and smooth columella.

ETYMOLOGY — Latin adjectives *brevis*, short, and *latus*, broad, in reference to the main distinguishing features in comparison with *Retizafra multicostata*.

Retizafra oryza n. sp.

Figures 12C, D, N

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26839 and 8 (lv & dd) paratypes MNHN IM-2000-26840-26841, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Norfolk Ridge, 23°41'S, 168°16'E, 383-408 m [BATHUS 3: stn CP811].

MATERIAL EXAMINED — New Caledonia. NORFOLK 1: stn DW1733, 22°56'S, 167°15'E, 427-433 m, 1 lv, 1 dd. Norfolk Ridge. BATHUS 3: stn CP811, 23°41'S, 168°16'E, 383-408 m, 1 lv, holotype MNHN IM-2000-26839 (Figures 12C, D, N). — Stn DW818, 23°44'S, 168°16'E, 394-401 m, 1 lv, paratype MNHN IM-2000-26840. — NORFOLK 1: stn DW1667, 23°40'S, 168°01'E, 237-250 m, 1 dd. — Stn DW1723, 23°18'S, 168°15'E, 266-267 m, 7 dd, paratypes MNHN IM-2000-26841. — Stn DW1727, 23°17'S, 168°14'E, 190-212 m, 5 dd, 1 paratype coll. K. & D. Monsecour — SMIB 8: stn DW182-184, 23°18'S-23°19'S, 168°05'E, 305-330 m, 5 dd, 1 dd juv. — Stn DW190, 23°18'S, 168°05'E, 305-310 m, 1 lv, 1 dd.

DISTRIBUTION — South of New Caledonia and Norfolk Ridge, 212-427 m, alive in 310-427 m.

DESCRIPTION — Shell size typical for genus, adult size up to 2.8 mm; fusiform, elongate. Whorls slightly shouldered. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of 2.75-3 whorls. Axial sculpture of 16-17 strong ribs on all whorls. Spiral sculpture of flattened, low spiral cords with broader interspaces, with three to four cords on spire whorls and eight to nine cords on final whorl; basal cords ventrally ranging to just below adapical edge of columella. Outer lip slightly thickened, bearing continuation of spiral sculpture. Inner lip denticulate, with five to six denticles, diminishing in strength abapically. Columellar callus slightly thickened. Parietal callus very weak. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls semi-translucent, pale salmon in colour. Protoconch white. Aperture and columella off-white. Holotype height 2.6 mm.

REMARKS — This species is similar to *Retizafra gemmulifera* (Hedley, 1907), the type species of the genus, but differs in its smooth protoconch, more bulbous shell, weaker spiral cords, broader aperture and colour pattern.

ETYMOLOGY — Latin noun *oryza*, grain of rice, used as a noun in apposition, in reference to the small size of the species.

***Retizafra hordeum* n. sp.**

Figures 12E, F

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26842.

TYPE LOCALITY — New Caledonia, between Ile des Pins and Grand Récif Sud, 22°44'S, 167°17'E, 350-393 m [BATHUS 2: stn DW717].

MATERIAL EXAMINED — Known only from the holotype.

DISTRIBUTION — New Caledonia, between Ile des Pins and Grand Récif Sud.

FIGURE 12

Retizafra brevilata n. sp.; **A**, holotype (4.8 mm) MNHN IM-2000-26837, New Caledonia, CHALCAL 2 stn DW76, 470 m; **B**, dorsal view of holotype; **M**, aperture detail. *Retizafra oryza* n. sp.; **C**, holotype (2.6 mm) MNHN IM-2000-26839, New Caledonia, BATHUS 3 stn CP811, 383-408 m; **D**, dorsal view of holotype; **N**, aperture detail. *Retizafra hordeum* n. sp.; **E**, holotype (2.6 mm) MNHN IM-2000-26842, New Caledonia, BATHUS 2 stn DW717, 350-393 m; **F**, dorsal view of holotype. *Retizafra bulbacea* n. sp.; **G**, holotype (6.2 mm) MNHN IM-2000-26843, New Caledonia, SMIB 8 stn DW182-184, 305-330 m; **H**, dorsal view of holotype; **O**, aperture detail. *Retizafra mitromorpha* n. sp.; **I**, holotype (4.1 mm) MNHN IM-2000-26846, New Caledonia, NORFOLK 2 stn DW2033, 460-450 m; **J**, dorsal view of holotype; **P**, aperture detail. *Retizafra rotundata* n. sp.; **K**, holotype (4.6 mm) MNHN IM-2000-26849, New Caledonia, BIOCAL stn DW83, 460 m; **L**, dorsal view of holotype; **Q**, aperture detail.



DESCRIPTION — Shell size typical for genus, adult size of holotype 2.6 mm; fusiform, elongate. Suture slightly impressed, whorls strongly shouldered. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of 2.75 whorls. Axial sculpture of 11-12 strong ribs, with wider interspaces, on all whorls. Spiral sculpture of flattened, low, spiral cords, with three to four cords on spire whorls and eight cords on final whorl. Low, rounded knobs forming at intersection of spiral and axial sculpture, producing reticulate appearance. Basal cords ventrally ranging to just below adapical edge of columella. Outer lip slightly thickened, bearing continuation of spiral sculpture. Inner lip denticulate, with six denticles, diminishing in strength abapically. Columellar callus thin. Parietal callus weak. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour. Protoconch white. Aperture and columella white.

REMARKS — This species is similar to *Retizafra gemmulifera* (Hedley, 1907), the type species of the genus, but differs in its smooth protoconch, more bulbous shell, broader aperture, position of the axial ribs with broader interspaces and weaker spiral cords. It differs from *Retizafra oryza* n. sp. in possessing fewer axial ribs, a more reticulate sculpture, and more shouldered whorls with an incised suture.

ETYMOLOGY — Latin noun, *hordeum*, grain of barley, with reference to the small size of this species; used as a noun in apposition.

Retizafra bulbacea n. sp.

Figures 12G, H, O

TYPE MATERIAL — Holotype MNHN (lv) IM-2000-26843 and 9 (lv & dd) paratypes MNHN IM-2000-26844-26845, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Norfolk Ridge, 23°18'S, 168°05'E, 305-330 m [SMIB 8: stn DW182-184].

MATERIAL EXAMINED — Norfolk Ridge. BATHUS 3: stn CP804, 23°41'S, 168°00'E, 244-278 m, 3 dd, 1 paratype coll. K. & D. Monsecour. — BERYX 11: stn CH41, 23°39'S, 168°00'E, 230-360 m, 2 dd. — SMIB 8: stn DW182-184, 23°18'S, 168°05'E, 305-330 m, 4 lv, 2 dd, holotype MNHN IM-2000-26843 (Figures 12G, H, O) and 5 paratypes MNHN IM-2000-26844. — Stn DW190, 23°18'S, 168°05', 305-310 m, 1 lv, 3 dd, paratypes MNHN IM-2000-26845, 1 dd juv.

DISTRIBUTION — Norfolk Ridge, 278-305 m, alive in ~310 m.

DESCRIPTION — Shell large for genus, adult size up to 6.6 mm; fusiform, elongate. Suture impressed. Protoconch paucispiral, ~1.6 bulbous whorls, broader than first teleoconch whorls, smooth. Teleoconch of 4.25 whorls. Axial sculpture of 11-12 strong ribs, with equally wide interspaces, on all whorls. Spiral sculpture of broad, flattened spiral cords, with four to five cords on spire whorls and nine to ten cords on final whorl. Flattened knobs forming at intersection of spiral and axial sculpture, producing slightly reticulate appearance. Basal cords ventrally ranging to adapical edge of columella. Outer lip thickened, bearing continuation of spiral sculpture. Inner lip denticulate, with four denticles, diminishing in strength abapically. Columellar callus thickened, with minute rim. Parietal callus weak. Columella with three partially merged denticles. Siphonal canal short, open, straight. Teleoconch whorls pale brown in colour, with white band just above suture on upper teleoconch whorls and at mid-whorl on final whorl. Protoconch white. Aperture and columella white. Operculum semi-translucent, pale brown, with terminal nucleus. Holotype height 6.2 mm.

REMARKS — This species can only be confused with *Retizafra multicosata* (May, 1911) owing to the similar adult size, but is readily distinguished by the more bulbous protoconch and unique sculpture with fewer axial ribs, fewer spiral ribs and fewer denticles on the inner lip and the columella.

ETYMOLOGY — Latin adjective *bulbaceus*, bulbous, in reference to the very bulbous protoconch.

***Retizafra mitromorpha* n. sp.**

Figures 12I, J, P

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26846 and 3 (lv & dd) paratypes MNHN IM-2000-26847-26848, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Norfolk Ridge, 23°39'S, 167°43'E, 430-450 m [NORFOLK 2: stn DW2033].

MATERIAL EXAMINED — Norfolk Ridge. BATHUS 3: stn DW807, 23°40'S, 167°59'E, 420-438 m, 1 dd, paratype MNHN IM-2000-26847. — Stn DW809, 23°39'S, 167°59'E, 650-730 m, 1 dd. — NORFOLK 1: stn DW1732, 23°20'S, 168°16'E, 347-1063 m, 4 dd, 1 paratype coll. K. & D. Monsecour. — NORFOLK 2: stn DW2033, 23°39'S, 167°43'E, 430-450 m, 1 lv, holotype MNHN IM-2000-26846 (Figures 12I, J, P), 1 dd. — Stn DW2036, 23°38'S, 167°39'E, 571-610 m, 1 lv, 1 dd, paratypes MNHN IM-2000-26848.

DISTRIBUTION — Norfolk Ridge, 438-650 m, alive in 450-571 m.

DESCRIPTION — Shell size typical for genus, adult size up to 4.8 mm; fusiform, elongate. Suture incised. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of 3.3 whorls. Axial sculpture of 11-12 thin, rounded ribs on upper teleoconch whorls and 14-15 ribs on final whorl; interspaces of equal size, except final four closely spaced ribs. Spiral sculpture of four cords on spire whorls and ten cords on final whorl. Rounded knobs forming at intersection of spiral and axial sculpture, producing reticulate appearance. Basal cords ventrally ranging to adapical edge of columella. Outer lip slightly thickened, bearing faint continuation of spiral sculpture. Inner lip denticulate, with seven denticles, diminishing in strength abapically. Columellar callus thickened, without rim. Parietal callus thickened. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white in colour with pale brown blotches just below suture on alternating ribs. Protoconch semi-translucent, white. Aperture and columella white. Holotype height 4.1 mm.

REMARKS — This species is most similar to *Retizafra plexa* (Hedley, 1902), but differs in its incised suture, more slender overall shape and aperture, stronger and fewer axial ribs and colour pattern.

ETYMOLOGY — From the generic name *Mitromorpha*, to recall the general resemblance of this shell to the conoidean genus.

***Retizafra rotundata* n. sp.**

Figures 12K, L, Q

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26849 and 2 (dd) paratypes MNHN IM-2000-26850, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Loyalty Ridge, between Lifou and Ouvéa, 20°35'S, 166°54'E, 460 m [BIOCAL: stn DW83].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW914, 18°49'S, 163°15'E, 600-616 m, 2 dd, paratypes MNHN IM-2000-26850, 4 dd juv, 1 paratype coll. K. & D. Monsecour. **Loyalty Ridge**. BIOCAL: stn DW83, 20°35'S, 166°54'E, 460 m, 1 dd, holotype MNHN IM-2000-26849 (Figures 12K, L, Q).

DISTRIBUTION — Grand Passage and Loyalty Ridge, 460-600 m.

DESCRIPTION — Shell size typical for genus, adult size up to 5.2 mm; fusiform, bulbously elongate. Suture impressed. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of 3.75 whorls. Axial sculpture of 18-20 close-set, rounded ribs, with narrow interspaces, on all whorls. Spiral sculpture absent on first two whorls, weak from third whorl, becoming stronger from final quarter of penultimate whorl, clearly visible on final whorl; consisting of nine narrow incisions on penultimate whorl and 14 incisions on final whorl. Basal cords ventrally ranging to adapical edge of columella. Outer lip thickened, bearing continuation of spiral sculpture. Inner lip denticulate, with five weak denticles. Columellar callus thickened, without rim. Parietal callus weak. Columella with thickened rim. Siphonal canal short, open, straight. Teleoconch whorls off-white to cream in colour with pale, yellowish-brown subsutural band. Protoconch semi-translucent, cream. Aperture and columella off-white. Holotype height 4.6 mm.

REMARKS — This species is most similar to *Retizafra plexa* (Hedley, 1902), but differs in its more bulbous shape, weaker spiral sculpture, weaker denticles and colour pattern.

ETYMOLOGY — Latin adjective *rotundatus*, rounded, in reference to the bulbously elongate shape of the shell.

Retizafra zingiber n. sp.

Figures 13A, B, O

TYPE MATERIAL — Holotype MNHN (dd) IM-2000-26851 and 9 (dd) paratypes MNHN IM-2000-26852-26854, 1 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — North of New Caledonia, Grand Passage, 18°56'S, 163°22'E, 444-452 m [BATHUS 4: stn DW927].

MATERIAL EXAMINED — North of New Caledonia. BATHUS 4: stn DW914, 18°49'S, 163°15'E, 600-616 m, 7 dd, 6 paratypes MNHN IM-2000-26852, 1 coll. K. & D. Monsecour. – Stn DW927, 18°56'S, 163°22'E, 444-452 m, 2 dd, holotype MNHN IM-2000-26851 (Figures 13A, B, O) and paratype MNHN IM-2000-26853. – MUSORSTOM 4: stn DW161, 18°39'S, 163°11'E, 565 m, 2 dd, paratypes MNHN IM-2000-26854.

DISTRIBUTION — North of New Caledonia, 452-600 m.

FIGURE 13

Retizafra zingiber n. sp.; **A**, holotype (3.4 mm) MNHN IM-2000-26851, New Caledonia, BATHUS 4 stn DW927, 444-452; **B**, dorsal view of holotype; **O**, aperture detail. *Retizafra cryptheliae* n. sp.; **C**, holotype (4.6 mm) MNHN IM-2000-26855, New Caledonia, NORFOLK 1 stn DW1723, 266-267 m; **D**, dorsal view of holotype; **P**, aperture detail. *Zemitrella epicroca* n. sp.; **E**, holotype (1.9 mm) MNHN IM-2000-26831, New Caledonia, BATHUS 2 DW754, 577-780 m; **F**, dorsal view of holotype. *Zemitrella tenuicostata* n. sp.; **G**, holotype (5.6 mm) MNHN IM-2000-26833, New Caledonia, NORFOLK 2 stn DW2144, 1004-1109 m; **H**, dorsal view of holotype. *Aoteatilia caledonica* n. sp.; **I**, holotype (4.5 mm) MNHN IM-2000-26835, New Caledonia, SMIB 8 stn DW193-196, 500-558 m; **J**, dorsal view of holotype. *Seminella corrugata* n. sp.; **K**, holotype (3.1 mm) MNHN IM-2000-25124, New Caledonia, SMIB 8 stn DW146-147, 508-532 m; **L**, dorsal view of holotype; **Q**, protoconch. *Seminella biconica* n. sp.; **M**, holotype (3.2 mm) MNHN IM-2000-25123, New Caledonia, BATHUS 2 stn DW730, 397-400 m; **N**, dorsal view of holotype; **R**, protoconch.



DESCRIPTION — Shell small for genus, adult size up to 3.6 mm; fusiform, bulbously elongate. Suture straight, whorls slightly shouldered. Protoconch paucispiral, slightly less than 1.5 whorls, smooth. Teleoconch of three whorls. Axial sculpture of *ca.* 13 rounded ribs on all whorls, interspaces slightly broader than ribs. Spiral sculpture almost obsolete on first whorl, of six to seven weak cords on second whorl and 12-13 strong cords on body whorl. Basal cords, difficult to distinguish from spiral cords, ventrally ranging to just above adapical edge of columella. Outer lip thickened, with strong rim, bearing continuation of spiral sculpture. Inner lip thickened, denticulate, with five denticles; adapicalmost denticle stronger. Columellar callus thickened, without rim. Parietal callus thickened, thinner than columellar callus. Columella with thickened rim of merged denticles. Siphonal canal short, open, slightly recurved. Teleoconch whorls creamy orange in colour. Protoconch creamy orange. Aperture and columella off-white. Holotype height 3.4 mm.

REMARKS — This species is most similar to *Retizafra intricata* (Hedley, 1912), but differs in its much smaller adult size, size of the protoconch, rim on the outer lip, fewer denticles on the inner lip, columellar rim, number of teleoconch whorls and colour pattern.

ETYMOLOGY — Latin *zingiber*, ginger, in reference to the colour of the shell; used as a noun in apposition.

***Retizafra cryptheliae* n. sp.**

Figures 13C, D, P

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26855 and 4 (dd) paratypes MNHN IM-2000-26856, 1 (dd juv) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Norfolk Ridge, Crypthelia Seamount, 23°18'S, 168°15'E, 266-267 m [NORFOLK 1: stn DW1723].

MATERIAL EXAMINED — Norfolk Ridge. NORFOLK 1: stn DW1723, 23°18'S, 168°15'E, 266-267 m, 1 dd, holotype MNHN IM-2000-26855 (Figures 13C, D, P). — NORFOLK 2: stn DW2123, 23°18'S, 168°15'E, 187-197 m, 4 dd, 1 dd juv, paratypes MNHN IM-2000-26856, 1 coll. K. & D. Monsecour.

DISTRIBUTION — Norfolk Ridge, 197-266 m.

DESCRIPTION — Shell size typical for genus, adult size up to 5.8 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, ~1.5 whorls, nearly smooth, with final quarter whorl bearing very fine axial riblets. Teleoconch of 3.5-3.75 rounded whorls. Axial sculpture of 12-13 strong, equally spaced ribs on all whorls. Spiral sculpture of fine spiral cords, with four cords on spire whorls and eight cords on body whorl. Basal cords ventrally ranging to just above adapical edge of columella. Small, rounded knobs forming at intersection of spiral and axial sculpture. Outer lip slightly thickened, bearing continuation of spiral sculpture. Inner lip thickened, denticulate, with four denticles; two adapicalmost denticles distinctly stronger. Columellar callus thickened, with slight rim. Parietal callus weak. Columella with two partially merged abapical denticles. Siphonal canal short, open, slightly recurved. Teleoconch whorls beige to pale orange in colour. Protoconch slightly paler beige. Aperture and columella off-white. Holotype height 4.6 mm.

REMARKS — This species stands apart from all other congeners in the very bulbous protoconch and the strong sculpture; consequently, the generic placement is considered to be only tentative.

ETYMOLOGY — Noun in genitive formed from the type locality, Crypthelia Seamount on Norfolk Ridge.

Genus *SEMINELLA* Pease, 1868

Seminella corrugata n. sp.

Figures 13K, L, Q

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-25124 and 2 (dd) paratypes MNHN IM-2000-26857-26858 (as listed below).

TYPE LOCALITY — Norfolk Ridge, 24°55'S, 168°22'E, 508-532 m [SMIB 8: stn DW146-147].

MATERIAL EXAMINED — Norfolk Ridge. BATHUS 3: stn DW809, 23°39'S, 167°59'E, 650-730 m, 1 dd, paratype MNHN IM-2000-26857. – SMIB 8: stn DW146-147, 24°55'S, 168°22'E, 508-532 m, 1 dd, holotype MNHN IM-2000-25124 (Figures 13K, L, Q), 1 dd juv, paratype MNHN IM-2000-26858.

DISTRIBUTION — Norfolk Ridge, 532-650 m.

DESCRIPTION — Shell size typical for genus, adult size up to 3.1 mm; fusiform, elongate. Suture slightly impressed. Protoconch multispiral, ~3.5 whorls, with microscopic pits. Teleoconch of slightly more than three whorls. Axial sculpture of 11-12 strong ribs on all whorls. Spiral sculpture absent. Outer lip not thickened. Inner lip smooth. Columellar callus semi-detached. Parietal callus thickened. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls semi-translucent, off-white to beige in colour. Protoconch yellowish-brown. Aperture and columella off-white. Holotype height 3.1 mm.

REMARKS — This species stands apart from all known congeners in its lack of basal cords, fewer and thicker axial ribs, more bulbous shape and shorter aperture.

ETYMOLOGY — Latin adjective *corrugatus*, folded, in reference to the strong axial sculpture.

Seminella biconica n. sp.

Figures 13M, N, R

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-25123 and 1 (dd) paratype MNHN IM-2000-26859.

TYPE LOCALITY — New Caledonia, between Ile des Pins and Grand Récif Sud, 23°03'S, 168°58'E, 397-400 m [BATHUS 2: stn DW730].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — New Caledonia, between Ile des Pins and Grand Récif Sud.

DESCRIPTION — Shell size typical for genus, adult size up to 3.2 mm; fusiform, elongate. Suture slightly impressed, whorls slightly shouldered. Protoconch multispiral, ~3.5 whorls smooth. Teleoconch of 2.75 whorls. Axial sculpture of nine to ten strong ribs on all whorls. Spiral sculpture of basal cords, ventrally ranging to mid-columella height. Outer lip not thickened. Inner lip smooth. Columellar callus semi-detached. Parietal callus thickened. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls semi-translucent, off-white in colour. Protoconch solid, white. Aperture and columella semi-translucent, off-white. Holotype height 3.2 mm.

REMARKS — This species differs from *Seminella corrugata* n. sp. in its fewer teleoconch whorls, presence of basal cords, more shouldered whorls, fewer axial ribs and solid, white protoconch.

ETYMOLOGY — Latin *bi*, twice, and adjective *conicus*, conical, in reference to the doubly conical shape of the shell.

Seminella comistea (Melvill, 1906)

Figures 14A, B, K

Columbella (Seminella) comistea Melvill, 1906: 75-76, pl. 7, fig. 16.

Zafra comistea – Drivas & Jay 1990: 187, fig. 39. — Monsecour in Poppe 2008: 76, figs 4-5.

MATERIAL EXAMINED — **New Caledonia**. LAGON stn DW729, 21°18.7'S, 165°53.5'E, 42-45 m, 1 dd, 1 dd juv. – Stn DW830, 20°49'S, 165°19'E, 105-110 m, 16 dd. – Stn DW1235, 22°24.1'S, 166°55.5'E, 51-52 m, 1 lv. – BATHUS 1: stn DE700, 20°57'S, 165°35'E, 160-222 m, 1 dd. – Stn DW654, 21°17'S, 165°57'E, 237-298 m, 1 lv. – Stn DW674, 20°49'S, 165°19'E, 105-110 m, 1 dd. – Stn DW677, 20°49'S, 165°19'E, 96-109 m, 2 dd. – Stn DW706, 21°42'S, 166°34'E, 247-252 m, 1 dd. – VAUBAN 1978-1979: stn DR40, 22°30'S, 166°24'E, 250-350 m, 2 lv juv, 1 dd. **Norfolk Ridge**. BATHUS 3: stn DW827, 23°22'S, 168°01'E, 381-469 m, 1 dd.

DISTRIBUTION — New Caledonia, 45-381 m, alive in 52-250 m. Broadly distributed throughout the Indo-Pacific; the species has a multispiral protoconch, from which can be inferred good dispersal capacities.

Genus **ZAFRA** A. Adams, 1860

Zafra dejugis n. sp.

Figures 14C, D, L

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26860.

TYPE LOCALITY — North of New Caledonia, Grand Passage, 19°08'S, 163°23'E, 165 m [MUSORSTOM 4: stn DW149].

MATERIAL EXAMINED — Known only from the holotype.

DISTRIBUTION — North of New Caledonia, Grand Passage.

DESCRIPTION — Shell size typical for genus, adult size of holotype 3.1 mm; fusiform, elongate. Suture slightly incised. Protoconch paucispiral, slightly less than two smooth whorls. Teleoconch of 3.3 whorls. Axial sculpture of thin, close-set, opisthocline ribs on all teleoconch whorls; 11 ribs on first teleoconch whorl, increasing to 14 ribs on final whorl. Spiral sculpture of basal cords, ventrally ranging to three-fourths of columella height. Outer lip slightly thickened, bearing continuation of basal cords. Inner lip with rim and subterminal sinus. Columellar callus thickened, slightly raised. Parietal callus slightly thickened. Columella nearly smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white in colour. Protoconch off-white. Aperture and columella off-white.

REMARKS — This species is similar to *Seminella comistea*, but differs in its multispiral protoconch, larger size, and opisthocline axial ribs.

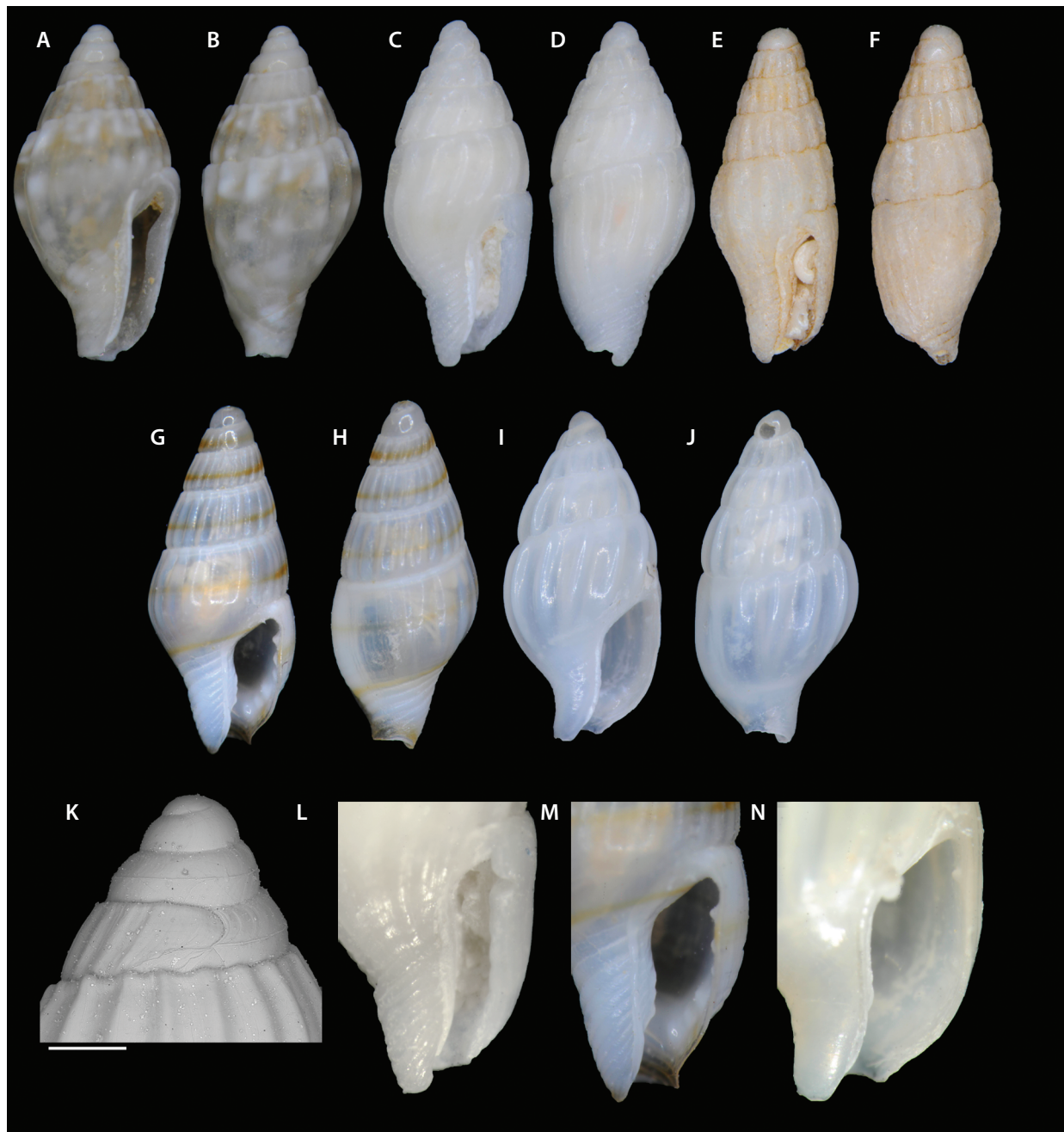


FIGURE 14

Seminella comistea (Melvill, 1906); **A**, shell (2.4 mm), New Caledonia, BATHUS 1 stn DW654, 237-298 m; **B**, dorsal view; **K**, protoconch of shell (2.6 mm), New Caledonia, Poindimié, LAGON stn DW830, 105-110 m. *Zafra dejugis* n. sp.; **C**, holotype (3.1 mm) MNHN IM-2000-26860, New Caledonia, MUSORSTOM 4 stn DW149, 165 m; **D**, dorsal view of holotype; **L**, aperture detail. *Zafra gracilentia* n. sp.; **E**, holotype (4.1 mm) MNHN IM-2000-26861, New Caledonia, BATHUS 4 stn DW914, 600-616 m; **F**, dorsal view of holotype. *Zafra parilis* n. sp.; **G**, holotype (4.8 mm) MNHN IM-2000-26862, New Caledonia, SMIB 8 stn DW182-184, 305-330 m; **H**, dorsal view of holotype; **M**, aperture detail. *Zafra stricosa* n. sp.; **I**, holotype (4.7 mm) MNHN IM-2000-26864, New Caledonia, BATHUS 4 stn DW914, 600-616 m; **J**, dorsal view of holotype; **N**, aperture detail.

ETYMOLOGY. — Latin adjective *dejugis*, sloping, in reference to the oblique axial ribs.

Zafra gracilenta n. sp.

Figures 14E, F

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26861.

TYPE LOCALITY — North of New Caledonia, Grand Passage, 18°49'S, 163°15'E, 600-616 m [BATHUS 4: stn DW914].

MATERIAL EXAMINED — Known only from the holotype.

DISTRIBUTION — Known only from the type locality.

DESCRIPTION — Shell size typical for genus, adult size of holotype 4.1 mm; fusiform, elongate. Suture slightly impressed. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of four whorls. Axial sculpture of 11-12 strong ribs on all teleoconch whorls. Spiral sculpture of basal cords, ventrally ranging to just below adapical end of columella. Outer lip slightly thickened, bearing continuation of basal cords. Inner lip with thin rim of partially merged denticles and terminal sinus. Columellar callus thickened, slightly raised. Parietal callus thickened. Columella smooth. Siphonal canal short, open, straight. Teleoconch whorls off-white to pale beige in colour. Protoconch off-white. Aperture and columella off-white.

REMARKS — This species stands apart from all congeners in the slender, elongate shape of the shell.

ETYMOLOGY — Latin adjective *gracilentus*, slender, in reference to the slender, elongate shape.

Zafra parilis n. sp.

Figures 14G, H, M

TYPE MATERIAL — Holotype (lv) MNHN IM-2000-26862 and 9 (lv) paratypes MNHN IM-2000-26863, 2 (dd) coll. K. & D. Monsecour (as listed below).

TYPE LOCALITY — Norfolk Ridge, 23°18'S, 168°05'E, 305-330 m [SMIB 8: stn DW182-184].

MATERIAL EXAMINED — **Norfolk Ridge.** BATHUS 3: stn DW830, 23°20'S, 168°01'E, 361-365 m, 1 dd. — NORFOLK 1: stn DW1727, 23°17'S, 168°14'E, 190-212 m, 1 dd juv. — SMIB 4: stn DW55, 23°21'S, 168°05'E, 215-260 m, 1 dd juv. — SMIB 8: stn DW182-184, 23°18'S, 168°05'E, 305-330 m, 10 lv, holotype MNHN IM-2000-26862 (Figures 14G, H, M) and 9 paratypes MNHN IM-2000-26863, 9 dd, 2 coll. K. & D. Monsecour, 6 lv juv, 18 dd juv. — Stn DW190, 23°18'S, 168°05'E, 305-310 m, 8 dd, 4 dd juv. — Stn DW197-199, 22°52'S-22°53'S, 168°12'E-168°13'E, 408-436 m, 1 dd, 1 dd juv.

DISTRIBUTION — Norfolk Ridge, 212-408 m, alive in 305-310 m.

DESCRIPTION — Shell rather large for genus, adult size up to 5.4 mm; fusiform, elongate. Suture slightly impressed, with distinct subsutural rim. Protoconch paucispiral, ~1.6 smooth whorls. Teleoconch of 3.75 whorls. Axial sculpture of 17-18 thin, close-set ribs, becoming obsolete on lower part of final whorl. Spiral sculpture of very weak grooves on lower part of final whorl; basal cords ventrally ranging to adapical edge of columella. Outer lip thickened, with distinct axial rim, bearing continuation of basal cords. Inner lip denticulate, with six equally spaced denticles. Columellar callus raised.

Parietal callus slightly thickened. Columella with three to four abapical riblets; riblets occasionally merging. Siphonal canal short, open, slightly recurved. Teleoconch whorls off-white to pale greyish-brown in colour, often with pale brown band at mid-whorl. Final whorl often with second pale brown band just above basal cords. Protoconch off-white. Aperture and columella off-white. Operculum typical of genus, pale brown, semi-translucent, with terminal nucleus. Holotype height 4.8 mm.

REMARKS — The colour pattern is reminiscent of *Zafra pumila* (Dunker, 1858), but the present species differs in possessing a paucispiral protoconch, fewer teleoconch whorls, an incised suture, broader aperture and longer siphonal canal.

ETYMOLOGY — Latin adjective *parilis*, similar, in reference to its similarity to *Zafra pumila*.

Zafra stricosa n. sp.

Figures 14I, J, N

TYPE MATERIAL — Holotype (dd) MNHN IM-2000-26864 and 4 (dd) paratypes MNHN IM-2000-26865, 1 (dd) coll. K. & D. Monsecour.

TYPE LOCALITY — North of New Caledonia, Grand Passage, 18°49'S, 163°15'E, 600-616 m [BATHUS 4: stn DW914].

MATERIAL EXAMINED — Known only from the type material.

DISTRIBUTION — North of New Caledonia, Grand Passage.

DESCRIPTION — Shell size typical for genus, adult size up to 4.7 mm; fusiform, slightly bulbously elongate. Suture slightly impressed, with distinct subsutural rim. Protoconch paucispiral, ~1.5 smooth whorls. Teleoconch of slightly more than 3.5 whorls. Axial sculpture of 10-11 equally spaced, close-set ribs on all whorls. Spiral sculpture of very weak to almost obsolete basal cords, ventrally ranging to just below adapical edge of columella. Outer lip slightly thickened, bearing continuation of basal cords. Inner lip denticulate, with seven denticles; two adapicalmost and two abapicalmost denticles stronger. Columellar callus thin, with small rim. Parietal callus thin. Columella smooth. Siphonal canal short, open, slightly recurved. Teleoconch whorls semi-translucent, off-white in colour. Protoconch semi-translucent, off-white. Aperture and columella off-white. Holotype height 4.7 mm.

REMARKS — This species differs from *Zafra parilis* n. sp. in its fewer axial ribs, absence of spiral grooves on the final whorl, smooth columella, position of denticles in the inner lip and lack of colour pattern.

ETYMOLOGY — Latin adjective *stricosus*, colourless in reference to the lack of colour pattern.

ACKNOWLEDGEMENTS

We would like to thank P. Maestrati (MNHN) for help with both the regular photography and SEM illustrations of the protoconchs. V. Héros, P. Bouchet and E. Strong for rereading and editing the manuscript and giving useful comments and for help with some of the latin names.

REFERENCES

- BOUCHET P., HÉROS V., LOZOUET P. & MAESTRATI P. 2008 — A quarter-century of deep-sea malacological exploration in the South and West Pacific: where we do we stand? How far to go?, in HÉROS V., COWIE R. H. & BOUCHET P. (eds), *Tropical Deep-Sea Benthos 25. Mémoires du Muséum national d'Histoire naturelle* 196: 9-40.
- BOUCHET P., LOZOUET P. & SYSOEV A. 2009 — An inordinate fondness for turrids. *Deep-Sea Research II*, 56: 1724-1731.
- BOUCHET P. & WARÉN A. 1985 — Revision of the northeast Atlantic bathyal and abyssal Neogastropoda, excluding Turridae. *Bollettino Malacologico*, suppl. 1: 121-296.
- DELL R.K. 1956 — The archibenthal Mollusca of New Zealand. *Dominion Museum Bulletin* 18: 1-235.
- DEMAINTENON M. 2008 — Results of the *Rumphius* Biohistorical Expedition to Ambon (1990). Part 14. The Columbelloidea (Gastropoda: Neogastropoda) collected at Ambon during the *Rumphius* Biohistorical Expedition. *Zoologische Mededelingen Leiden* 82 (34): 341-374, figs 1-44, tabs 1-2.
- DRIVAS J. & JAY M. 1990 — The Columbelloidea of Reunion Island. *Annals of the Natal Museum* 31: 163-200.
- DRIVAS J. & JAY M. 1997a — Report on a collection of Columbelloidea (Mollusca: Gastropoda) from the West Indian Ocean region (Madagascar, Glorieuses Islands, Comores Islands, and nearby banks and coral shawls) with descriptions of three new species and one new genus. *Apex* 12(1): 31-42.
- DRIVAS J. & JAY M. 1997b — On a collection of Columbelloidea from the Red Sea. *Apex* 12(1): 27-30.
- DUCLOS P.L. 1840 — *Histoire naturelle générale et particulière de tous les genres de coquilles univalves marines à l'état vivant et fossile, publiée par monographie. Genre Columbella*. Didot, Paris. 1 p., 13 pls.
- DUNKER W. 1860 — Neue japanische Mollusken. *Malakozoologische Blätter* 6: 221-240.
- GASKOIN J.S. 1851 — Descriptions of twenty species of Columbelloidea and one species of Cypraea. *Proceedings of the Zoological Society of London* 19: 2-14.
- HABET. 1958 — Descriptions of ten new gastropod species. *Venus* 20(1): 32-42.
- HEDLEY C. 1902 — Studies on Australian Mollusca part V. *Proceedings of the Linnean Society of New South Wales* 26: 700-708.
- HEDLEY C. 1907 — The results of deep-sea investigation in the Tasman Sea. 3. Mollusca from 80 fathoms off Narrabeen. *Records of the Australian Museum* 6(4): 283-304.
- HEDLEY C. 1912 — Descriptions of some new or noteworthy shells in the Australian Museum. *Records of the Australian Museum* 8: 131-160.
- HERVIER R.P.J. 1900 — Le genre *Columbella* dans l'Archipel de la Nouvelle Calédonie. *Journal de Conchyliologie* 46"1899": 305-391, pls 13-14.
- LUSSI M. 2009 — Description of twelve new species of Columbelloidea (Gastropoda: Prosobranchia: Neogastropoda) from South African waters. *Malacologia Mostra Mondiale* 64: 20-28.
- MELVILL J.C. 1906 — Descriptions of thirty-one Gastropoda and one scaphopod from the Persian Gulf and Gulf of Oman, dredged by Mr. F.W. Townsend, 1902-1904. *Proceedings of the Malacological Society of London* 7(2): 69-80, pls 7-8.
- MELVILL J.C. & STANDEN R. 1901 — The Mollusca of the Persian Gulf, Gulf of Oman, and Arabian Sea, as evidenced mainly through the collections of Mr. F.W. Townsend, 1893-1900, with descriptions of new species. *Proceedings of the Zoological Society of London* 1901: 327-460, pls 21-24.
- MONSECOUR K. 2008 — Columbelloidea in: POPPE G.T. *Philippine Marine Mollusks* vol. II. Conchbooks, Hackenheim. 848 p.
- MONSECOUR K. & MONSECOUR D. 2007 — Annotated list of columbellid species described by M.M. Schepman held in the malacological collection of the Zoologisch Museum Amsterdam (Mollusca, Caenogastropoda, Columbelloidea). *Gloria Maris* 45(6): 165-181.
- MONSECOUR K. & MONSECOUR D. 2011 — Description of four new species in the *Mitrella longissima*-complex (Gastropoda: Neogastropoda: Columbelloidea). *Visaya* 3(3): 29-34.
- OKUTANI T. 2000 — *Marine mollusks in Japan* Tokai University Press. 1176 p.
- POPPE G.T. & TAGARO S. 2010 — New species of Haloceratidae, Columbelloidea, Buccinidae, Mitridae, Costellariidae, Amathinidae and Spondylidae from the Philippines. *Visaya* 3(1):73-93.
- POWELL A.W.B. 1933 — The marine Mollusca of the Chatham Islands. *Records of the Auckland Institute and Museum* 1(4): 181-208.
- POWELL A.W.B. 1937 — New species of marine Mollusca from New Zealand. *Discovery Reports* 15: 153-222.
- SCHEPMAN M.M. 1911 — The Prosobranchia of the Siboga Expedition. Part 4: Rachioglossa. *Uitkomsten op zoologisch, botanisch, oceanografisch en geologisch gebied verzameld in Nederlandsch Oost-Indië 1899-1900 aan boord H.M. Siboga onder commando van Luitenant ter zee Ie kl. G.F. Tydeman* 49d: 247-364.
- SLEURS W.J. 1987 — The marine micro gastropods from the northern coast of Papua New Guinea (Mollusca: Gastropoda) III. Family Columbelloidea (subfamily Pyreninae), with description of two new species. *Indo-Malayan Zoology* 4: 33-68.
- SOWERBY G.B. 1844 — Description of some new species of *Columbella*, in the collection of H. Cuming, Esq. *Proceedings of the Zoological Society of London* 12: 48-53.
- THIELE J. 1925 — Gastropoda der Deutschen Tiefsee-Expedition. II. Teil. *Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition auf dem Dampfer "Valdivia" 1898-1899* 17(2): 35-382, pls 13-46.