

# Results of the Rumphius Biohistorical Expedition to Ambon (1990)



## Part 5. Mollusca, Gastropoda, Muricidae

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Houart, R. Results of the Rumphius Biohistorical Expedition to Ambon (1990). Part 5. Mollusca, Gastropoda, Muricidae.

Zool. Med. Leiden 70 (26), xx.xii.1996: 377-397, figs. 1-34.— ISSN 0024-0672.

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**Key words:** Rumphius expedition; Indonesia; Ambon; Mollusca; Gastropoda; Muricidae.

This report deals with the species of Muricidae collected during the Rumphius Biohistorical Expedition on Ambon. At 44 stations, a total of 58 species in 23 genera of the prosobranch gastropod family Muricidae were obtained. The identity and the classification of several nominal taxa is revised. Four species are new to science and are described here: *Pygmaepterys cracentis* spec. nov. (Muricopsinae), *Pascula ambonensis* spec. nov. (Ergalataxinae), *Thais hadrolineae* spec. nov. and *Morula rumphiusi* spec. nov. (Rapaninae).

Some comments are included on the Muricidae described by Rumphius and on their identification. In his "Amboinsche Rariteitkamer" (1705) 21 species of muricids were included, of which 16 were illustrated by Rumphius or Schijnvoet. The identity of those species is determined. During the Rumphius Biohistorical Expedition seven of these species have been refound.

### Introduction

The Rumphius Biohistorical Expedition in Ambon (Moluccas, Indonesia) was held from 4 November till 14 December, 1990. The primary goal of the expedition was to collect marine invertebrates on the localities mentioned by Rumphius (1705). The general account, with a list of stations, was published by Strack (1993); it contains the history of the expedition and a detailed description of each station, with photographs.

The family Muricidae is represented in the samples with 58 species, all of which collected in the shallow-water coastal areas around the island. Fourteen species, one of which an unidentified *Aspella*, belong to the Muricinae. Three species, one of which new, belong to the Muricopsinae. Fourteen species, one of which new, belong to the Ergalataxinae. The other 27 species, two of which new, belong to the Rapaninae.

Unless stated otherwise, the material is stored in the Nationaal Natuurhistorisch Museum (Leiden).

### Material and Methods

Each species' name is followed by (1) a reference to Rumphius if it was illustrated in his book, (2) the list of material examined (the station number, and, between parenthesis, the number of collected specimens), and (3) sometimes remarks. For additional information about the localities, see Strack (1993).

#### Abbreviations:

AMS	= Australian Museum, Sydney, Australia
ANSP	= Academy of Natural Sciences of Philadelphia, USA
IRSNB	= Institut Royal des Sciences Naturelles de Belgique
MHNG	= Muséum d'Histoire Naturelle, Genève, Switzerland
MNHN	= Muséum National d'Histoire Naturelle, Paris, France
NM	= Natal Museum, Pietermaritzburg, South Africa
NMNZ	= Museum of New Zealand, Wellington
NMR	= Natuurmuseum, Rotterdam, The Netherlands
RMNH	= Nationaal Natuurhistorisch Museum, Leiden, The Netherlands
ZMA	= Zoologisch Museum, Amsterdam

### The Muricidae of Rumphius' Amboinsche Rariteitkamer

At least 16 species of Muricidae from Ambon were illustrated by Rumphius and Schijnvoet (1705: pls 24, 26, 27). Some of his illustrations are almost unrecognizable, however, and may even belong to other families. Schijnvoet (the editor of the "Amboinsche Rariteitkamer") at least added two species which do not belong to the molluscan fauna of Ambon, viz. *Bolinus brandaris* from the Mediterranean Sea and *B. cornutus* from West Africa.

#### Plate 24

**Fig. C.** Probably *Drupa rubusidaeus* (Röding, 1798). Several specimens were collected. Lamarck (1822: 238) erroneously refers to it for *Purpura hippocastanum* Linné [= *Thais aculeata* (Deshayes, 1844)].

**Fig. D.** Perhaps *Thais muricina* (Blainville, 1832), of which numerous specimens were collected. The figure is almost unrecognizable, however. It was used to illustrate *Purpura lagenaria* Lamarck, 1822, the type of which is in the MHNG; that species clearly belongs to the Buccinidae. Martens (1902) tentatively identified Rumphius' figure as *Purpura javanica*, a species with a much more angulate shell.

**Fig. E.** *Drupa ricinus* (Linné, 1758). More than 100 specimens were collected. Rumphius (1705: 82) also mentioned a smaller, brown species with a wide aperture, which Martens (1902: 116) identified as "*R. digitata* var. *lobata* Blainv.", actually *Drupa (Drupina) lobata* (Blainville, 1832). The species was not recorded during the Expedition so that Martens' identification remains doubtful.

**Fig. 5** (added by Schijnvoet). Probably *Mancinella alouina* (Röding, 1798). Several

specimens were collected. Linné (1758: 751) refers to it for his *Murex mancinella*, a rejected name (Opinion 911). Lamarck (1822: 238, 239) refers to it, both for *Purpura haemastoma* and for *Purpura mancinella*.

Fig. 6 (added by Schijnvoet). Perhaps *Thais aculeata* (Röding, 1798) or *T. bitubercularis* (Lamarck, 1822), but it is very doubtful.

#### Plate 26

Fig. A. *Chicoreus ramosus* (Linné, 1758). Three specimens were collected. Linné (1758: 747) refers to this figure in his description. Rumphius (1705: 85) also mentioned a smaller species with whiter shell and five rows of spines. It is probably *Hexaplex cichoreum* (Gmelin, 1791) also mentioned by Martens (1907: 116) (see below).

Fig. C. *Chicoreus brunneus* (Link, 1807). Many specimens were collected. Linné (1758: 747) refers to this figure for his *Murex saxatilis*. Rumphius described 4 variations: 1 "The grey, oblong, rough, wrinkled one, grey with three rows of blunt spines"; 2 "The black one, not longer as a small finger, with three rows of black and sharp spines, almost the whole shell is black as if it was burned, but inasmuch that one sees white furrows in between"; 3 "The brown one, of same size but with longer spines and of a dark brown colour"; 4 "The pale one is pale yellow or dirty white, with a broad lip at the aperture, also a broad tail with blunt spines". "The second one is common but the other ones are rarely found". Without illustrations it is impossible to verify if these forms belong to different species, or if all or part of them are variations of *C. brunneus*. Martens (1902) identified the illustrated shell as *Murex adustus* Lamarck, a synonym of *C. brunneus*.

Fig. D. *Homalocantha scorpio* (Linné, 1758). This species was not recorded during the expedition, but it probably occurs in Ambon. Linné (1758: 747) refers to this figure in his description.

Fig. F. *Haustellum haustellum* (Linné, 1758). This species was not collected during the expedition, but it is certainly present in Ambon. Linné (1758: 746) refers to this figure.

Fig. G. *Murex tribulus* Linné, 1758. This species was not collected during the expedition, but it occurs in Ambon. Linné (1758: 746) refers to this figure. Lamarck (1822: 157) refers to it in his description of *M. crassispina*, a synonym of *M. scolopax* (Dillwyn, 1817); this species is recorded from the Red Sea, the Gulf of Oman and the Persian Gulf (Ponder & Vokes, 1988: 49), but not from Indonesia. Martens (1902) identified this figure as possibly *Murex martinianus* Reeve (= *M. trapa* Röding, 1798), but *M. trapa* has fewer spines on the siphonal canal.

Fig. 1 (added by Schijnvoet). *Chicoreus axicornis* (Lamarck, 1822). The species was not collected during the expedition but does occur in Ambon. Lamarck (1822: 163) refers to this figure.

Fig. 2 (added by Schijnvoet). *Hexaplex cichoreum* (Gmelin, 1791). The species was not collected during the expedition, but it probably occurs in Ambon. It is already known from Kai Besar and the Aru Islands (coll. R. Houart). Linné (1758: 747) refers to this figure (and to figure C) for *Murex saxatilis*.

Fig. 3 (added by Schijnvoet). *Murex pecten* Lightfoot, 1786 (with a reference to Rumphius). The species was not collected during the expedition, but it is certainly present in Ambon. The identification as *M. tenuispina* Lamarck, 1822, a junior syno-

nym of *M. pecten*, by Martens (1902) is correct. The illustration was added by Schijnvoet but the species was described by Rumphius (1705: 86).

**Fig. 4** (added by Schijnvoet). *Bolinus brandaris* (Linné, 1758). A Mediterranean species.

**Fig. 5** (added by Schijnvoet). *Bolinus cornutus* (Linné, 1758). A West African species.

#### Plate 27

**Fig. E.** *Purpura persica* (Linné, 1758). The species was not collected during the expedition, but it probably occurs in Ambon. Linné (1758: 738) refers to Rumphius. *P. rudolphi* Lamarck, 1822 cited by Martens (1902: 117) is, at my opinion, a synonym of *P. persica*.

#### Muricidae collected by the Expedition (1990)

MURICIDAE Rafinesque, 1815

MURICINAE Rafinesque, 1815

*Murex (Murex) tenuistrostrum* Lamarck, 1822

Material.— Stn 04 (1).

Remarks.— *Murex tenuistrostrum* is a rather common species in the tropical Pacific Ocean. The species was not illustrated by Rumphius. The presence of *Murex tenuistrostrum* in the Island of Ambon is mentioned by Ponder & Vokes (1988).

*Chicoreus (Chicoreus) ramosus* (Linné, 1758)

Rumphius, 1705: pl. 26, fig. A.

Material.— Stn 01 (1), 16 (1), 31 (1).

*Chicoreus (Rhizophorimurex) capucinus* (Lamarck, 1822)

Material.— Stn 14 (33).

*Chicoreus (Triplex) brunneus* (Link, 1807)

Rumphius, 1705: pl. 26, fig. C.

Material.— Stn 01 (6), 03 (4), 04 (19), 05 (3), 16 (1), 17 (8), 18 (3), 20 (7), 21 (18), 35 (12), 36 (2), 37 (2), 39 (1).

*Chicoreus (Triplex) microphyllus* (Lamarck, 1822)

Material.— Stn 17 (1).

Remarks.— *Chicoreus microphyllus* was not reported by Rumphius, but the geographical distribution of the species (Houart, 1992: fig. 164) includes the Island of Ambon.

*Chicoreus (Triplex) paini* Houart, 1983

Material.— Stn 20 (1).

Remarks.— Ambon is a new record for the species, which was originally described from the Solomon Islands and Papua New Guinea.

*Chicoreus (Triplex) palmarosae* (Lamarck, 1822)

Material.— Stn S4 (1).

*Chicoreus (Triplex) saulii* (Sowerby, 1841)

Material.— Saparua, Booi, december 1990 (1).

*Chicoreus (Triplex) torrefactus* (Sowerby, 1841)

Material.— Stn 05 (1), 17 (1), 18 (1), 35 (1).

*Chicomurex laciniatus* (Sowerby, 1841)

Material.— Stn 04 (1), 21 (1), 31 (1).

*Naquetia triqueter* (Born, 1778)

Material.— Stn 16 (1), 18 (1), 23 (1).

*Aspella ponderi* Radwin & D'Attilio, 1976

Material.— Stn 27 (1).

*Aspella spec.*

Material.— Stn 11 (1).

Remarks.— The shell seems to be different from any other known Indo-West Pacific species of *Aspella*, but it is both incomplete and juvenile.

*Homalocantha anatomica* (Perry, 1811)

Material.— Stn 39 (1).

MURICOPSINAE Radwin & D'Attilio, 1971

*Favartia brevicula* (Sowerby, 1834)

Material.— Stn 27 (1).

*Murexiella rosamiae* (D'Attilio & Myers, 1985)

Material.— Stn 17 (1).

*Pygmaepterys cracentis* spec. nov.  
(figs 10-13)

Material.— Stn 05, Leitimur, Tg. Benteng, 1 m, in sand, among coral boulders (holotype RMNH 9441 and 1 paratype, juvenile, RMNH 57153); Stn 17, SE-side of Pombo Island (1 paratype, RMNH 57154). Other material.— Pulau Seribu, N.W. of Java (paratype IRSNB).

Description.— Shell up to 11.8 mm in length at maturity, delicate, squamous. Spire very high, with 1.5 protoconch whorls, and up to 5 weakly convex, narrow teleoconch whorls. Suture obscured by small axial lamellae. Protoconch small, globose. Whorls rounded, smooth. Terminal varix unknown (eroded).

Axial sculpture of teleoconch whorls consisting of narrow ribs, and webbed varices, in addition to numerous, prominent growth lamellae. First and second whorl with 7 ribs, third with 6, penultimate whorl with 4 or 5, and 1 or 2 low intervarical varices, last whorl with 3 wing-like varices and a single, very low intervarical axial node. Spiral sculpture of high, prominent, very squamous, about equally broad cords: 3 cords, and a narrower one on shoulder from first to fourth whorl; last whorl with 10 cords.

Aperture small, narrow, ovate. Columellar lip smooth, adherent. Anal notch broad. Outer lip weakly erect, crenulate, with 8 strong, elongate denticles within (holotype). Siphonal canal short, broad, open, with axial webbing extending up to the extremity.

Greyish-white, occasionally with darker bands on shoulder and on base of body whorl; aperture slightly darker.

Remarks.— The most similar species with three axial varices on the last teleoconch whorl (instead of five or six as most species of *Pygmaepterys*), is *Pygmaepterys menoui* Houart, 1990, from New Caledonia. It differs in the more angulate and shouldered last whorl, in the more irregularly shaped spiral cords, differing in prominence, in the more angulate aperture, and in the fewer (six or seven) and lower apertural denticles. Moreover, *P. menoui* begins to form three axial varices and one intervarical node at the third teleoconch whorl. The other species with three varices on the last whorl, *P. dondani* (Kosuge, 1984) differs in many ways, and does not need to be compared here.

Etymology.— Latin "cracentis": slender, graceful.

ERGALATAXINAE Kuroda & Habe, 1971

*Ergalatax contracta* (Reeve, 1846)

Material.— Stn 11 (1), 35 (2), 36 (1).

*Ergalatax margariticola* (Broderip, 1833)

Material.— Stn 01 (47), S1 (29), 03 (152), 04 (65), 05 (5), 06 (2), 09 (7), 11 (8), S10 (1), 14 (23), 17 (49), 18

(191), 20 (33), 21 (26), 23 (9), 26 (110), 27 (119), 30 (1), 34 (48), 35 (61), 36 (17), 37 (9), 39 (8).

Remarks.— *Ergalatax margariticola* was not illustrated by Rumphius (1705), although it is very common in Indonesia and in the whole Indo-West Pacific.

*Orania bimucronata* (Reeve, 1846)  
(figs 14-15)

Material.— Stn 14 (38); stn 36 (2).

Remarks.— *Orania bimucronata* differs from the similar *O. livida* (Reeve, 1846), collected in the same area (fig. 16), in its broader, fewer, more nodose spiral cords, smooth shoulder, fewer apertural denticles, and different colour of the aperture, which is light grey or peach in *O. bimucronata*, while dark brown in *O. livida*.

*Orania ficula* (Reeve, 1848)

Material.— Stn 21 (1), 28 (4), 29 (20), 32 (13), 33 (8), 35 (6).

*Orania livida* (Reeve, 1846)  
(fig. 16)

Material.— Stn 14 (8).

Remarks.— See under *Orania bimucronata* (Reeve, 1846) for a comparison with that species.

*Orania walkeri* (Sowerby, 1903)

Material.— Stn 05 (1), 21 (1), 23 (7), 35 (4), 37 (2).

*Pascula darrosensis* (Smith, 1884)

Material.— Stn 27 (2), 39 (1).

*Pascula ochrostoma* (Blainville, 1832)

Material.— Stn S11 (1), 15 (1), 17 (3), 18 (2), 21 (3), 23 (1), 26 (2), 37 (1).

*Pascula ambonensis* spec. nov.  
(figs 17-18)

Material.— Stn 30, Hitu, Suli, in sand, near coral (holotype RMNH 57155).

Description.— Holotype, only specimen available for study, 9.4 mm in length. Spire very high, acute, with 3+ protoconch whorls, and 5 elongate, narrow, weakly spinose, teleoconch whorls. Suture adpressed. Protoconch conical, smooth. Terminal varix raised, curved, of sinusigera type.

Axial sculpture of teleoconch whorls consisting of high, narrow, sharp varices, each with short, broad spinelets on the intersection with primary spiral cords: 8 varices from first to fourth whorl, last whorl with 7 varices, each with 3 low, acute spines, and 2 abapical spinelets. Additional axial sculpture consisting of numerous, thin, growth lamellae. Spiral sculpture of high, squamous, primary and secondary cords, and threads: 1 cord on first whorl; 2 primary cords, 4 or 5 threads and several threads on shoulder on second and third whorl; 2 primary cords, 1 secondary cord, 1 or 2 threads, and several threads on shoulder on penultimate whorl; 3 primary cords, 1 secondary cord between each pair of primary cords, 2 abapical secondary cords, shoulder with 1 primary cord just below the suture, and 1 secondary abapical cord on last whorl.

Aperture small, ovate. Columellar lip smooth, adherent. Anal notch broad, moderately deep. Outer lip subadult in the unique specimen. Siphonal canal very short, broad, open.

Light tan, with light brown or reddish-brown primary and secondary spiral cords. Aperture light tan.

Remarks.— *Pascula ambonensis* is similar to *P. lefevreiana* (Tapparone Canefri, 1880 [= *P. benedicta* (Melvill & Standen, 1895), and *P. paucimaculata* (Sowerby, 1903)], but it differs in its spiral sculpture, relatively smaller aperture, more apparent, sharper axial ribs, in the fewer axial growth lamellae, and in the more spine-like projections on the axial varices.

Etymology.— *ambonensis*: from the Island of Ambon.

*Spinidrupa euracantha* (A. Adams, 1853)

Material.— Stn 11 (1).

*Muricodrupa fenestrata* (Blainville, 1832)

Material.— Stn 16 (4).

*Muricodrupa fiscella* (Gmelin, 1791)

Material.— Stn 17 (2), 21 (1), 27 (17).

*Lataxiena kochiana* (Sowerby, 1900)

Material.— Stn 34 (1), 35 (1).

*Maculotriron serriale* (Deshayes, 1831)

Material.— Stn 01 (1), 03 (1), 04 (2), 05 (2), 17 (5), 18 (10), 20 (3), 23 (22), 26 (7), 27 (11), 30 (1), 34 (4), 37 (7), 39 (5), 44 (2).

RAPANINAE Gray, 1853

*Thais (Thalessa) aculeata* (Deshayes, 1844)

(fig. 1)



Rumphius, 1705: pl. 24, fig. 6? (see introduction).

Material.— Stn S8 (2), 3 (8), 11 (9), 17 (1), 27 (1), 39 (64).

Remarks.— Although classified in *Mancinella* Link, 1807 by Tröndle & Houart (1992: 97), *T. aculeata*, the type species of *Thalessa* H. & A. Adams, 1853, is now included in *Thais* Röding, 1798, on basis of its shell and radula structure. The radula (fig. 1) and shell of *T. aculeata* suggest that this species is more closely related to *Thais* than it is to *Mancinella* (fig. 4). Kool (1993: 213) tentatively synonymised *Thalessa* with *Thais*, but I prefer to maintain the former taxon as a subgenus, because it differs constantly from the nominal subgenus in its narrower shell, narrower columellar lip and narrower, more denticulate aperture.

*Thais (Thalessa) bitubercularis* (Lamarck, 1822)  
(figs 2, 19-20)

Rumphius, 1705: pl. 24, fig. 6? (see introduction).

Material.— Stn 01 (10), O3 (8), S3 (10), 04 (54), 07 (2), 09 (11), 14 (19), 18 (12), 35 (2), 37 (2), 39 (2), Martafons, littoral, 4 Oct. 1989, no station number (4).

Remarks.— This species is better known as *Thais kieneri* (Deshayes, 1844). Lamarck's nominal taxon has priority, however. The type material of *T. bitubercularis* and *T. kieneri* is in MHNG and MNHN, respectively.

*Thais (Thalessa) tuberosa* (Röding, 1798)

Material.— Stn 11 (2), 17 (5), 21 (1), 27 (3), 39 (3).

*Thais (Reishia) armigera* (Link, 1807)

Rumphius, 1705: pl. 14, fig. 4.

Material.— Stn S17 (1), 39 (1)

Remarks.— *Reishia* was tentatively synonymised with *Thais* by Kool (1993), but recognized as subgenus of *Thais* by Fujioka (1985). *T. armigera* was included in *Stramonita* by Tröndle & Houart (1992: 92), following Fujioka (1985). However, the more slender and nodose shell of *T. armigera* is similar to that of *Thais bronni* (Dunker, 1861), type species of *Reishia*, and the radula is similar to *Thais* [(Kool, 1993: fig. 20 (F)] and *Reishia* (fig. 8). The species is here only tentatively included in *Reishia* on basis of these arguments.

*Thais (Semiricinula) marginatra* (Blainville, 1832)

Material.— Stn 01 (2), 03 (1), S06 (1), 11 (5), 27 (2), 31 (1), 39 (2), 40 (2).

Remarks.— *Thais marginatra* was included in *Thais*, subgenus *Thaisella* by Tröndle & Houart (1992) following Fujioka (1985: 244). However, *T. marginatra* is similar to *T. muricina*, the type species of *Semiricinula* in its small, high spired shell with denticulate and narrow aperture, in contrast to *Thaisella* with broad shell, with relatively low spire, and weakly lirate, broad aperture.

*Thais (Semiricinula) muricina* (Blainville, 1832)  
(figs 3, 26-30)

Rumphius, 1705: pl. 24, fig. D? (see introduction).

Material.— Stn 03 (3), S3 (14), 04 (32), 06 (1), 11 (2), 14 (75), 17 (5), 18 (10), 20 (3), 23 (1), 26 (2), 27 (4), 34 (2), 35 (1), 36 (8).

Remarks.— I now believe that *T. infumata* (Hombron & Jacquinot, 1853), considered as a valid species by Tröndle & Houart (1992: 93), is only a relatively slender form of *T. muricina*. Since 1992 I had the opportunity to examine many lots of this species, and intergrading specimens. Several lots from Ambon contain also both forms. After examination of specimens of *T. foliacea* (Conrad, 1837) from Hawaii (ANSP 9379, 77996, 116393), three of them being illustrated in Pilsbry & Bryan (1918), I now consider this taxon also as a synonym of *T. muricina*. See also under *T. marginatra*.

*Thais (? Semiricinula) squamosa* (Pease, 1868)  
(fig. 31)

Material.— Stn 03 (1), 11 (1), 17 (3), 27 (2), 30 (2).

Remarks.— The species is somewhat similar to *T. muricina*, but with a smaller, more rounded shell, with fewer, more strongly developed spiral cords, and more rounded knobs. No intergrading specimens between *T. muricina* and *T. squamosa* are known.

*Thais (Semiricinula) hadrolineae* spec. nov.  
(fig. 21)

Material.— Stn 17, S.E. side of Pombo Islands, intertidal, on reef (holotype RMNH 9442).

Description.— Holotype 15.8 mm in length, heavy, tuberculate. Spire high, acute, with 4.5 broad, angulate teleoconch whorls. Suture adpressed, obscured by small axial lamellae.

Axial sculpture of teleoconch whorls consisting of low, strong, broad, rounded ribs: 8 on first whorl, 7 from second to last whorl. Spiral sculpture of high, strong, smooth cords, and weak, squamous threads between each pair of cords on last whorl: first whorl with 1 cord, shoulder with 1 cord just below suture; second whorl with 1 cord, shoulder with 1 cord just below suture, and 2 abapical threads; third whorl with 1 cord, shoulder with 1 cord just below suture, and 2 or 3 abapical

threads; last whorl with 5 cords and narrow threads between each pair of cords, shoulder with 1 cord just below suture, and abapical threads. Spiral cords more strongly developed on varices, strongest on carinal periphery.

Aperture moderately small, ovate. Columellar lip with 2 strong cords, extending into the aperture; adapical cord strongest. Lip adherent. Anal notch conspicuous, moderately deep. Outer lip denticulate, with 5 strong lirae within; adapical lira more weakly developed. Siphonal canal very short, broad, open.

Blackish-brown. Spiral cords stained with orange on axial ribs, and white between them. Shoulder area blackish-brown. Edge of the aperture stained with blackish-brown, interior bluish-white.

Remarks.— No similar species has been found. The particular shell morphology, and colour differentiate it from any other known species.

Etymology.— From “hadros” (Greek: well-developed, strong), and “lineae” (Latin: cords).

*Mancinella alouina* (Röding, 1798)  
(fig. 4)

Rumphius, 1705: pl. 24, fig. 5.

Material.— Stn 01 (1), 04 (2), 17 (1), 27 (2), 35 (10), 36 (1), 39 (8).

*Taurasia striata* (Quoy & Gaimard, 1833)

Material.— Stn 04 (1).

*Drupella cornus* (Röding, 1798)

Material.— Stn 03 (2), 05 (2), 10 (23), 11 (3), 17 (6), 18 (1), 20 (13), 21 (3), 23 (2), 27 (10), 37 (1), 39 (5).

*Drupella fragum* (Blainville, 1832)

Material.— Stn 17 (2).

*Drupella rugosa* (Born, 1778)

Material.— Stn 04 (4), 06 (1), 17 (1), 20 (2), 21 (1), 30 (1).

Remarks.— *Drupella rugosa* is illustrated in Fujioka (1982: pl. 1: figs 7-12, 16; pl. 4: figs 1-6) as *Drupella concatenata* (Lamarck, 1822) a synonym.

*Morulaanaxares* (Kiener, 1835)

Material.— Stn 01 (1), 03 (7), 09 (3), 11 (21), 17 (41), 18 (78), 20 (8), 21 (27), 26 (11), 31 (1), 39 (3).

*Morula funiculata* (Reeve, 1846)

Material.— Stn 05 (3)

*Morula granulata* (Duclos, 1832)

Material.— Stn 03 (66), S3 (46), S6 (2), 09 (8), 11 (64), 17 (48), 21 (9), 26 (6), 27 (5), 30 (4), 39 (145), 40 (4).

*Morula musiva* (Kiener, 1835)

Material.— Stn 01 (6), 02 (1), 03 (1), 04 (5), 07 (1), 09 (1), 17 (1), 31 (2), 35 (6), Ambon, Martafons, littoral, 4 October 1989 (no station number) (1).

*Morula nodicostata* (Pease, 1868)

Material.— Stn 16 (1), 20 (1), 39 (6).

*Morula parva* (Reeve, 1846)  
(figs 22-25)

Material.— Stn 17 (5), 21 (2), 30 (1).

Remarks.— *Morula parva* is a small species, very similar to *Morula echinata* (Reeve, 1846). It differs in the broader, more irregularly shaped spiral cords, less prominent spines, and different arrangement of black, white, and orange colour pattern.

In 2 lots (stn 17 and stn 30) a small buccinid shell is found additionally, which is very similar to *M. parva* in shape, size and colour (uniformly blackish-brown spiral cords, and white spiral cords with orange nodes), with a same arrangement of blackish-brown and white-orange cords.

One of the two syntypes of *M. parva* was illustrated by Cernohorsky (1978: 77) and is here also illustrated (figs 22-23). The species has not been recorded since its description from Luzon, in the Philippine Islands.

*Morula rumphiusi* spec. nov.  
(figs 5-6, 32-34)

Material.— Stn 18, Hitu, East side of Laha, up to and including Tawiri, intertidal, on and under stones (holotype RMNH 9443; paratypes: 94 RMNH 9444/1 figured, 9445/62, 57156/31, 3 AMS C.304716, 3 IRSNB I.G. 28.186, 3 MNHN, 3 NM L1614/T1320, 3 NMNZ M.270385, 3 NMR 15.974, 3 ZMA Moll. no. 3.95.009, 6 coll. R. Houart, 3 coll. H. Strack (Dordrecht), 3 coll. A.F. de Jong (Rotterdam), 3 coll. W. Backhuys (Oegstgeest), 3 coll. MZB (Bogor); stn 21, Hitu, Mamala 2 paratypes RMNH 57157; stn 27, Leitimur, Hutumuri 1 paratype RMNH 57158.

Other material (not paratypes).— Mozambique Island, rocks in harbour, NM L1463 (25); Indonesia, Numfoor, IRSNB IG 9223/1395 (13).

Description.— Shell up to 29.3 mm in length at maturity, heavy, stout. Spire high, with 6 broad, shouldered teleoconch whorls; protoconch unknown (eroded in all specimens). Suture adpressed.

Axial sculpture of first teleoconch whorl unknown (eroded). Other whorls with high, strong, rounded ribs: 8 on second whorl, 9 from third to fifth whorl, 8 or 9 on last whorl. Spiral sculpture of numerous, low, strong, squamous, primary and secondary cords, broader, and more strongly developed on axial ribs, giving the shell a

nodose appearance. Shoulder with cords of approximately equal size and prominence.

Aperture moderately small, ovate. Columellar lip narrow, smooth, rim adherent, weakly detached abapically. Anal notch conspicuous, deeply channelled. Outer lip weakly crenulate, with 5 weak denticles within: 3 abapical denticles closer together than 2 adapical ones, with larger space between 3 abapical and 2 adapical denticles. Rarely with 6 denticles (additional one between 2 adapical denticles), or with obsolete or nearly obsolete denticles. Siphonal canal very short, broad, open.

Blackish-brown with white blotches between axial ribs, on carinal spiral cords, and on siphonal canal. Aperture brown or blackish-brown with lighter coloured denticles.

Rachidian tooth of radula with long central cusp, low lateral denticles, and long lateral cusps. Marginal area smooth (figs 5-6).

Remarks.— The species is similar to *Morula musiva* (Kiener, 1835), but the shell differs in having a more irregular spiral sculpture, broader spiral cords, smaller, more regularly shaped and differently placed apertural denticles, and a darker colour, also of the aperture. Other species are clearly less similar, and all differ by the apertural morphology. The specimens of *M. rumphiusi* from Mozambique slightly differ in having occasionally more strongly developed, and fewer (seven or eight) axial ribs.

Etymology.— Named after G.E. Rumphius.

*Habromorula bicatenata* (Reeve, 1846)

Material.— Stn 11 (2).

Remarks.— The genus *Habromorula* was described by Houart (1995) to include species usually classified in *Spinidrupa* Habe & Kosuge, 1966. The remaining monotypic genus *Spinidrupa* was transferred from the Rapaninae to the Ergalataxinae.

*Habromorula biconica* (Blainville, 1832)

Material.— Stn 17 (2), 25 (1).

*Nassa sarta* (Bruguière, 1789)

Material.— Stn 03 (3), 17 (5).

*Drupa (Drupa) morum* (Röding, 1798)

Material.— Stn 03 (1), S5 (2), 11 (8), 17 (11), S17 (2), 27 (5), 39 (6).

*Drupa (Drupa) ricinus* (Linné, 1758)

Rumphius, 1705: pl. 24, fig. E.

Material.— Stn S5 (1), 11 (5), 17 (19), 21 (9), 27 (13), 39 (65).

*Drupa (Drupina) grossularia* (Röding, 1798)

Material.—Stn 03 (1), S8 (1), 17 (14), 20 (3), 21 (19), 23 (1), 26 (4), 27 (1).

*Drupa (Ricinella) rubusidaeus* (Röding, 1798)

Rumphius, 1705: pl. 24, fig. C.

Material.—Stn 03 (1), 11 (1), 17 (8), 21 (1), 27 (2), 39 (1).

### Acknowledgements

I am grateful to H.L. Strack (Foundation for the Advancement of Biohistorical Research, Dordrecht, The Netherlands) who gave me the opportunity to study this material. I also wish to thank P. Bouchet (Muséum d'Histoire Naturelle, Paris) and A. Warén (Natural History Museum, Stockholm) for preparation and SEM work of the radulae, G.M. Davis and G. Rosenberg (Academy of Natural Sciences of Philadelphia) for the loan of specimens, and S.P. Kool (Boston College), H.L. Strack, and E.H. Vokes (Tulane University) for having read the manuscript critically and for their useful comments. Thanks also to the head and staff of the department of Malacology of the Institut Royal des Sciences Naturelles, Brussels, of the Muséum National d'Histoire Naturelle, Paris, and of the Natural History Museum, London, their friendliness and collaboration during my visits is greatly appreciated, and was an essential help for this, and for other papers.

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als mede allerhande Hoorntjes en Schulpen, die men in d'Amboinsche Zee vindt: Daar beneven zommige Mineraalen, Gesteenten, en soorten van aarde, die in d'Amboinsche, en zommige omleggende Eilanden gevonden worden: 28, 1-340, 43, 60 pls.— Amsterdam.

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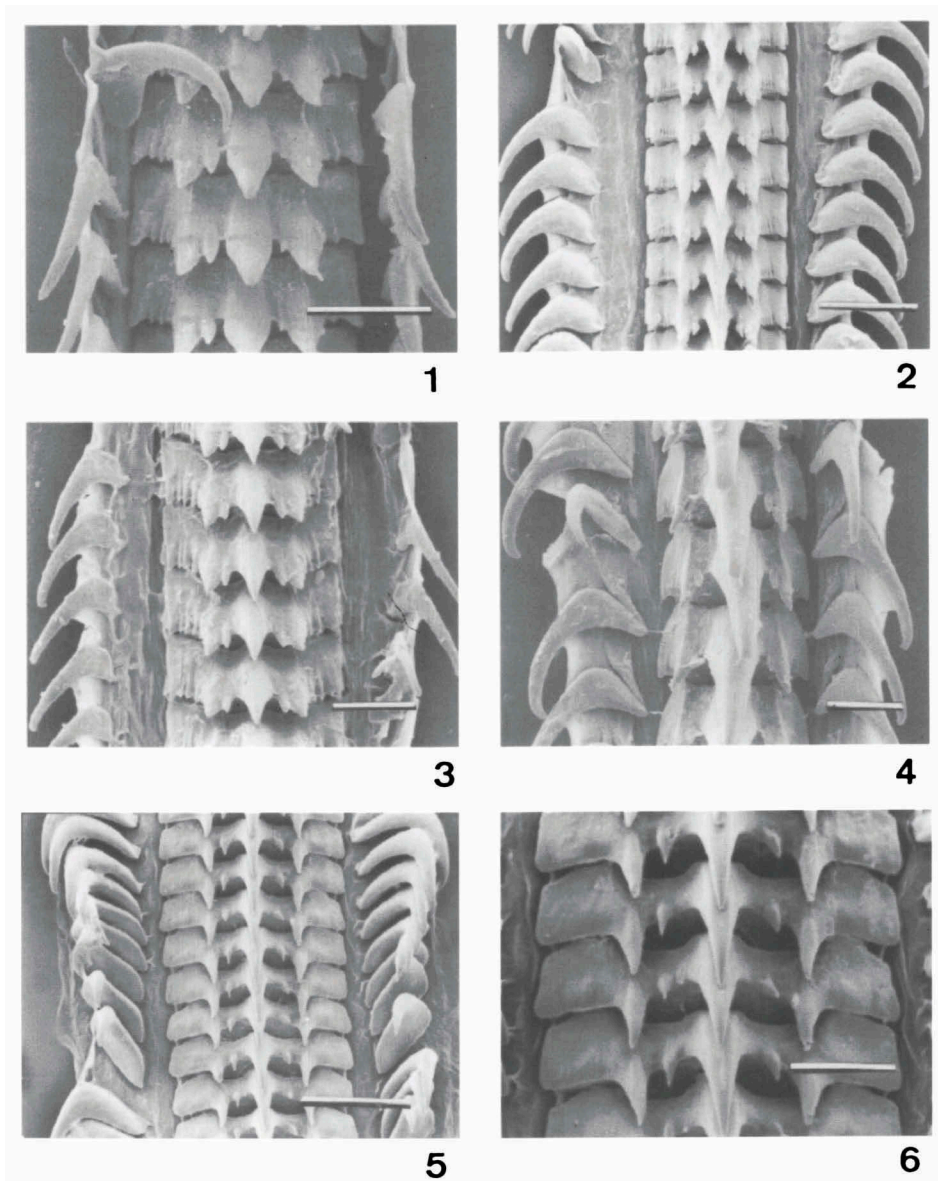
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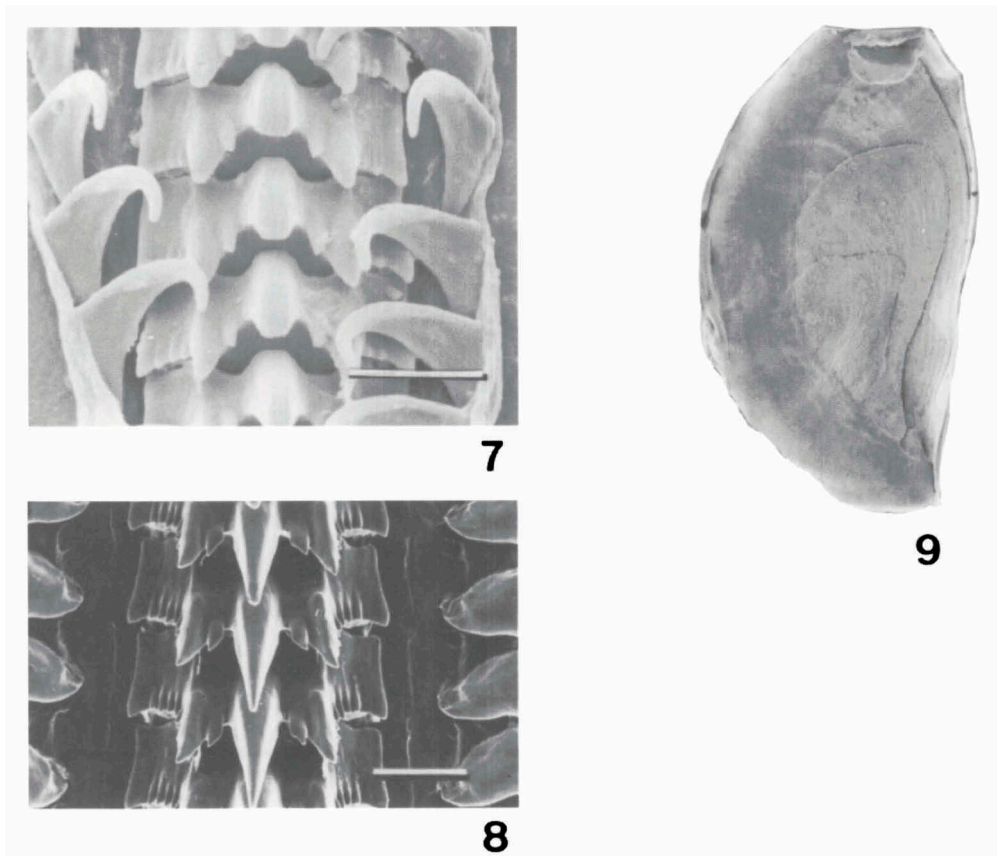
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Edited: E. Gittenberger & J. Goud



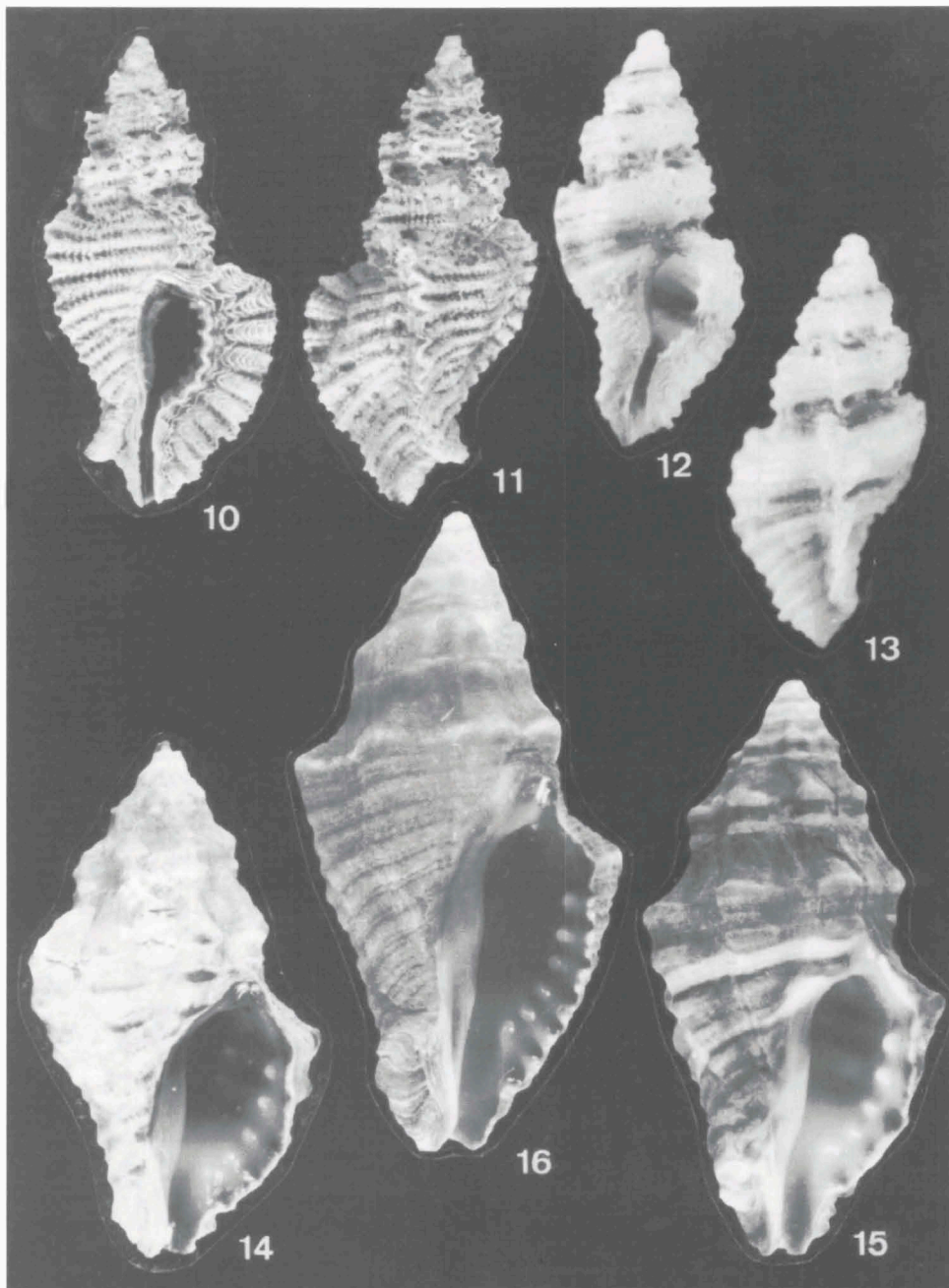
Figs 1-6, radulae; fig. 1, *Thais (Thalessa) aculeata* (Deshayes, 1844), Ambon (scale bar: 50 µm); fig. 2, *Thais (Thalessa) bitubercularis* (Lamarck, 1822), Ambon (scale bar: 100 µm); fig. 3, *Thais (Semiricinula) muricina* (Blainville, 1832), Ambon (scale bar: 50 µm); fig. 4, *Mancinella alouina* (Röding, 1798), Ambon (scale bar: 50 µm); figs 5-6, *Morula rumphiusi* spec. nov., Ambon (scale bar: 5: 100 µm; 6: 50 µm).



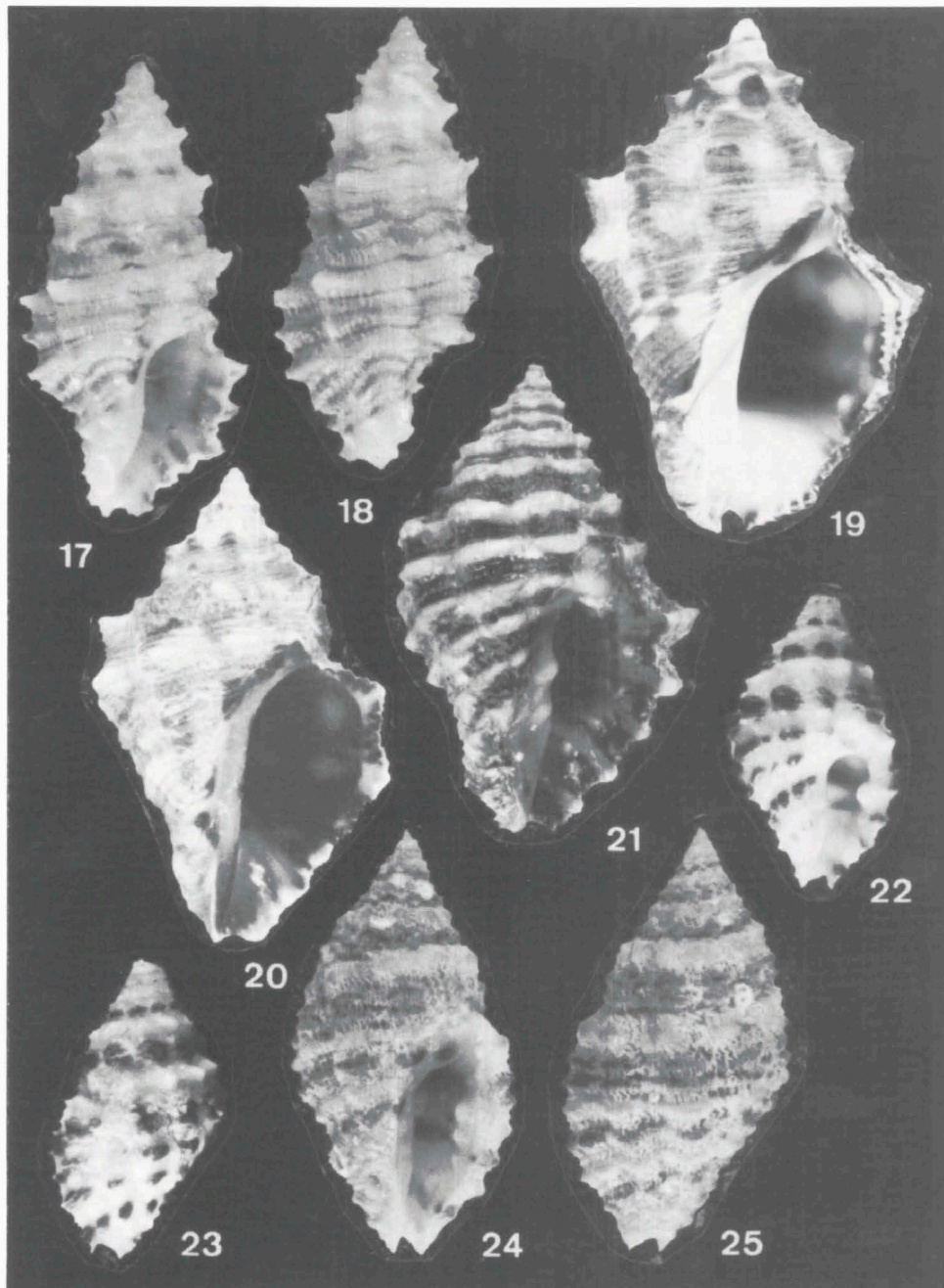


Figs 7-8, radulae; fig. 7, *Morula parva* (Reeve, 1846), Ambon (scale bar: 20  $\mu\text{m}$ ); fig. 8, *Thais (Reishia) bronni* (Dunker, 1861), Korea (scale bar: 50  $\mu\text{m}$ ).

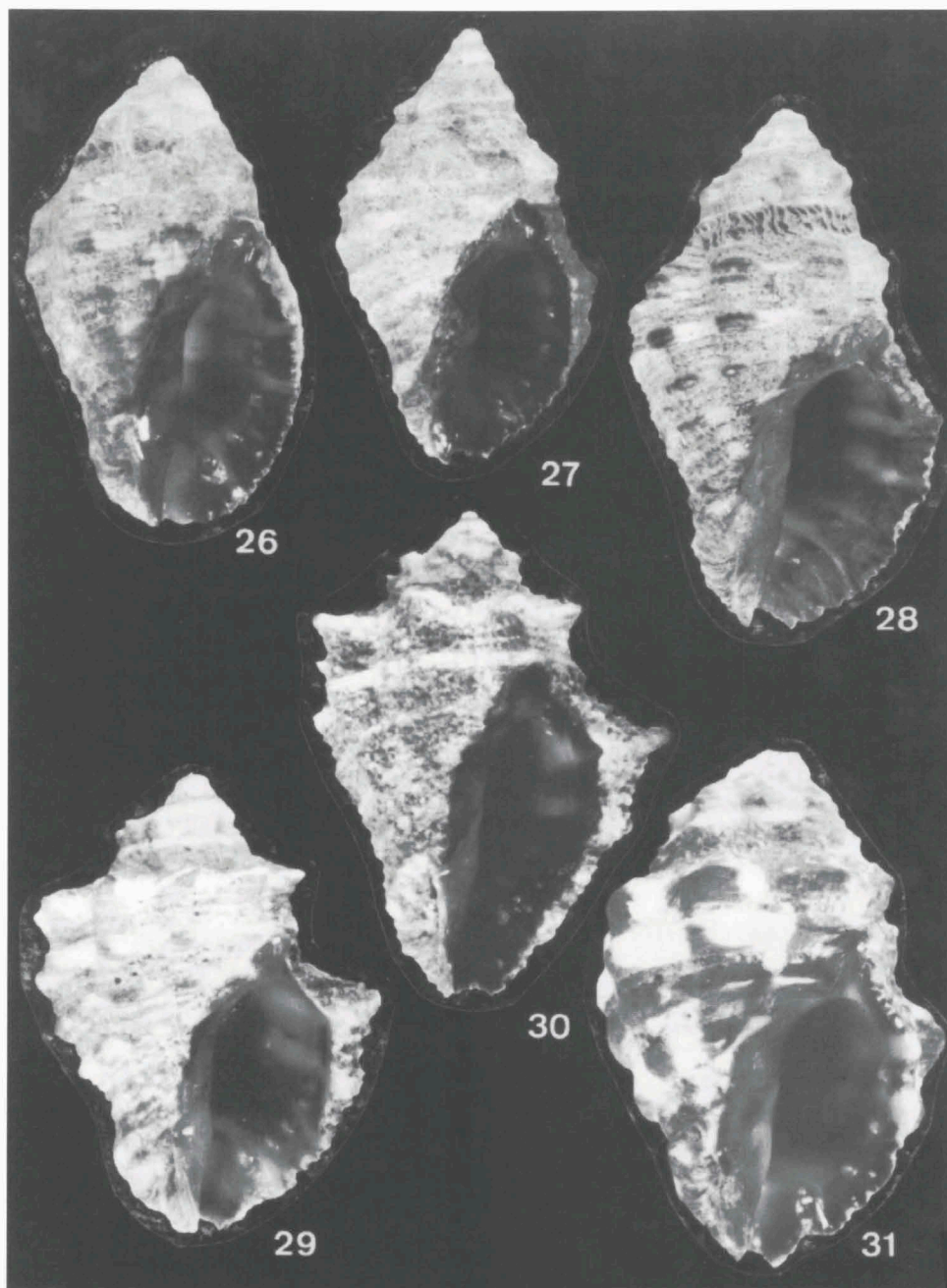
Fig. 9. Operculum of *Morula parva* (Reeve, 1846), Ambon (attached surface)



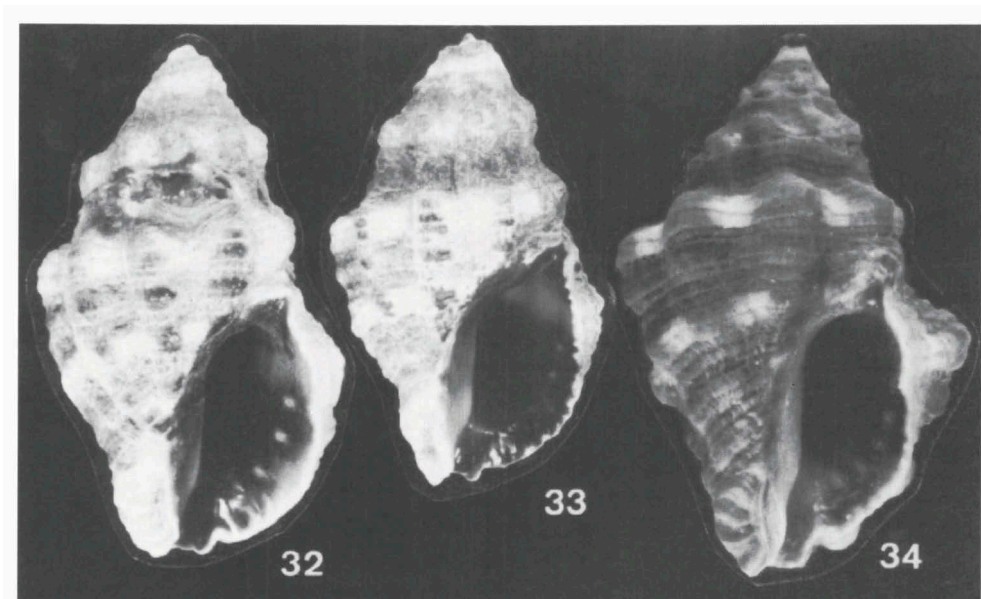
Figs 10-13, *Pygmaepterys cracentis* spec. nov., Ambon; figs 10-11, holotype RMNH 9441, 11.8 mm; figs 12-13, paratype IRSNB, 8.3 mm; figs 14-15, *Orania bimucronata* (Reeve, 1846), Ambon; fig. 14, Stn 14, 22.1 mm; fig. 15, Stn 14, 22.7 mm; fig. 16, *Orania livida* (Reeve, 1846), Ambon, stn 14, 24.3 mm.



Figs 17-18, *Pascula ambonensis* spec. nov., Ambon, holotype RMNH 57135, 9.4 mm; figs 19-20, *Thais bitubercularis* (Lamarck, 1822), Ambon; fig. 19, Stn 14, 33.4 mm; fig. 20, Stn 14, 27 mm; fig. 21, *Thais (Semiricunula) hadrolineae* spec. nov., Ambon, holotype RMNH 9442, 15.8 mm; figs 22-23, *Morula parva* (Reeve, 1846); figs 22-23, syntype BMNH 1968471, Philippine Islands, Luzon, 8 mm; figs 24-25, Ambon, stn 17, 8.5 mm.



Figs 26-30, *Thais (Semiricinula) muricina* (Blainville, 1832), Ambon; fig. 26, Stn 04, 22 mm; fig. 27, Stn 18, 17.6 mm; fig. 28, Stn 18, 25.8 mm; fig. 29, Stn 17, 25.1 mm; fig. 30, Stn 20, 20.6 mm; fig. 31, *Thais (Semiricinula) squamosa* (Pease, 1868), Ambon, stn 17, 19.7 mm.



Figs 32-34, *Morula rumphiusi* spec. nov., Ambon; fig. 32, holotype RMNH 9443, stn 18, 21.4 mm; fig. 33, paratype RMNH 9444/1, stn 18, 18.9 mm; fig. 34, Mozambique Id, NM L1463, 18.4 mm.