

A new genus of Ancillinae (Mollusca, Gastropoda, Olividae) from New Caledonia, with the description of two new species

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Abstract. — *Entomoliva* gen. nov. is described from 120-700 m in the New Caledonian region ; it contains two new species, *E. incisa* (type species) and *E. mirabilis*. Shell characters combine olivine and ancilline traits, but the presence of an operculum indicates the genus to belong to the subfamily Ancillinae.

Résumé. — Le genre *Entomoliva* gen. nov. est décrit du bathyal supérieur (120-700 m) de Nouvelle-Calédonie pour deux espèces, *E. incisa* (espèce-type) et *E. mirabilis*. Les caractères de la coquille rappellent autant les Olivinae que les Ancillinae, mais la présence d'un opercule conduit à classer *Entomoliva* dans les Ancillinae.

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INTRODUCTION

Recent deep-water dredging programmes carried out in the New Caledonian region have brought to light numerous new species of molluscs, among them a significant number of Ancillinae. Of these, the genus *Amalda* H. & A. Adams, 1853, was dealt with by KILBURN & BOUCHET (1988). The present paper covers two further species which do not appear referable to any described genus. For references to published accounts of the expeditions see RICHER DE FORGES (1990).

Abbreviations

a/l = ratio of aperture length to total length, measured along main axis.

b/l = ratio of breadth to total length along main axis.

dd = empty shell.

lv = live-taken specimen.

Genus **ENTOMOLIVA** gen. n.

TYPE SPECIES : *Entomoliva incisa* sp. n.

DIAGNOSIS : Shell subcylindrical with raised, conical spire, aperture narrow, posteriorly only slightly tapering ; columella pillar weakly differentiated, strongly twisted, bearing spiral ridges, parietal region not calloused, bearing a series of short transverse pleats ; anterior and posterior fasciolar bands well-defined, no ancillid groove, band or labral denticle ; no secondary spire callus, median part of body whorl not calloused, with sinuous, tabulate, close-set axial ridges in one species ; primary callus forming a finely to coarsely microshagreened band up spire, exposing the suture in one species, a mid-whorl band in the other. Protoconch narrowly domed, of about 1,5 smooth whorls. Operculum oblancoate, anterior end rounded, nucleus eccentric, near anterior end. Radula (figs. 10-11) with fairly strongly arched rachidians, its cutting edge bearing three strong main cusps and a distinct angle on either side, lateral plates uncinatae.

Entomoliva can be distinguished from other olivid groups by a unique combination of morphological characters : in this genus an operculum (a plesiomorphic character found in the subfamily Ancillinae) occurs in association with shell characters that are more suggestive of the Olivinae, in particular a narrow, rather linear aperture, pliculate inner lip and undifferentiated columellar pillar ; the open suture found in one of the two species is another character commonly found in the Olivinae, but otherwise unknown in the Ancillinae. To what extent these shell characters are the result of convergence remains to be determined. The radula retains the primitive triscuspidate rachidian found in most genera of the Olividae.

Within the Ancillinae, *Entomoliva* displays a facies slightly suggestive of some members of the so-called genus *Ancillus* Montfort, 1810. However, the only feature uniting species of that group, namely the absence of an ancillid groove, is evidently homoplastic, as it appears to be a primitive character state in some ancilline genera (*Turrancilla* and probably *Ancillista*), but occurs as a probable character reversal in certain species of *Amalda* and *Ancilla*. Consequently, the lack of an ancillid groove should not be used to infer basic phylogeny, and *Ancillus* must be treated as a *taxon dubium*, although it will probably retain some degree of synthetic value for "pigeon-holing" fossils. *Entomoliva* shows the closest resemblance to members of the genera *Turrancilla* von Martens, 1903, *Ancillista* Iredale, 1936, and *Amalda* H. & A. Adams, 1853, from which it differs in the olivine characters given above. Members of the genus *Turrancilla* von Martens, 1903, further differ from *Entomoliva* in retaining the primitive terminal nucleus to the operculum. In *Ancillista*, the spire callus is rather similar in extent to that of *Entomoliva incisa* (although non-shagreened), but the columella is very narrow and smooth, and the aperture is particularly wide to accommodate the voluminous foot. In *Amalda* the primary callus covers the spire, exposing at most the protoconch and first few teleoconch whorls.

The genus *Entomoliva* is at present known only from New Caledonia. The two species which it comprises replace each other bathymetrically, *E. incisa* occurring in 400-700 m, the shallower water *mirabilis* in 120-300 m. *E. mirabilis* is unique within the Olividae on account of its axially grooved body whorl. Although axial sculpture does occur in the supposed olivid *Plicoliva* Petuch, 1979, that genus is now known to belong to the Volutidae (BOUCHET, 1990).

ETYMOLOGY : *entom*[os] (grooved) + *oliva* (nominate genus of family Olividae), gender feminine.

KEY TO SPECIES OF GENUS *Entomoliva*

- Axial sculpture of growth-lines only ; suture covered by a strip of very finely shagreened spire callus *incisa*
- Axial sculpture of distinct, narrow grooves ; suture exposed, callus restricted to a rather coarsely shagreened strip above suture. *mirabilis*

***Entomoliva incisa* sp. n.**

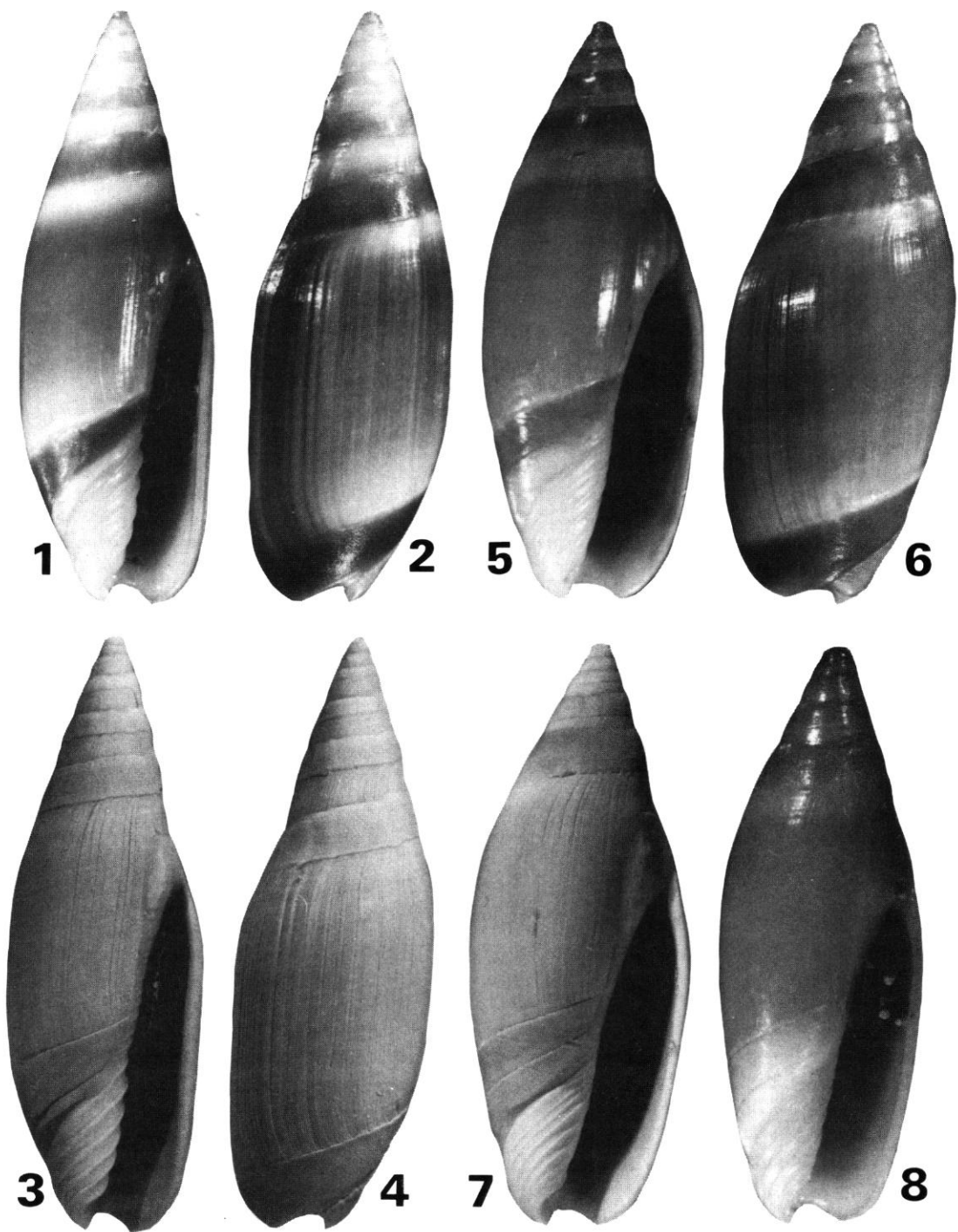
(Figs. 1-13)

DIAGNOSIS : Shell cylindric-fusiform, b/l 0,33-0,39, a/l 0,51-0,60, spire angle 31° to 45° ; primary spire callus relatively thin and forming a strip that covers the sutural regions, but exposes the median part of each whorl, surface of callus glossy and very finely microshagreened ; columella pillar with 5-8 strong spiral ridges, parietal region with 5-13 short, transverse plicae ; median zone with strong growth-lines and fine scratch-like spiral striae. Pale greyish-brown to yellowish-white, posterior fasciolar band usually light orange-brown, columella white. Maximum length 25,9 mm.

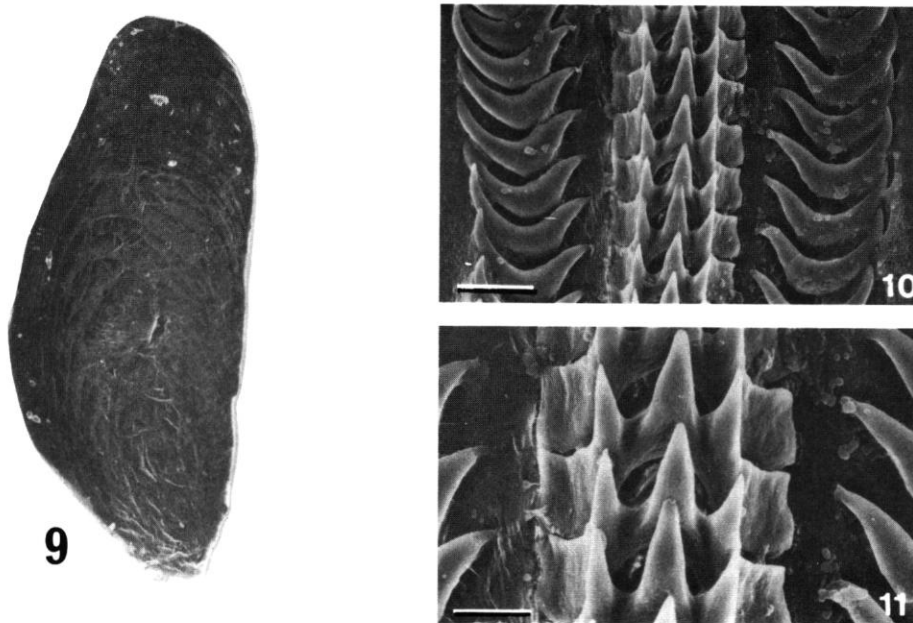
DESCRIPTION

Shell cylindric-fusiform (b/l 0,33-0,39, a/l 0,51-0,60) with a narrow aperture, and moderately high, orthoconoid, rather flat-sided spire, spire angle 31°-45°. Primary spire callus forming a strip that covers the sutural regions, but exposes the median part of each whorl, commencing on the 1st or 2nd teleoconch whorl ; posterior edge of this callus strip appearing as a false suture, anterior edge delimited by a slight groove ; surface of callus glossy and finely but distinctly microshagreened, without traces of spiral sculpture ; no secondary callus. Aperture almost linear to very narrowly triangular, widest anteriorly, tapering slightly to a rather blunt posterior angle ; parietal lip without callus, indeed slightly excavated ; inner lip rather straight, with only a slight concavity at columella/parietal junction ; outer lip flat and slightly opisthocline in side-view, without trace of a basal denticle ; siphonal notch moderately deep, very asymmetrically U-shaped. Columella pillar strongly twisted, its termination acute, with a rather deep basal notch ; columella pillar crossed by 5-8 strong ridges, remainder of inner lip bearing an additional series of 5-13 short, transverse plicae, which become progressively weaker posteriorly ; microshagreen sculpture very fine. Anterior fasciolar groove shallow, its band slightly concave and declivous, its posterior edge slightly raised ; posterior fasciolar band microshagreened, very gently convex, its adapical border usually slightly raised above level of non-calloused median area. Median zone with strong growth-lines (becoming slightly pliculate posteriorly), and fine scratch-like spiral striae. Maximum number of teleoconch whorls about 5.

Median part of body whorl varying from light greyish-yellowish-brown (fading to whitish basally and with a white zone posteriorly that continues up spire) to uniform yellowish-white ; spire callus (or merely a coloured band) light yellowish-brown to dark orange-yellow, posterior fasciolar band usually strong yellowish-brown, but sometimes uncoloured, columella white.



FIGS. 1-8. — *Entomoliva incisa* sp. n. : 1-2, holotype, SMIB 2, Stn DW21, 460-500 m, length 20,6 mm ; 3-4, same specimen coated to enhance sculptural details ; 5-6, paratype, BIOCAL, Stn DW33, 675-680 m, length 25,9 mm ; 7, same specimen, coated ; 8, paratype with uncoloured band, SMIB 3, Stn DW21, 525 m, length 15,1 mm.



FIGS. 9-11. — *Entomoliva incisa* : 9, operculum, length 2,53 mm ; 10-11, radula, scale lines 20 μ m and 10 μ m respectively.

Protoconch narrowly domed, first whorl depressed, suture shallow, approximately 1,5 whorls (but limit often obscured by callus), breadth 0,98-1,15 mm.

Dimensions : 20,6 \times 7,0 mm (holotype) ; 25,9 \times 10,2 mm (paratype, deep-water form).

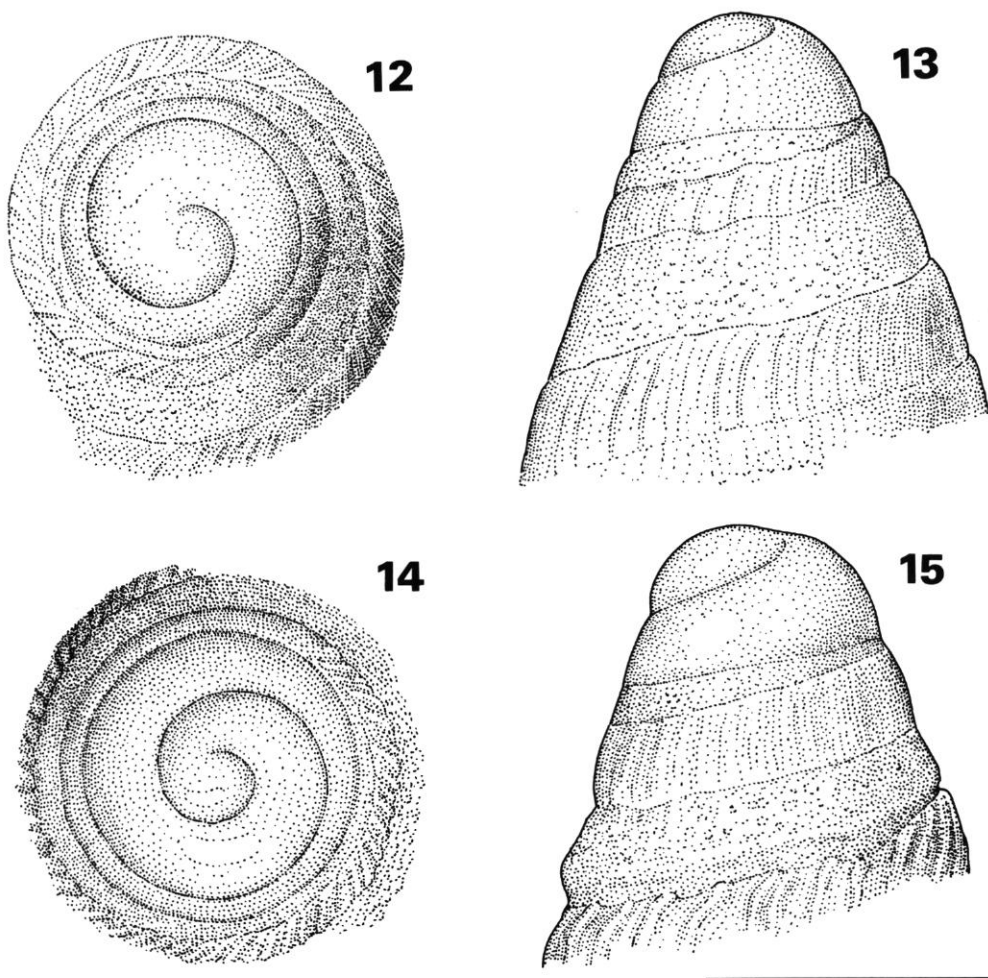
Radula and operculum : see figs. 9-11.

DEPTH VARIATION : Three samples from deeper water (650-705 m) appear to represent a bathymorph characterised by its unusually large protoconch (breadth 1,15-1,45 mm, instead of 0,98-1,15 mm). The only adult (figs. 5-7) from these depths (BIOCAL Stn DW33) further differs from the typical shallower water form in being larger (length 25,9 mm), proportionally broader (b/l 0,39, against 0,33-0,34), and more biconical, with a spire angle of 45°, instead of 31°-38° ; there are 8 pleats on the columella pillar, against 5-7 in typical examples.

DISTRIBUTION : New Caledonia, SW of the Isle of Pines, at a depth of approximately 400 to 700 m.

TYPE MATERIAL (all MNHN collection unless otherwise stated) : Holotype : 22°40' S, 167°41' E, 460-500 m, SMIB 2, stn DW21. Paratypes : 23°10' S, 167°10' E, 675-680 m, 1 lv, 2 dd (BIOCAL Stn DW33) ; 23°09' S, 167°11' E, 650-680 m, 1 lv (*do*, Stn DW36) ; 22°46' S, 167°15' E, 400 m, 3 dd (*do*, DW43) ; 22°47' S, 167°14' E, 440-450 m, 2 lv, 3 dd (*do*, Stn DW 44) ; 23°35' S, 167°12' E, 695-705 m, 3 dd (*do*, Stn DW56) ; 22°15' S, 167°15' E, 440 m, 7 dd (BIOCAL Stn DW77) ; 22°08' S, 167°11' E, 410-420 m, 1 dd (MUSORSTOM 4, Stn CC246) ; 22°17' S, 167°12' E, 390 m, 2 lv (R.V. "Vauban" 1978-79, Stn 3) ; Pointe Sud du Grand Récif (same area as previous), 200 m, 1 lv, and 400 m, 1 dd (R.V. "Vauban")

1978-79); 22°56' S, 167°15' E, 412-428 m, 1 dd (SMIB 2, Stn DW3); 22°54' S, 167°13' E, 435-447 m, 1 dd (do, Stn DW8); 22°53' S, 167°13' E, 405-444 m, 1 lv (do, Stn DW14); 22°55' S, 167°15' E, 428-448 m, 1 dd (do, Stn DW17); 22°31' S, 167°37' E, 410-420 m, 2 dd (do, Stn DW23); 22°59' S, 167°19' E, 525 m, 2 lv, 5 dd (SMIB 3, Stn DW21); 23°03' S, 167°19' E, 503 m, 1 dd (do, DW22); 22°58' S, 167°20' E, 530 m, 1 dd (do, DW23). One paratype each will be deposited in the Natal Museum (K6231/T4020), the Australian Museum, Sydney, and the National Museum of New Zealand. Collected in 1978 and 1985-87 by P. BOUCHET, J. L. MENOU, B. METIVIER, B. RICHER DE FORGES and P. TIRARD on board R.V. "Vauban" and R.V. "Jean-Charcot".



FIGS. 12-15. — Protoconchs of *Entomoliva*: 12-13, *E. incisa*, MUSORSTOM 4, Stn CC246, 410-420 m.; 14-15, *E. mirabilis*, 22°40'-22°50' S, 167°10'-167°30' E, 200-350 m. Scale line 1 mm.

Entomoliva mirabilis sp. n.

(Figs. 14-23)

DIAGNOSIS : Shell subcylindrical, b/l 0,30-0,31, a/l 0,61-0,66, spire angle 34°-41° ; primary spire callus limited to a broad strip immediately above suture, its lower border raised into a low keel, and its surface of callus rather coarsely microshagreened ; columella pillar with 6-9 strong spiral ridges, anterior end of paries with 5-6 short, transverse plicae ; median zone with close, sinuously opisthocline, axial grooves and fine scratch-like spiral striae. White. Maximum length 25,2 mm.

DESCRIPTION

Shell subcylindrical (b/l 0,30-0,31, a/l 0,61-0,66) with a narrow aperture, and moderately high, orthoconoid to slightly coeloconoid, flat-sided spire, spire angle 34°-41°. Primary spire callus restricted to a rather thick strip immediately above suture, exposing the latter together with the adapical part of each whorl, commencing on the 1st teleoconch whorl ; anterior edge of this callus strip raised into a low keel, which exaggerates the suture ; surface of callus glossy and rather coarsely microshagreened, presenting a rugose appearance ; no secondary callus. Aperture narrow and somewhat linear, gradually widening anteriorly, outer lip slightly incurved medially, posterior angle of aperture acute ; parietal lip without callus, indeed slightly excavated ; inner lip rather straight, columella slightly convex ; outer lip gently and evenly convex and slightly opisthocline in side-view, without trace of a basal denticle ; siphonal notch moderately deep, very asymmetrically U-shaped. Columella pillar strongly twisted, its termination acute, with a rather deep basal notch ; columella pillar crossed by 6-9 strong ridges, remainder of inner lip with an additional 5-6 short, transverse plicae in fasciolar region, and sometimes a few feeble, widely-spaced denticles on anterior half of paries ; microshagreen sculpture very fine. Anterior fasciolar groove very shallow, its band declivous, its posterior edge slightly raised ; posterior fasciolar band microshagreened, very gently convex, its adapical border markedly raised above level of non-calloused median area. Median zone sculptured by close-set, sinuously opisthocline axial grooves, separating tabulate ribs, crossed by inconspicuous, scratch-like spiral grooves, becoming deeper at each extremity where they may render the ribs feebly crenulated. Maximum number of teleoconch whorls about 5,5.

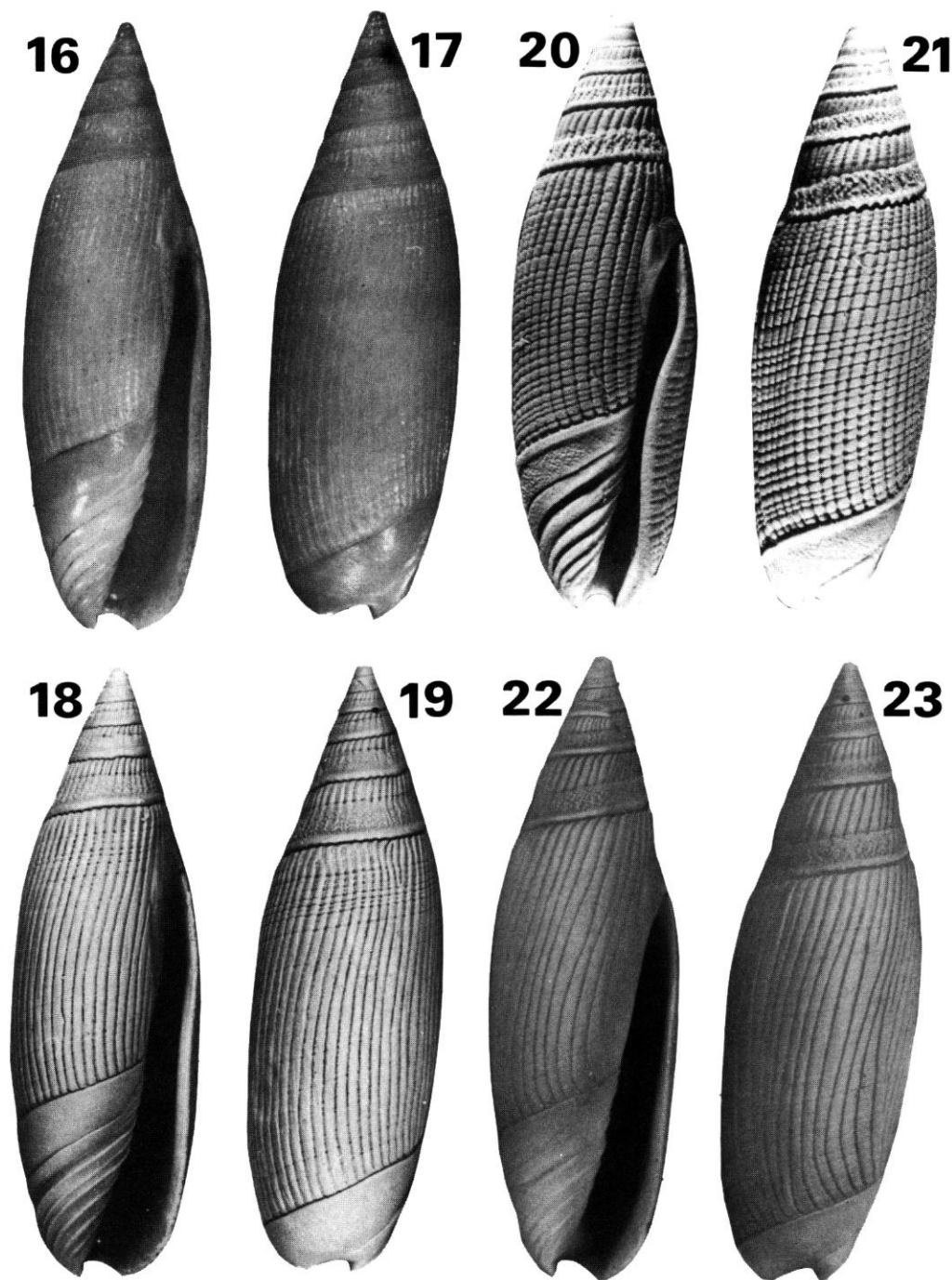
Colour uniform light orange to white throughout. In a few paratypes, anterior edge of spire callus and adapical border of posterior fasciolar band orange brown.

Protoconch narrowly domed, 1st whorl depressed, suture shallow ; limits ill-defined, approximately 1,5 whorls, maximum breadth approximately, 1,15 mm.

Dimensions : 25,2 × 8,0 mm (holotype), 22,1 × 6,7 mm (paratype).

DISTRIBUTION : New Caledonia, SW of the Isle of Pines, at a depth of about 120-300 m.

TYPE MATERIAL (all MNHN) : Holotype : 22°40' S, 167°08' E, 275-280 m, 1 dd, MUSORSTOM 4, Stn DW208. Paratypes : 22°37' S, 167°06' E, 120 m, 1 dd (MUSORSTOM 4, Stn DW204) ; 22°37' S, 167°09' E, 128 m, 1 dd (Programme Lagon, Stn 386) ; Pointe sud du Grand Récif (same area as previous), 300 m, 1 dd (R.V. " Vauban " 1978-79) ; 22°40'-22°50' S, 167°10'-167°30' E, 200-350 m, 3 dd (TIRARD & CRUTZ leg.) ; 22°38' S, 167°35' E, 110 m, 3 dd (SMIB 5, Stn DW81) ; 22°32' S, 167°32' E, 155 m, 2 dd (do, Stn DW82). One paratype each will be deposited in the Natal Museum (K6232/T4021), the Australian Museum, Sydney, and the National Museum of New Zealand. Collected in 1978 and 1985-89 by P. BOUCHET, P. LABOUTE, C. MONNIOT and B. RICHER DE FORGES on board R.V. " Vauban " and R.V. " Alis ".



FIGS. 16-23. — *Entomoliva mirabilis* sp. n. : 16-17, holotype, MUSORSTOM 4, Stn DW208, 275-280 m, length 25,2 mm ; 18-19, same specimen coated to enhance sculptural details ; 20-21, paratype, coated, 22°40'-22°50' S, 167°10'-167°30' E, 200-350 m, length 15,3 mm (same specimen as figs. 14-15) ; 22-23, paratype, coated, Pointe Sud du Grand Récif, 300 m, length 22,1 mm.

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