

THE TAXONOMY OF SOME INDO-PACIFIC MOLLUSCA

Part 6

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Abstract. New geographical records are recorded for *Strombus* (*Dolomena*) *kleckhamae* Cernohorsky, *Phalium angasi bulla* (Habe), *Mitra pele* Cernohorsky, *M. hilli* Cernohorsky, and *Vexillum* (*Costellaria*) *takakuwai* Cernohorsky & Azuma. The radula, oviposition and taxonomy of *Vanikoro helicoidea* (Le Guillou) are described and discussed. *Phalium sophia* (Brazier) is considered to be specifically distinct from *P. bisulcatum* (Schubert & Wagner), and *Chicoreus steeriae* (Reeve) is only a long-spined form of *C. maurus* (Broderip). *Pterynotus barclayanus* (H. Adams) has chronological priority over *P. lienardi* (Crosse) and the family-group name Thaidinae dates from Jousseaume, 1888 rather than Suter, 1913. *Ricinula rosea* Reeve, is not the Caribbean *rosea* of authors, and the Indo-Pacific *Morula parva* (Pease) is a secondary homonym of *M. parva* (Reeve). *Risomurex muricoides* (C. B. Adams) and *Drupella cariosa* (Wood) are primary homonyms and should be replaced with *R. rutila* (Reeve) and *D. fenestrata* (Blainville) respectively. A lectotype is designated for *Oliva parkinsoni* Prior, 1975, a species described without a holotype designation. A population study of *Mitra chrysostoma* Broderip, has shown this species to be conspecific with *M. contracta* Swainson. Scaphandridae Sars, must be replaced by the earlier Cylichnidae H. & A. Adams, and *Tornatina decorata* Pilsbry, is an earlier name for *Retusa gaimardi* Finlay.

Family STROMBIDAE

Genus **Strombus** Linnaeus, 1758

Strombus Linnaeus, 1758, Syst. Nat. ed. 10: 742. Type species by SD (Montfort, 1810)
Strombus pugilis Linnaeus, 1758. Recent, Caribbean.

Subgenus **Dolomena** Iredale, 1931

Strombus (**Dolomena**) **kleckhamae** Cernohorsky, 1971 (Fig. 1)
1971. *Strombus* (*Dolomena*) *kleckhamae* Cernohorsky, Rec. Auckland Inst. Mus. 8: 131, figs. 1-3.

TYPE LOCALITY: Matupi I, Rabaul, New Britain.

The species was originally described from pumice deposits of Matupi I. It has also been recorded from Geelvink Bay, W. Irian and Indonesia (Dr R. T. Abbott, *in litt.*), and the most recent record of living specimens is from Tulagi, Solomon Is, in 183 m (*leg.* B. Bailey).

Family VANIKORIDAE

Genus **Vanikoro** Quoy & Gaimard, 1833

Vanikoro Quoy & Gaimard, 1833, Voy. L'Australabe, Zool. 2: 239. Type species by M *Sigaretus cancellatus* Lamarck, 1822. Recent, Indo-Pacific.

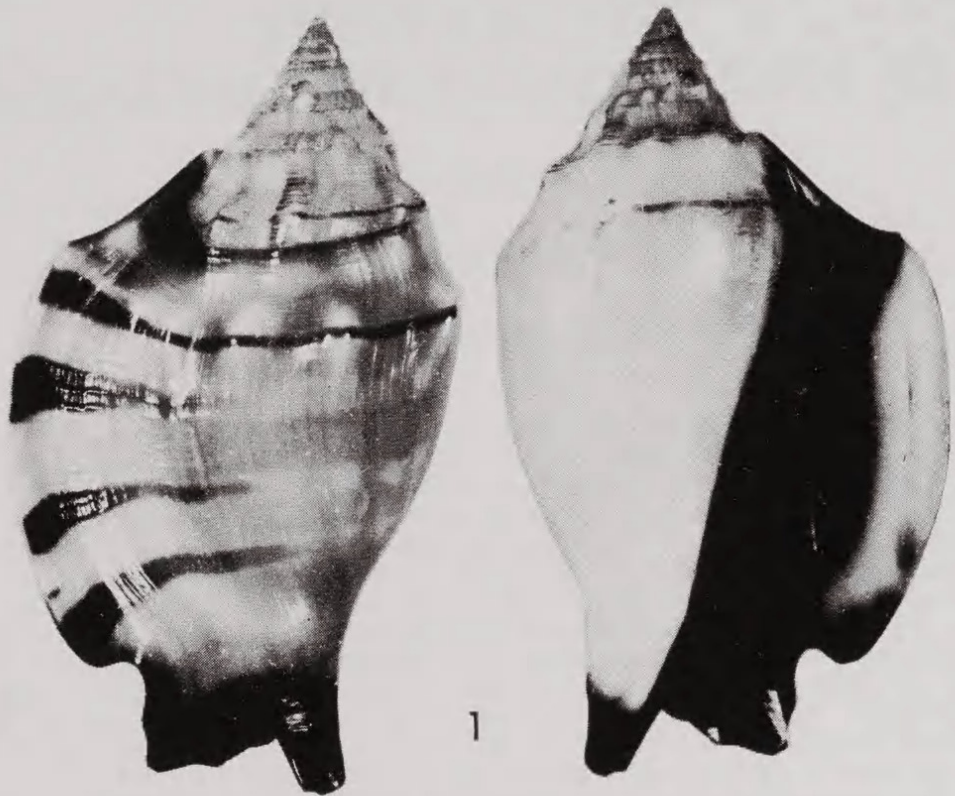


Fig. 1. *Strombus (Dolomena) kleckhamae* Cernohorsky. Tulagi, Solomon Is, 183 m; 44.6 x 26.0 mm.

Vanikoro helicoidea (Le Guillou, 1842)

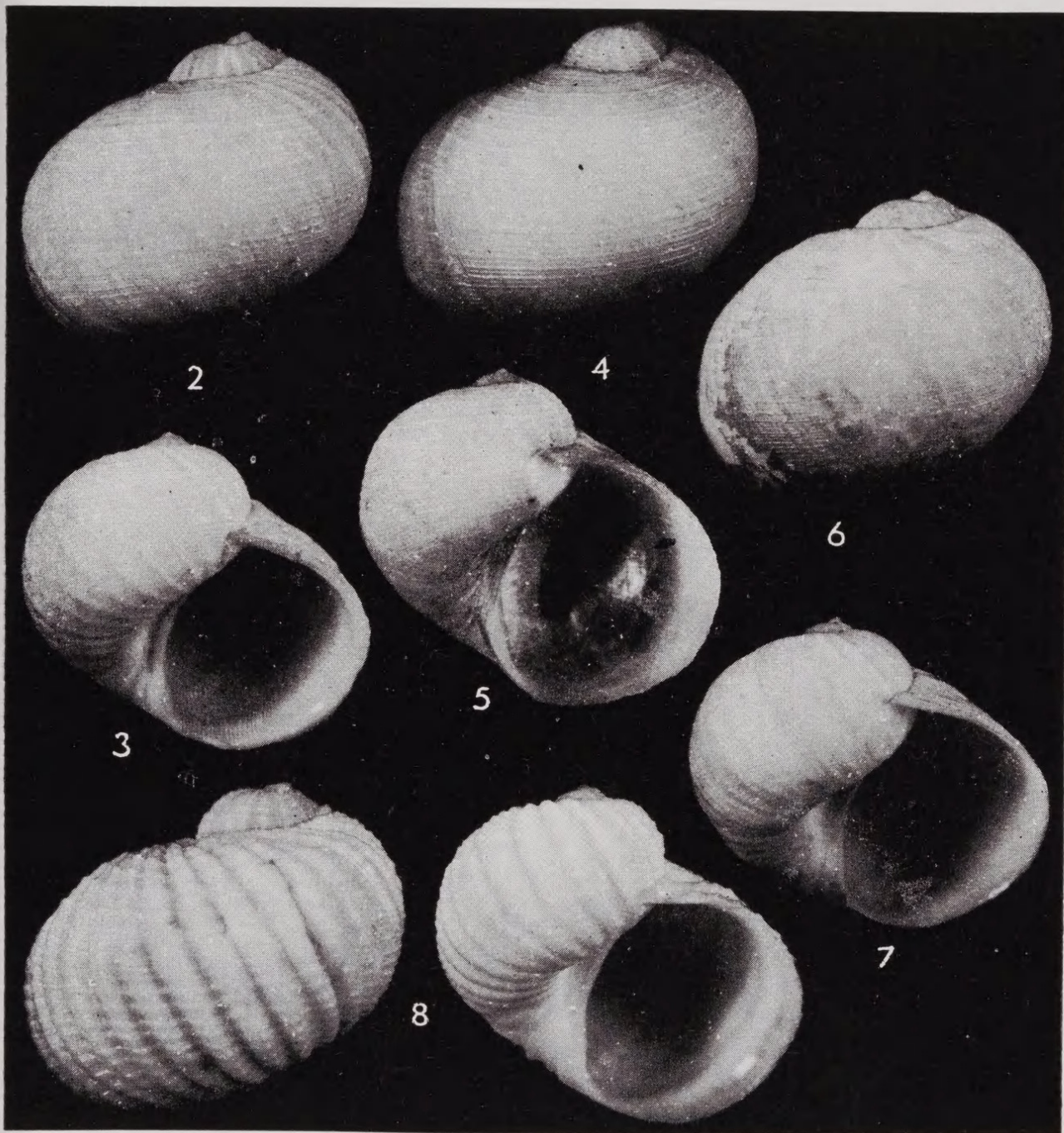
(Figs. 2-7, 9-11)

1842. *Sigaretus helicoideus* Le Guillou, Rev. Zool. Soc. Cuv. 5: 105.
 1844. *Narica ligata* Récluz, Proc. Zool. Soc. Lond. Pt. 11: 138; 1845 Récluz, Mag. Zool. p. 22, pl. 121, fig. 2.
 1844. *Narica helicoidea* Le Guillou, Rev. Zool. Soc. Cuv. 7: 8; 1845 Récluz, Mag. Zool. p. 51, pl. 131, fig. 1.
 1844. *Narica deshayesiana* Récluz, Proc. Zool. Soc. Lond. Pt. 11: 138; 1845 Récluz, Mag. Zool. p. 48, pl. 130, figs. 1, 2.
 1844. *Narica blainvilleana* Récluz, Proc. Zool. Soc. Lond. Pt. 11: 141; 1845 Récluz, Mag. Zool. p. 53, pl. 131, fig. 2.

TYPE LOCALITY: Amboina, Indonesia (*helicoidea*); Catanuam, Tayabas Prov., Luzon, Philippines (*ligata*); St. Nicholas, Cebu I, Philippines, and Catanuam, Tayabas Prov., Luzon, Philippines (*deshayesiana*); Moluccas, Indonesia (*blainvilleana*).

Workers of the last century separated species of *Vanikoro* on the basis of a widely or narrowly umbilicate or imperforate shell and the presence or absence of low axial riblets on the body whorl. Smith (1908) remarked that "the true *helicoidea* is also like *ligata* in some respects, but more narrowly umbilicated, and with the plications almost obsolete on the whole of the body whorl". Widely or narrowly umbilicate and even almost imperforate individuals are found within the same species. In the typical form *helicoidea* the spire whorls are axially plicate but on the body whorl the plications become obsolete. In the *ligata* and *deshayesiana* forms only the ventral side of the body whorl has low plicae and these become obsolete or absent on the dorsal side. Spiral striae are numerous and some spirals are stronger than others. In the form *deshayesiana* the spiral striae are finer, more numerous and tend to be more regular.

Three syntypes of *Narica ligata* Récluz, illustrated syntype (Figs. 2, 3), length 17.2 mm, width 17.8 mm, and four syntypes of *N. deshayesiana* Récluz, illustrated syntype (Figs. 6, 7), length 17.0 mm, width 17.7 mm, are in the British Museum (Natural History), London.

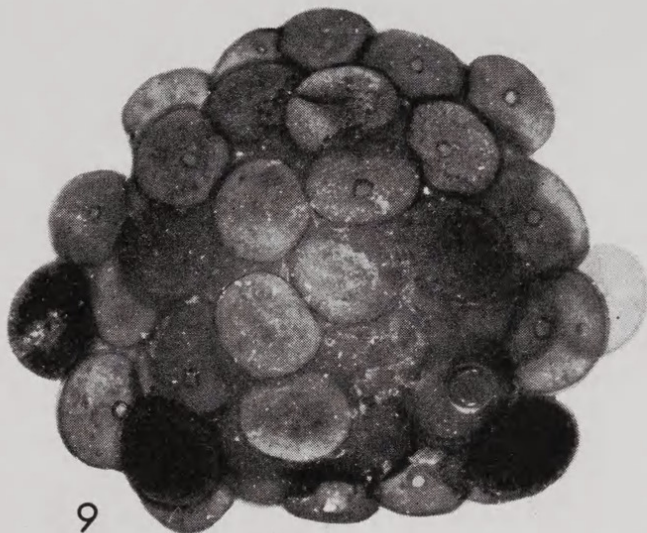


Figs. 2-8. 2-7. *Vanikoro helicoidea* (Le Guillou). 2, 3. Syntype of *Narica ligata* Récluz, BMNH, 17.2 x 17.8 mm. 4, 5. Specimen from Lakeba I., Lau group, Fiji Is; 14.5 x 14.6 mm. 6, 7. Syntype of *Narica deshayesiana* Récluz, BMNH 17.0 x 17.7 mm. 8.

Vanikoro plicata (Récluz), syntype BMNH; 17.9 x 18.2 mm.

Vanikoro plicata Récluz, 1844, is similar in form to *V. helicoidea*, but the former is more solid and the entire shell is sculptured with strong, elevated and oblique axial ribs and overriding primary spiral cords and finer intermediate spiral striae. Two syntypes of *V. plicata* are in the British Museum (Natural History), London, illustrated syntype length 17.9 mm, width 18.2 mm (Fig. 8).

An egg-mass measuring c. 22 mm in diameter and 3.5 mm in thickness and containing c. 40 egg-capsules, has been collected from under a female of *Vanikoro helicoidea* attached to the underside of a coral rock on Lakeba I, Lau group, Fiji Is (Figs. 9, 10). Egg-capsules were laid in a cluster, frequently one on top of the other



9



10

Figs. 9, 10. Spawn of *Vanikoro helicoidea* (Le Guillou) from Lakeba I., Lau group, Fiji Is. 9. Whole egg-mass c. 22 mm in diameter. 10. Enlarged egg-capsules showing central circular escape hatch.

and partly overlapping; capsules were irregularly lens-shaped and had a circular membrane-covered escape hatch in the centre. Egg-capsules measured 4.0-4.5 mm in diameter and c. 1.0 mm in thickness. Capsules were in different stages of development, some capsules were already empty and the escape opening lacked the membrane,

other capsules contained hundreds of fully-formed, brown miniature snails and other capsules still had hundreds of small, round, unsegmented yellowish eggs. The ready to hatch snails were all in the same stage of development indicating that no feeding on nurse-eggs takes place.

The radula of *Vanikoro helicoidea* is typically Hipponicacean, translucent-white, small, 2.4 mm in length and with 66 rows (+ 5 nascentes) of teeth (Fig. 11).

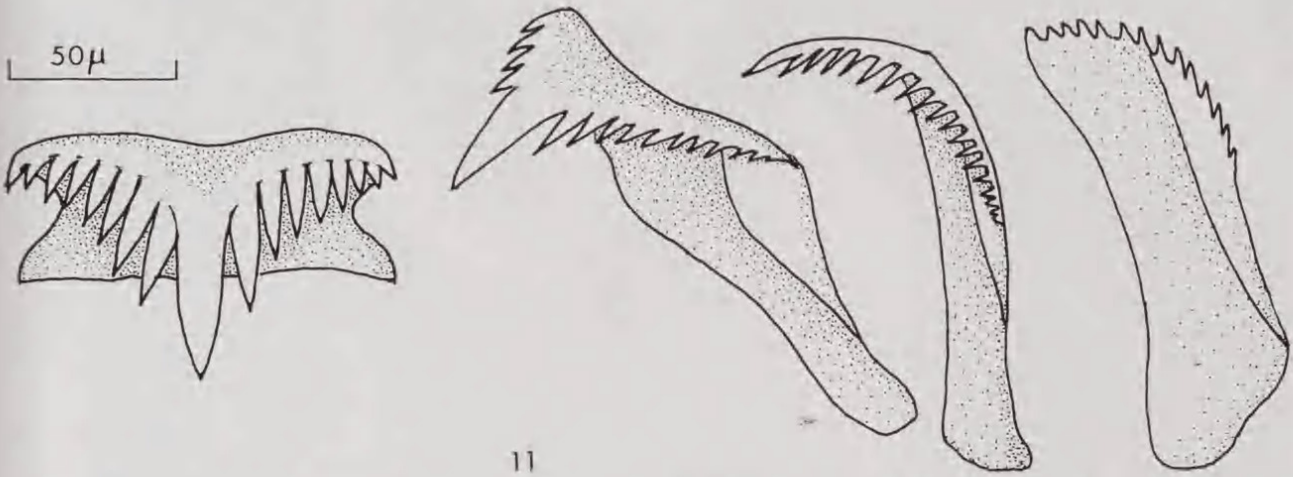


Fig. 11. *Vanikoro helicoidea* (Le Guillou). Half-row of radula from Lakeba I, Lau group, Fiji Is.♀.

Family CASSIDAE

Genus *Phalium* Link, 1807

Phalium Link, 1807, Besch. Nat.-Samml. Univ. Rostock p. 112. Type species by SD (Dall, 1909) *Buccinum glaucum* Linnaeus, 1758. Recent, Indo-Pacific.

Phalium angasi bulla (Habe, 1961)

(Fig. 12)

1961. *Semicassis bulla* Habe, Col. Illust. shells Japan 2: 44, pl. 21, fig. 5.

1968. *Phalium* (*Semicassis*) *glabratum bulla* (Habe), Abbott, Indo-Pacif. Moll. 2 (9): 145, pl. 8, figs. 7, 8; pl. 129.

TYPE LOCALITY: Tosa, Shikoku I, Japan, 50-100 fathoms (92-183 m).

Abbott (1968) reported the species from the Hawaiian Is and the Sino-Japanese region. The recent record of *bulla* from the Punta Eganio area of Mactan, Cebu, Philippines (*leg.* A. Deynzer) represents a westward extension in distribution and at the same time creates taxonomic problems. Abbott (*op. cit.*) considered *bulla* a subspecies of *P. glabratum* Dunker, a species he also reported from the Cebu area of the Philippines. The now sympatric occurrence of *glabratum* and *bulla* in the Philippines prevents a subspecific nomenclature. However, *bulla* is extremely close to the Australian *P. angasi* (Iredale, 1927) and a subspecific classification of *P. angasi bulla* (Habe, 1961) appears to be appropriate at this time.

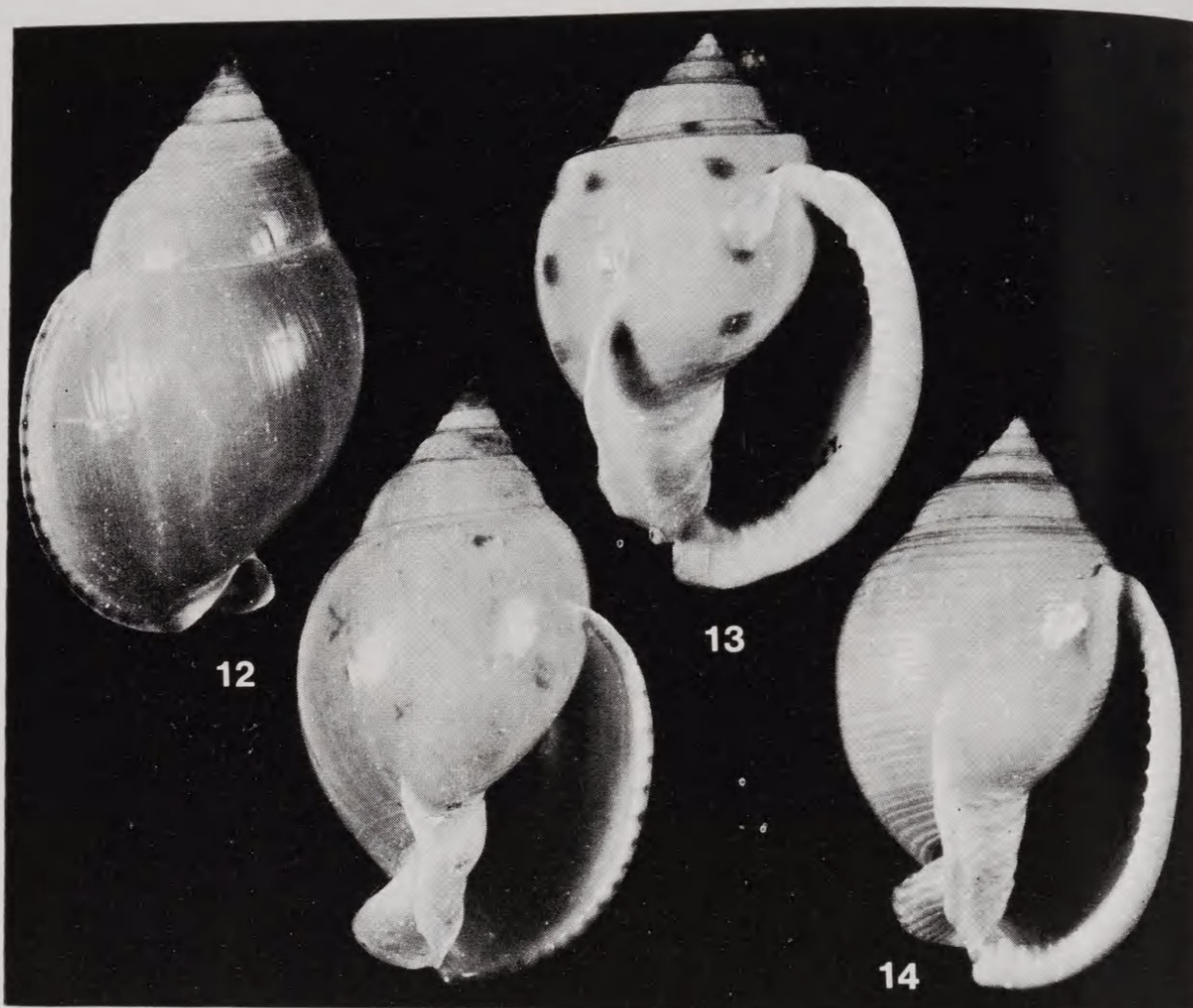
Phalium sophia (Brazier, 1872)

(Fig. 13)

1872. *Cassis sophia* Brazier, Proc. Zool. Soc. Lond. p. 617, pl. 44, fig. 2.

1968. *Phalium* (*Semicassis*) *bisulcatum sophia* (Brazier), Abbott, Indo-Pacific Moll. 2 (9): 131, pl. 8, fig. 12; pl. 115, figs. 1-8.

TYPE LOCALITY: Under Grassy Head, mouth of the Macleay River, N. of Port Jackson, N.S.W., Australia.



Figs. 12-14. Cassidae. 12. *Phalium angasi bulla* (Habe). Punta Eganio, Mactan, Cebu, Philippines; 58.4 x 35.2 mm. 13. *P. sophia* (Brazier). Tin Can Bay, Qld., Australia, 20 m; 73.5 x 52.7 mm. 14. *P. bisulcatum* (Sch. & W.) forma *diuturna* Iredale. Tin Can Bay, Qld., Australia, 20 m; 64.4 x 41.0 mm.

Abbott (1968) considered *sophia* Brazier as a subspecies of *P. bisulcatum* Schubert & Wagner, 1829). Both these species are trawled at Tin Can Bay, Queensland, Australia, in 20 m, without any intergrading specimens having been encountered. *P. sophia* differs from *P. bisulcatum* (Fig. 14) in the prominently tabulated whorls, smooth surface and concavely indented parietal callus-shield.

Family MURICIDAE

Genus *Chicoreus* Montfort, 1810

Chicoreus Montfort, 1810, Conchyl. Syst. 2: 611. Type species (Opinion 911 of ICZN) *Murex ramosus* Linnaeus, 1758. Recent, Indo-Pacific.

Chicoreus maurus (Broderip, 1833)

(Figs. 15-19)

- 1833. *Murex maurus* Broderip, Proc. Zool. Soc. Lond. Pt. 2: 174; 1834 Sowerby, Conch. Illust. Pt. 59: fig. 12 (figd. type); 1845 Reeve, Conch. Icon. 3: pl. 4, fig. 16; 1879 Sowerby, Thes. Conchyl. 4: 15, pl. 5, fig. 54.
- 1845. *Murex steeriae* Reeve, Conch. Icon. 3: pl. 8, fig. 28.
- 1879. *Murex sturiae* (sic) Reeve, Sowerby, Thes. Conchyl. 4: pl. 4, fig. 38.
- 1975. *Chicoreus steeriae* (Reeve), Salvat & Rives, Coq. Polynésie p. 311, fig. 192; 1976 Fair, Murex book p. 78, pl. 8, fig. 106.

1976. *Chicoreus maurus* (Broderip), Radwin & Attilio, Murex shells world, p. 39, pl. 5, fig. 5.

TYPE LOCALITY: Anaa I., Tuamotus (*M. maurus*); none (*M. steeriae*). The locality of Tuamotus given for *maurus* could be an error since the species appears to be endemic to the Marquesas Is.



Figs. 15-19. *Chicoreus maurus* (Broderip). 15. Syntype BMNH No. 197473, 49.2 x 27.0 mm. 16, 17. Syntype BMNH, 70.7 x 39.3 mm. 18, 19. Specimen from the Marquesas Is, 91.0 x 56.6 mm.

Recent authors (Vokes 1971, Salvat & Rives 1975, Fair 1976) consider *Chicoreus steeriae* (Reeve) to be a valid species from the Marquesas Is. and Vokes (op. cit.) and Fair (op. cit.) treat *C. maurus* (Broderip) as a distinct Indo-Pacific species. Recently, however, Radwin & D'Attilio (1976) considered *C. maurus* (Broderip) to be an earlier name for the species known as *C. steeriae* (Reeve), but the authors at the same time erroneously synonymized *Murex thomasi* Crosse, 1872, from the Marquesas Is with *maurus* Broderip. The taxon *M. thomasi* is occasionally cited as having been authored by Crosse and Fischer, but Crosse is the sole author.

The 3 syntypes of *M. maurus* Broderip, are in the British Museum (Natural History), London, No. 197473. The smallest and most mature specimen, dimensions 49.2 x 27.0 mm (Fig. 15) appears to be the specimen illustrated by Sowerby (1834). The largest syntype, dimensions 70.7 x 39.3 mm (Figs. 16, 17), is immature and the fronds on the second body whorl varix show signs of having been broken off due to wear.

The length of the body whorl fronds is very variable in *C. maurus* but the spire whorl fronds do not differ in length in either the *maurus* or the *steeriae* forms. In the latter form, however, the body whorl fronds are larger than in the typical form (Figs. 18, 19). Both forms have a pale rose base-colour which is ornamented with blackish-brown spiral cords and the ends of the fronds are bright rose in colour.

The holotype of *Murex thomasi* Crosse, is in the British Museum (Natural History), London, No. 1902.5.28.53., dimensions 45.3 x 26.3 mm (Fig. 20). The species has only very short fronds on the base of the shell and the remaining surface is completely frondless. It differs in shape from *C. maurus*, being more angulate in outline with strong varices and main spiral cords. *M. thomasi* is light orange-brown to pale fawn in colour and the apex, siphonal canal and aperture are frequently stained with pale rose (Fig. 21).

Genus *Pterynotus* Swainson, 1833

Pterynotus Swainson, 1833, Zool. Illust. (2), 3: expl. to pl. 100. Type species by SM (Swainson, 1833) *Murex pinnatus* Swainson, 1822 = *Purpura alata* Roeding, 1798. Recent, Indo-Pacific.

Swainson (1833, expl. to pl. 100) established the genus *Pterynotus* without originally included species. In the same work (op. cit., expl. to pl. 122) Swainson cited only one nominal species in the genus-group "*Pteronotus*" (misspelling of *Pterynotus*) and this species becomes the type species by subsequent monotypy (art. 69 (a) (ii) (2) of ICZN) rather than by subsequent designation as given by Vokes (1964).

Pterynotus barclayanus (H. Adams, 1873)

(Fig. 22)

1873. *Coralliophila barclayana* H. Adams, Proc. Zool. Soc. Lond. p. 205, pl. 23, fig. 1 (publ. June 1873).

1873. *Murex lienardi* Crosse, J. Conchyl. 21: 284 (publ. 16th July 1873); 1874 Crosse, J. Conchyl. 22: 74, pl. 3, fig. 4; 1880 Tapparone-Canefri, Ann. Soc. Malac. Belg. 15: 21.

1879. *Murex* (*Muricidea*) *barclayana* H. Adams, E. A. Smith, Proc. Zool. Soc. Lond. for 1878: 806 (Andaman Is).

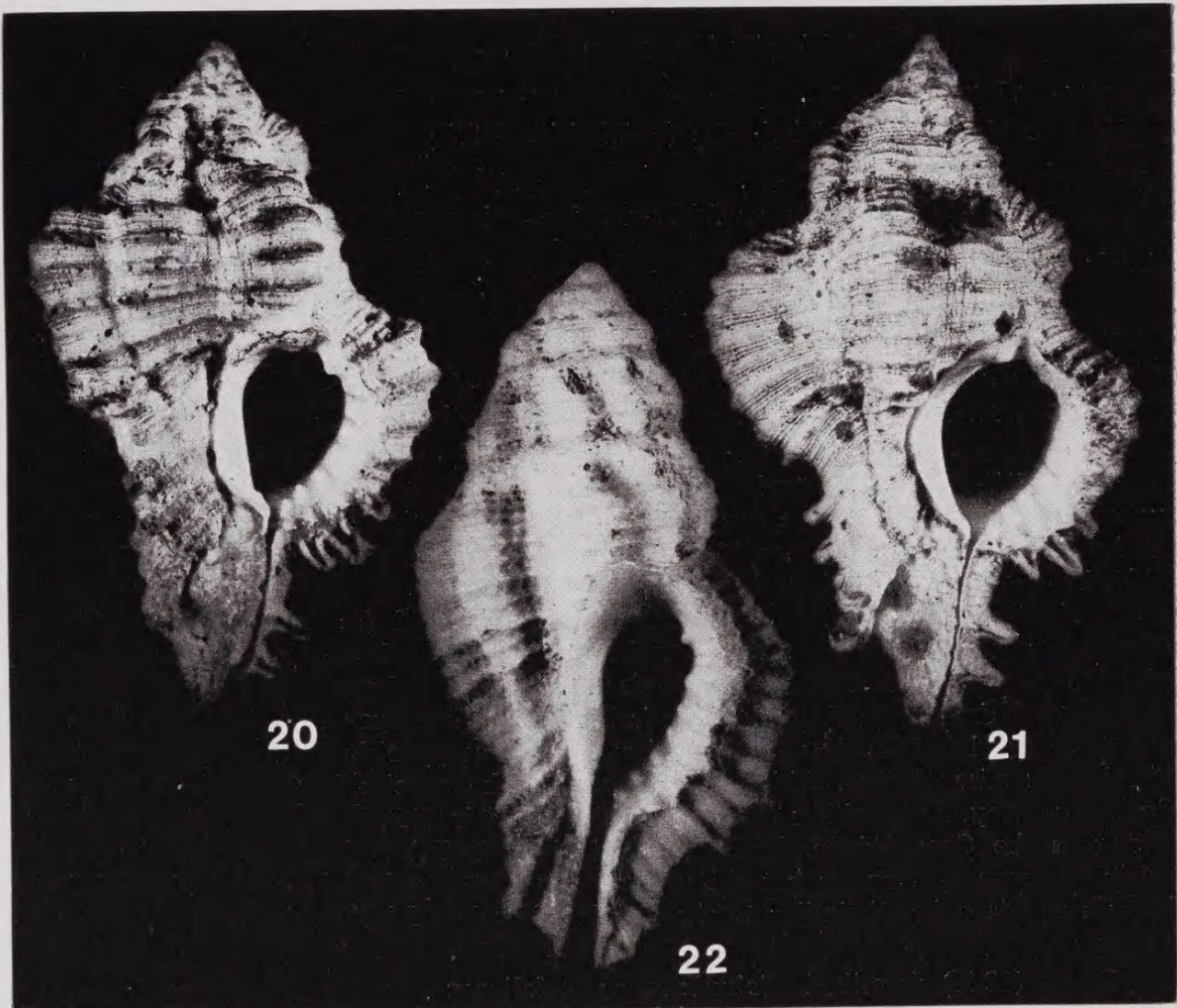
1976. *Pterynotus lienardi* Crosse, Fair, Murex book p. 54, pl. 13, fig. 162 (figd. holotype).

1976. *Pterynotus purpureus* Azuma, Jap. J. Malac. 35 (2): 47, fig. 1 (shell), fig. 2 (radula). TYPE LOCALITY: Mauritius (*barclayanus* and *lienardi*); off Tanegashima, Kagoshima, Japan (*purpureus*).

DISTRIBUTION: From Mauritius to the Andaman Is, Japan and the Solomon Is.

Tapparone-Canefri (1880) was the first author who considered *Murex lienardi* Crosse, conspecific with *Coralliophila barclayana* H. Adams, but incorrectly adopted *lienardi* as the name of the taxon. Both species have been recently discussed by Vokes (1971) and Fair (1976) and both authors follow Tapparone-Canefri (op. cit.) in considering *Pterynotus lienardi* (Crosse) to be the chronologically prior name for the species.

Coralliophila barclayana was described by H. Adams (1873) on page 205 of the "Proceedings of the Zoological Society of London" for 1873, and pages 1-240 were



Figs. 20-22. 20, 21. *Chicoreus thomasi* (Crosse). 20. Holotype BMNH No. 1902.5.28.53.; 45.3 x 26.3 mm. 21. Specimen from Tahuata, Marquesas Is, USNM; 57.6 x 35.4 mm. 22. *Pterynotus barclayanus* (H. Adams). Holotype BMNH No. 1878.128.25.; 27.7 x 14.8 mm.

published in June 1873 (see Duncan 1937). Part 3 of the "Journal de Conchyliologie" in which Crosse's (1873) description of *Murex lienardi* appeared was published on the 16th July 1873 (see Fischer-Piette 1937). *Coralliophila barclayana* H. Adams, has a chronological priority by 16 days over *Murex lienardi* Crosse.

The illustrations of *Coralliophila barclayana* and *Murex lienardi* as given by H. Adams (op. cit.) and Crosse (1874) and descriptions of the holotypes of these species as given by Fair (1976) and this author (herein), leave no doubt that the two species are conspecific.

Specimens are either purplish-white or have a strong mauve, violet or purple cast. The holotype of *C. barclayana* H. Adams, is in the British Museum (Natural History) No. 1878.128.25., dimensions 27.7 x 14.8 mm. The specimen is pinkish-white and has a violet colouring which is most saturated between the axial ribs, the outer lip has 8 denticles and the base of the columella 4 denticles, interior of aperture is violet (Fig. 22). The recently described *Pterynotus purpureus* Azuma, 1976, from Japan, is undoubtedly conspecific with *P. barclayanus* (H. Adams).

Subfamily THAIDINAE Jousseaume, 1888

This family-group is usually cited as Thaididae Suter, 1913, but Jousseaume (1888) erected the family Thaididae (ex-Thaisidae) 25 years earlier.

Genus *Morula* Schumacher, 1817

Morula Schumacher, 1817, Essai nouv. syst. pp. 68, 227. Type species by M. *M. papillosa* Schumacher, 1817 = *Drupa uva* Roeding, 1798. Recent, Indo-Pacific.

Morula rosea (Reeve, 1846)

(Fig. 23)

1846. *Ricinula rosea* Reeve, Conch. Iconia 3: pl. 6, sp. 46.

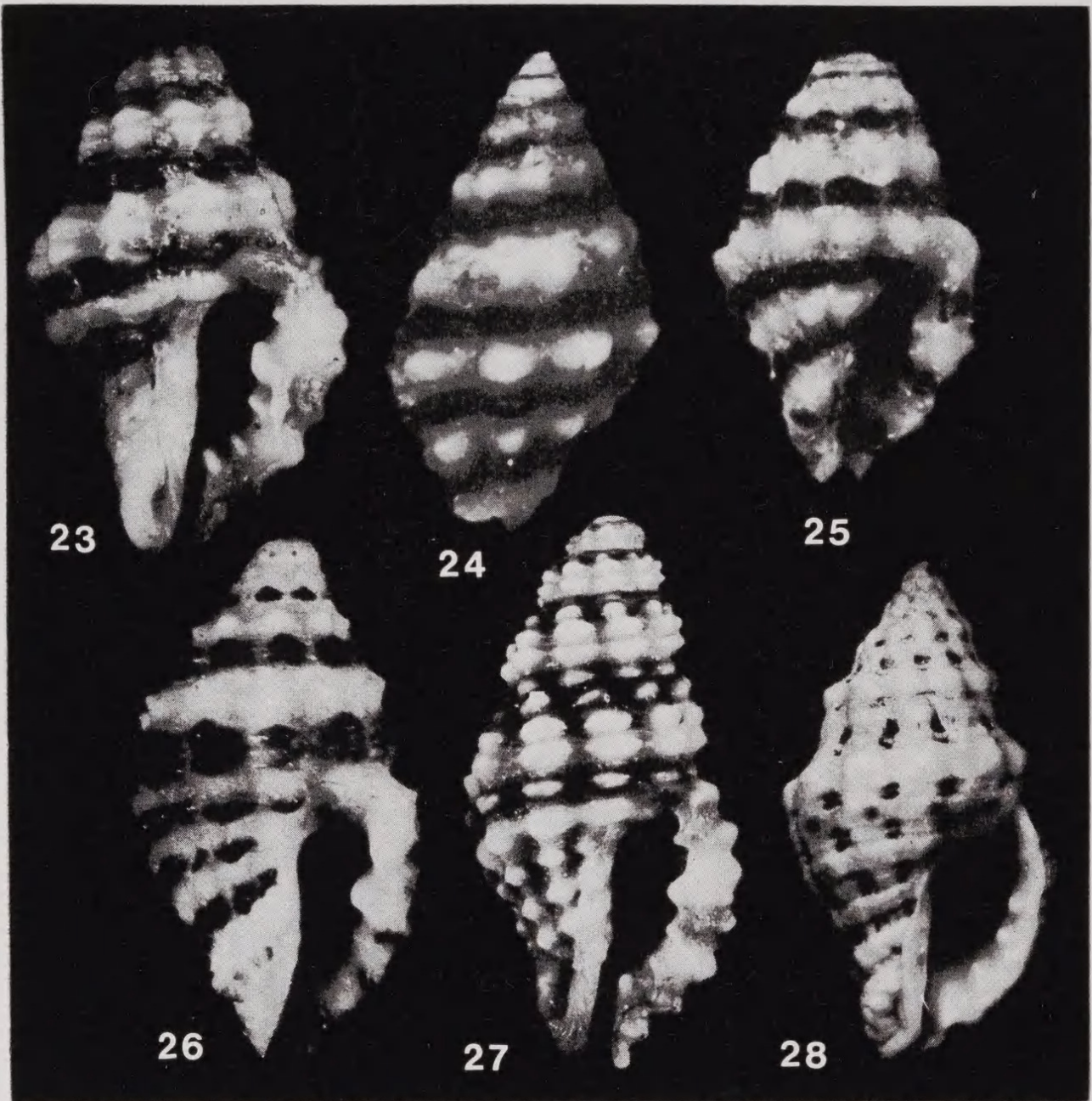
TYPE LOCALITY: Island of Masbate, Philippines, 5 fathoms (9 m).

Tryon (1883) claimed to have recognized *rosea* Reeve from the West Indies and suggested that the Philippine locality needed confirmation. He further placed *rosea* in the buccinid genus *Engina* Gray, with the Caribbean *Engina schrammi* Crosse, 1863, in synonymy. Dall (1889) reported *rosea* from the Gulf of Mexico but relocated the species in the muricid genus *Sistrum* Montfort, 1810 (= *Drupa* Roeding, 1798). All subsequent authors have considered *rosea* Reeve to be of West Atlantic origin. Warmke & Abbott (1961) place the species in the genus *Risomurex* Olsson & McGinty, 1958, and the specimen they illustrate is biconic, with a pronounced columellar callus and 2 strong plaits. The illustrated specimen is not conspecific with the type specimens of *Ricinula rosea* Reeve. Abbott (1974) placed the species in the ocenebrine genus *Ocenebra* Gray, but neither Vokes (1971) nor Fair (1976) consider the species to belong to the Ocenebrinae. Radwin & D'Atillio (1976) assigned the species to the muricine genus *Muricopsis* but the radula they illustrate is that of a typical thaidine *Morula* and is quite dissimilar to the radula of typical *Muricopsis*.

Reeve (1846) described *Ricinula rosea* as follows:

"Shell ovate, produced at the base, spire peculiarly shortened; whorls longitudinally nodosely ribbed, lip thickened, aperture small, rose-colour, zoned with blackish-brown."

Reeve's 4 syntypes of *Ricinula rosea* are in the British Museum (Natural History), London, No. 1968458, dimensions of illustrated syntype 10.8 x 6.3 mm. Adult specimens have an incoiled protoconch and a prominently constricted body whorl which gives the siphonal canal a produced appearance. The type-specimens are a species of *Morula* Schumacher, and are most probably of Indo-Pacific origin as indicated by the type-locality "Island of Masbate". The Caribbean "*rosea*" of authors will require a new name provided junior synonyms are unavailable.



Figs. 23-28. 23. *Morula rosea* (Reeve). Syntype BMNH No. 1968458, 10.8 x 6.3 mm. 24, 25. "*Morula parva*" (Pease) from Faone, Tahiti. 24. 5.4 x 3.0 mm (immature). 25. 4.8 x 3.0 mm (adult). 26. *M. parva* (Reeve). Syntype BMNH No. 1968471, 8.1 x 5.0 mm. 27. *M. rutila* (Reeve). Syntype BMNH No. 1968461, 12.0 x 5.5 mm. 28. *Drupella fenestrata* (Blainville). Naviti I., Fiji Is; 32:5 mm.

"*Morula parva*" (Pease, 1868) [*nom. praeocc.*]

(Figs. 24, 25)

1868. *Engina parva* Pease, Americ. J. Conch. 3 (4): 276, pl. 23, fig. 11; 1883 Tryon, Man. Conch. 5: 195, pl. 63, fig. 55; 1967 Orr-Maes, Proc. Acad. Nat. Sci. Philad. 119: 135, pl. 12, fig. G.

TYPE LOCALITY: Tuamotu Archipelago.

The species has originally been described in the buccinid genus *Engina* Gray, but actually belongs to the muricid genus *Morula* Schumacher. The species is very small, 4.0-7.0 mm in length, young specimens have a conical protoconch of $2\frac{1}{2}$ whorls but adult individuals have an in-rolled protoconch of $1\frac{1}{4}$ - $1\frac{1}{2}$ whorls. The shell is ornamented with alternate rows of pinkish-white and blackish-brown nodules.

Morula parva (Pease, 1868) is a secondary homonym of *Ricinula parva* Reeve, 1846, which is also a *Morula* (Fig. 26). If Pease's *parva* can be confirmed as a valid biospecies without available synonyms, the species will have to receive a substitute name when a revision of the moruline group is undertaken.

***Morula rutila* (Reeve, 1846)**

(Fig. 27)

1845. *Fusus muricoides* C. B. Adams, Proc. Boston Soc. Nat. Hist. 2: 3; 1950 Clench & Turner, Occ. Pap. Moll. Harvard Univ. 1 (15): 313, pl. 39, fig. 9 (*non Fusus muricoides* Deshayes, 1835).
1846. *Ricinula rutila* Reeve, Conch. Icon. 3: pl. 6, fig. 49.
1866. *Ricinula muricoides* (C. B. Adams), Krebs, Ann. Lyc. Nat. Hist. New York, 8: 396.
1883. *Engina rutila* Reeve, Tryon, Man. Conch. 5: 192, pl. 62, fig. 36.
1939. *Tritonalia (Ocinebrina) caribbaea* Bartsch & Rehder, Smiths. Misc. coll. 98: 7, pl. 1, fig. 1.
1958. *Risomurex muricoides* (C. B. Adams), Olsson & McGinty, Bull. Americ. Pal. 39 (177): 41.
1974. *Ocenebra (Risomurex) muricoides* (C. B. Adams), Abbott, Americ. Seashells ed. 2: 184, fig. 1922.
1976. *Muricopsis muricoides* (C. B. Adams), Radwin & D'Attilo, Murex shells world p. 168, pl. 2, fig. 3.

TYPE LOCALITY: Jamaica (*muricoides*); unknown (*rutila*); Old Providence I. Bahamas (*caribbaea*).

The name *Fusus muricoides* C. B. Adams, 1845, although firmly entrenched in West Atlantic malacological literature, is a primary homonym of *Fusus muricoides* Deshayes, 1835, which is an Eocene melongenid *Pugilina* from the Paris Basin.

Two syntypes of *Ricinula rutila* Reeve, are in the British Museum (Natural History), London, No. 1968461, dimensions of illustrated syntype 12.0 x 5.5 mm (Fig. 27). These syntypes are conspecific with *muricoides* C. B. Adams, which will have to bear the name *rutila* Reeve.

Genus ***Drupella*** Thiele, 1925

Drupella Thiele, 1925, Wiss. Ergeb. duet. Exp. "Valdivia", 17: 171.

The type-species and validity of the genus-group name *Drupella* in the Muricidae are at present under consideration by the International Commission on Zoological Nomenclature.

***Drupella fenestrata* (Blainville, 1832)**

(Fig. 28)

1828. *Murex cariosus* Wood, Suppl. Ind. Testac. p. 15, pl. 5, fig. 22a (*non* Linnaeus, 1767).
1832. *Purpura fenestrata* Blainville, Nouv. Ann. Mus. d'Hist. Nat. Paris 1 (2): 221, pl. 10, fig. 11.
1833. *Purpura cancellata* Quoy & Gaimard, Voy. L'Astrolabe 2: 563, pl. 37, figs. 15, 16 (*non* Roeding, 1798).
1846. *Ricinula elongata* Blainville, Reeve, Conch. Icon. 3: pl. 4, sp. 25 (*non Purpura elongata* Blainville, 1832).
1880. *Ricinula (Sistrum) cancellata* Quoy, Tryon, Man. Conch. 2: 188, pl. 58, figs. 242, 250.
1897. *Sistrum elongatum* Blainville, Sowerby, App. Mar. shells Sth. Africa, p. 6.
1903. *Sistrum cancellatum* (Quoy & Gaimard), E. A. Smith, Proc. Malac. Soc. Lond. 5: 377; 1906 E. A. Smith, Ann. Natal Govt. Mus. 1 (1): 40; 1939 M. Smith, Illust. Cat. Rock shells, p. 30, pl. 20, fig. 5.
1957. *Morula cariosa* Wood, Kaicher, Indo-Pacific sea shells, pl. 3, fig. 3.
1967. *Drupa (Morula) cariosa* (Wood), Orr-Maes, Proc. Acad. Nat. Sci. Philad. 119 (4): 130, pl. 11, fig. D.

1972. *Drupella cariosa* (Wood), Cernohorsky, Mar. shells Pacific 2: 126, pl. 36, fig. 1;
1975 Salvat & Rives, Coquill. Polynésie p. 316, fig. 213.
1973. *Drupa cancellatum* (Quoy & Gaimard), Kensley, Sea-shells Sth. Africa p. 136, fig.
463; 1974 Kensley in Barnard, Ann. Sth. Afric. Mus. 47 (5): 690.

Recent authors have reverted to the chronologically earliest name for the species, i.e. *Murex cariosus* Wood, 1828, which unfortunately is a primary homonym of *M. cariosus* Linnaeus, 1767. *Purpura cancellata* Quoy & Gaimard, 1833, a name used to this day by some authors, is also a primary homonym of *P. cancellata* Roeding, 1798, and the species should be known as *Drupella fenestrata* (Blainville, 1832).

Family OLIVIDAE

Genus *Oliva* Bruguière, 1789

Oliva Bruguière, 1789, Encyl. Méth. Hist. nat. vers 1: XV. Type species by SM (Lamarck, 1799) *Voluta oliva* Linnaeus, 1758. Recent, Indo-Pacific.

Oliva parkinsoni Prior, 1975

(Fig. 29)

1975. *Oliva parkinsoni* Prior, Keppel Bay Tidings Oct./Nov. p. 3, textfig.

1978. *Oliva* species Wolfe, Hawaiian Shell News 26 (2): 6, figs.

TYPE LOCALITY: Rabaul, New Britain, Papua New Guinea.

The validity of erection of the taxon *Oliva parkinsoni* published in the "Keppel Bay Tidings" (Prior 1975) had been queried both in private letters of malacologists and also in print (Wolfe 1978).



Fig. 29. *Oliva parkinsoni* Prior. Lectotype AIM No. TM-1359; 18.8 x 9.3 mm.

The description of *Oliva parkinsoni* appeared in a Club Journal, which is not exactly the ideal vehicle for descriptions of new taxa, and the description was not sent in by the author personally. The author also omitted to select a holotype. Despite the unusual way in which this taxon was erected, the description is nevertheless valid.

The author did supply a description, appended 2 textfigures, cited the type locality as Rabaul, New Britain and stated that the paratypes are in the Auckland Institute and Museum. All the above points make the species description valid and fulfill the requirements of the current Code of ICZN (1964). Recommendation 73a of ICZN (op. cit.) dealing with the selection of a holotype is not an article and therefore not binding.

The Auckland Institute and Museum received several paratypes of *Oliva parkinsoni* about 12 months after description. According to the author Dr. C. Prior (*in litt.*, 13-XII-1977) all these paratypes were used in the description of *Oliva parkinsoni* despite the fact that the selection of a holotype was omitted. To correct this oversight, a lectotype is here selected in accordance with article 74(a) of the Code of ICZN (1964). This lectotype bears the Auckland Institute and Museum registration No. TM-1359, length 18.8 mm, width 9.3 mm (Fig. 29).

Family MITRIDAE

Genus *Mitra* Lamarck, 1798

Mitra Lamarck, 1798, Tabl. Encyl. Méth. pl. 369. Type species by tautonomy *Voluta mitra* Linnaeus, 1758 (Opinion 885 of ICZN). Recent, Indo-Pacific.

Mitra pele Cernohorsky, 1970

(Fig. 30)

1970. *Mitra pele* Cernohorsky, Nautilus 83 (3): 99, figs. 3, 4.

TYPE LOCALITY: N.W. of Pitcairn I, Pacific Ocean, 65-70 fathoms (119-128 m).

I have recently examined specimens of *M. pele* trawled in 183 m-220 m at Panlao, Bohol, Philippines (*leg.* V. Dan). Both specimens were faded but well-preserved, slender individuals which closely resembled the slender Hawaiian paratype. The Philippine I record is a considerable westward extension from Pitcairn I. and the Hawaiian Is.

Mitra hilli Cernohorsky, 1976

(Fig. 31)

1976. *Mitra hilli* Cernohorsky, Rec. Auckland Inst. Mus. 13: 111, figs. 1-5.

TYPE LOCALITY: Cape Moreton, Queensland, Australia, 132 m.

This recently described species had a previously known Queensland-Taiwan distribution. This new record from Panlao, Bohol Province, Philippines (*leg.* V. Dan) considerably extends the species distributional range.

Subgenus *Nebularia* Swainson, 1840

Nebularia Swainson, 1840, Treat. Malac. pp. 130, 131. Type species by SD (Herrmannsen, 1847) *M. contracta* Swainson, 1820. Recent, Indo-Pacific.

Mitra (Nebularia) contracta Swainson, 1820

(Figs. 32-34, 37)

1820. *Mitra contracta* Swainson, Zool. Illust. (1), 1: pl. 18, top and bottom figs.

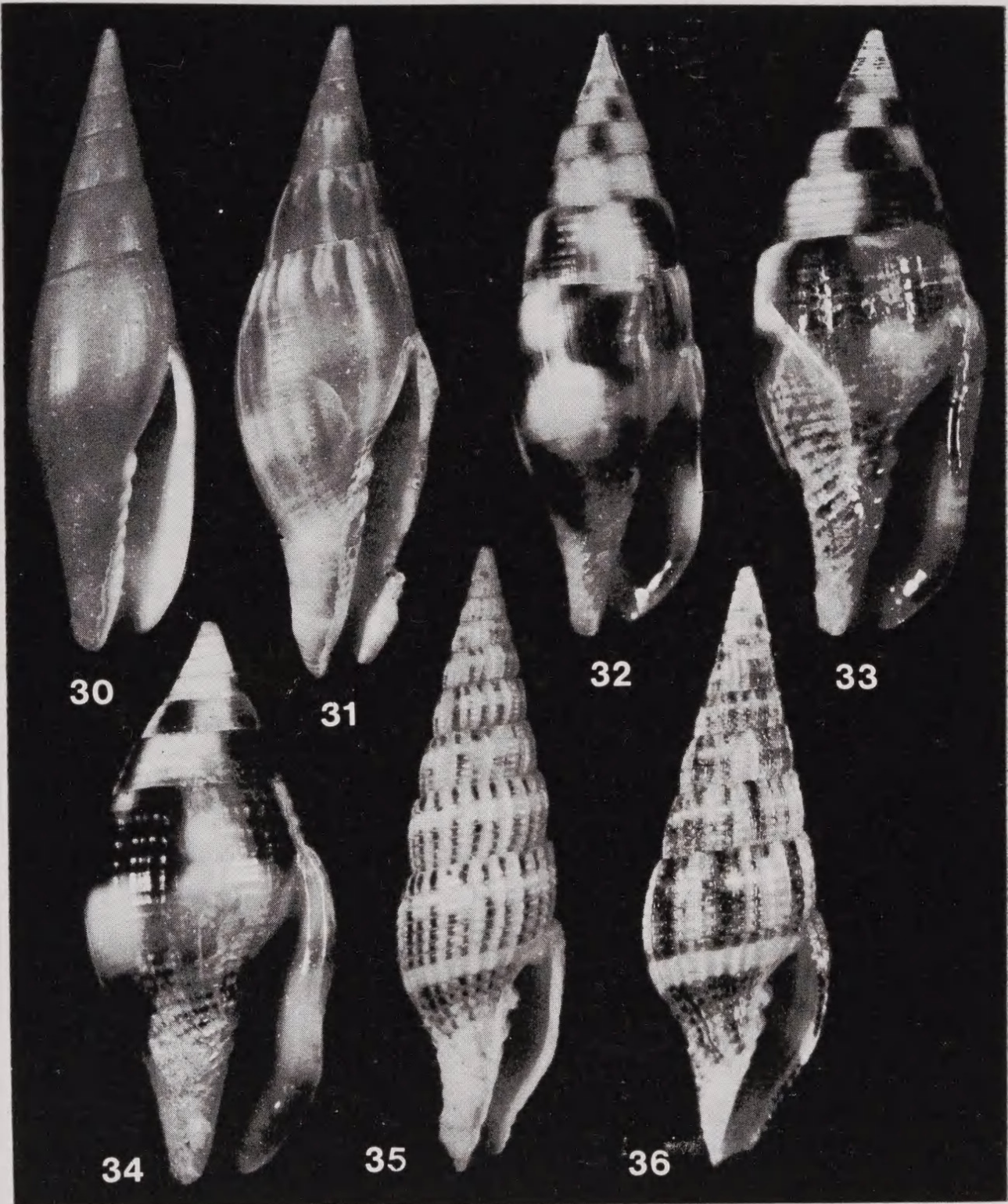
1836. *Mitra chrysostoma* Broderip, Proc. Zool. Soc. Lond. Pt. 3: 194.

1976. *Mitra (Nebularia) contracta* Swainson, Cernohorsky, Indo-Pacific Moll. 3 (17): 393, pl. 256, fig. 7 and pl. 331, figs. 1-7.

1976. *Mitra (Nebularia) chrysostoma* Broderip, Cernohorsky, Indo-Pacific Moll. 3 (17): 396, pl. 256, figs. 5, 6 and pl. 331, figs. 8-10.

TYPE LOCALITY: Anaa I, Tuamotu Is (*contracta* and *chrysostoma*).

In a recent monograph of the family Mitridae (Cernohorsky 1976) *Mitra chrysostoma* was only tentatively accepted as a valid species pending examination of larger series of specimens. It was pointed out that intergrading specimens were seen and



Figs. 30-36. 30. *Mitra pele* Cernohorsky. Panlao, Bohol, Philippines, 183-220 m; 62.4 mm. 31. *M. hilli* Cernohorsky. Panlao, Bohol, Philippines; 75.0 mm. 32-34. *M. (Nebularia) contracta* Swainson. Rabaul, New Britain. 32. Slender form, 34.7 x 10.8 mm (W.I. 31%). 33. Medium form, 29.2 x 11.2 mm (W.I. 39%). 34. Broad form, 26.4 x 12.0 mm. (W.I. 45%). 35, 36. *Vexillum (Costellaria) takakuwai* Cernohorsky & Azuma. 35. Panlao, Bohol, Philippines; 37.2 mm. 36. Harsa Bay, Laing I., Papua New Guinea; 26.3 mm (immature).

this has now been confirmed through 2 dozen specimens from Tulagi I, Florida group, Solomon Is (*leg.* T. Hallinan) and 58 specimens collected on the Korere-Bai coast of Rabaul, New Britain (*leg.* Dr. C. Prior).

All 58 specimens have been measured and the width-index ratio (width expressed as a percentage of length) computed. The mean width-index of the 58 Rabaul specimens ranged from 31% to 46%, with a mean of 39.4% (Fig. 37).

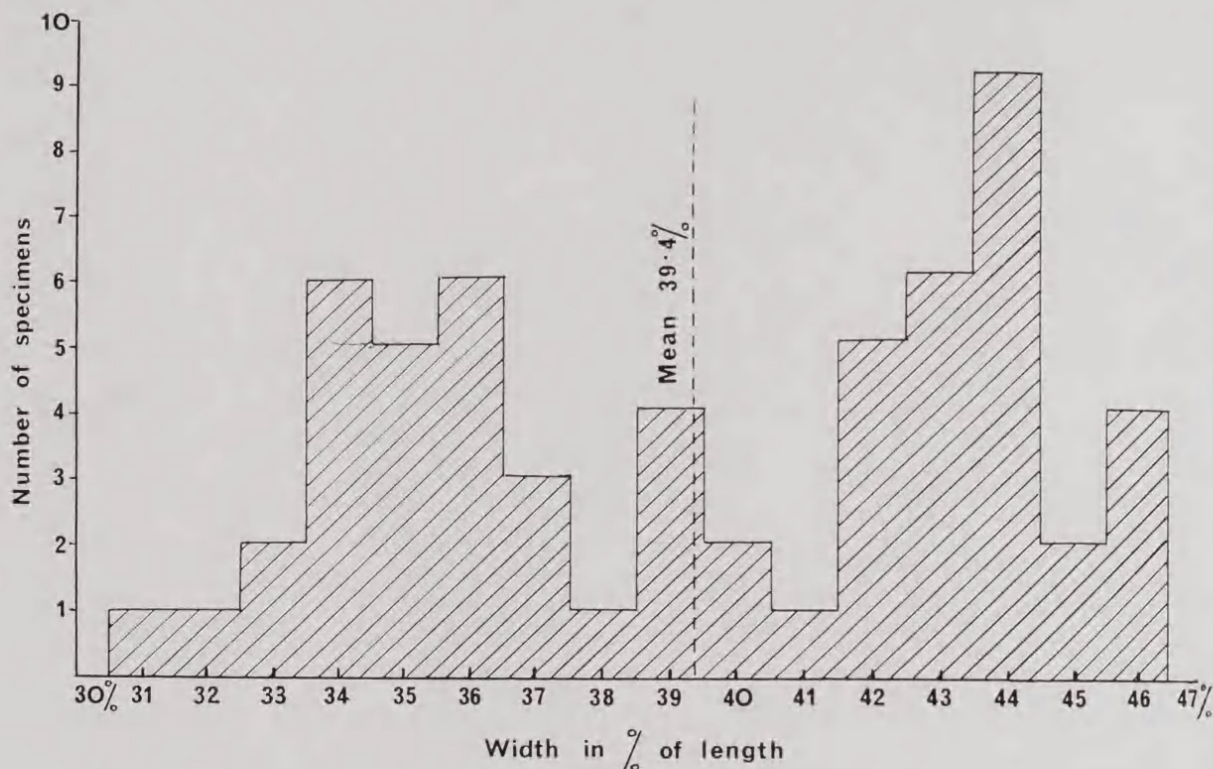


Fig. 37. Width-index — frequency histogram of *Mitra (Nebularia) contracta* Swainson from Rabaul, New Britain.

Specimens below this mean resembled the slender *contracta* form and specimens above 40% in width resembled the broader *chrysostoma* form. The sculpture proved to be as variable as the shell-outline and usually broader specimens had a coarser sculpture than slender ones. The characters of shell-outline and prominence of sculpture, which were previously used in a specific separation between *contracta* and *chrysostoma* proved to be of no consequence in a large series where these characters merge and vary from individual to individual.

The length of the aperture proved to be as variable as the shell-outline and ranged in aperture height-index from 49% to 66%, showing that the aperture can be equal in height to the spire or considerably longer. *M. chrysostoma* Broderip, 1836, must now be placed in synonymy of *M. contracta* Swainson, 1820. For an expanded synonymy of the species see Cernohorsky (1976).

Family COSTELLARIIDAE

Genus *Vexillum* Roeding, 1798

Vexillum Roeding, 1798, Mus. Bolten, p. 138. Type species by SD (Woodring, 1928) *V. plicatum* Roeding, 1798 = *Voluta plicaria* Linnaeus, 1758. Recent, Indo-Pacific.

Subgenus **Costellaria** Swainson, 1840**Vexillum (Costellaria) takakuwai** Cernohorsky & Azuma, 1974 (Figs. 35, 36)1974. *Vexillum (Costellaria) takakuwai* Cernohorsky & Azuma, Venus: Jap. J. Malac. 33 (1): 7, figs. 1-5.

TYPE LOCALITY: off Okinoshima, Tosa, Japan, 37-55 m.

The new records from Panlao, Bohol Province, Philippines (*leg.* V. Dan) and from Harsa Bay, Laing I, Papua New Guinea, 45 m (*leg.* Laing I Biological Station) represent a south and southwest extension for this species. The Philippine Island specimens are very similar to the holotype from Japan.

Family CYLICHNIDAE H. & A. Adams, 1854

(= Scaphandridae Sars, 1878 = Tornatinidae Fischer, 1883 = ? Acteocinidae Pilsbry, 1921)

Keen (1971), Marcus (1977) and other authors use the family-group name Scaphandridae for the genera *Scaphander* Montfort and *Cylichna* Lovén. The family name Cylichnidae must replace Scaphandridae as the earlier name.

Genus **Tornatina** A. Adams in Sowerby, 1850

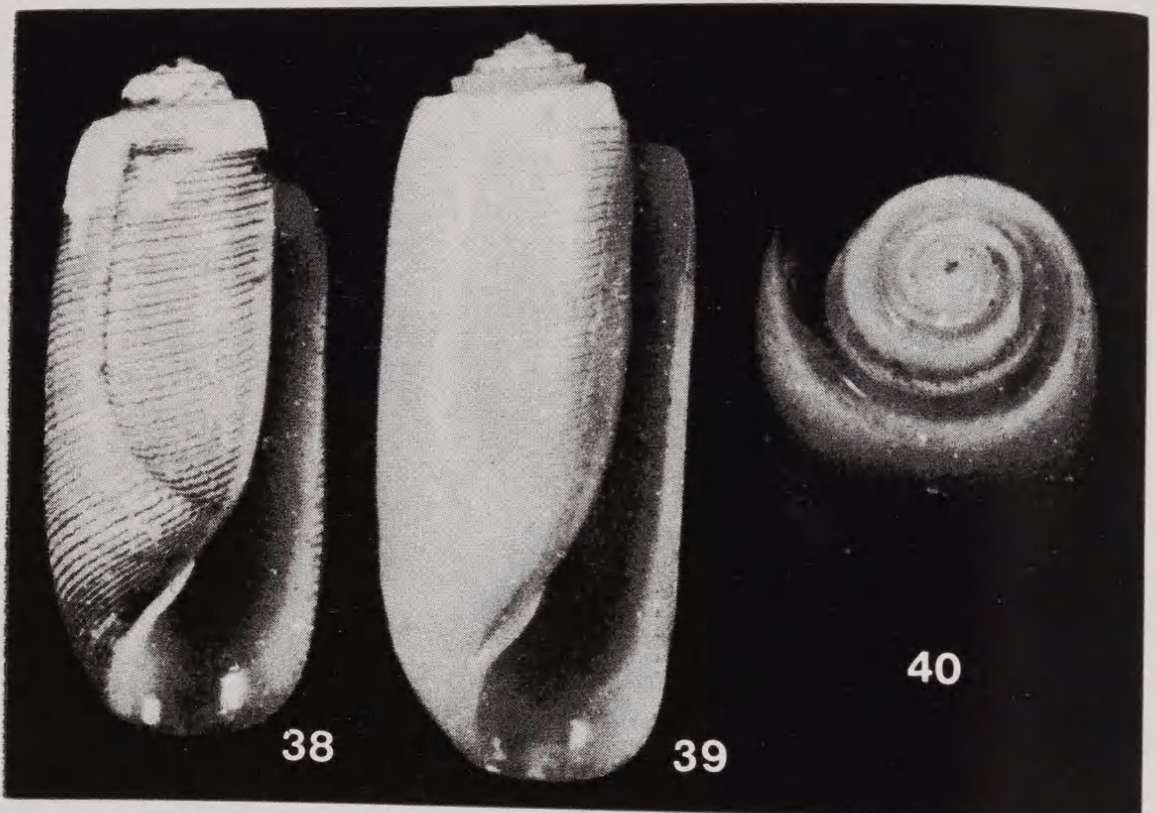
Tornatina A. Adams in Sowerby, 1850, Thes. Conchyl. 2: 566. Type species by SD (Woodward, 1866) *Bulla voluta* Quoy & Gaimard, 1833 (*non* Gmelin, 1791) = *Tornatina decorata* Pilsbry, 1904. Recent, Indo-Pacific.

The majority of authors have either synonymized *Tornatina* A. Adams, with *Acteocina* Gray, 1847, whose type species *A. wetherilli* (Lea, 1833) is a fossil from the New Jersey Miocene, or considered *Tornatina* as a subgenus of *Acteocina*. Marcus (1977) retained *Tornatina* for Recent Indo-Pacific species contending that without a comparison of anatomy between the fossil and Recent species of *Acteocina* and *Tornatina* it is not only impossible to ascertain whether or not they are congeneric but whether they belong to the family Cylichnidae or the Retusidae. The taxonomy of cephalopod tectibranchs relies strongly on comparative anatomy and for this reason it is advisable to disassociate the Recent Indo-Pacific *Tornatina* from the American Miocene *Acteocina*.

Tornatina decorata Pilsbry, 1904 (Figs. 38-40)1833. *Bulla voluta* Quoy & Gaimard, Voy. L'Astrolabe 2: 359, pl. 26, figs. 33-35 (*non* Gmelin, 1791).1850. *Bulla (Tornatina) voluta* Quoy, A. Adams in Sowerby, Thes. Conchyl. 2: 566, pl. 121, fig. 4.1904. *Tornatina decorata* Pilsbry, Proc. Acad. Nat. Sci. Philad. 56: 37, pl. 5, fig. 51.1927. *Retusa gaimardi* Finlay, Trans. Proc. N.Z. Inst. 57: 520 (*nom. subst. pro Bulla voluta* Quoy & Gaimard, 1833).1952. *Acteocina voluta* (Quoy & Gaimard), Kuroda & Habe, Check-list Moll. Japan p. 37.1964. *Acteocina (Tornatina) decorata* (Pilsbry), Habe, Shells west. Pacif. col. 2: 139, pl. 43, fig. 13.1977. *Tornatina gaimardi* (Finlay), Marcus, J. Moll. Stud. Suppl. 2: 6, figs. 1-11 and pl. 1.TYPE LOCALITY: Guam, Marianas Is (*voluta* and *gaimardi*); Hirado, Hizen, Japan (*decorata*).

The substitute name *Retusa gaimardi* Finlay, 1927, for the homonymous *Bulla voluta* Quoy & Gaimard, 1833 (*non* Gmelin, 1791) has proved to be superfluous. Examination of the holotype and 2 paratypes of *Tornatina decorata* Pilsbry, 1904, in

the Academy of Natural Sciences, Philadelphia No. 85985, clearly shows that *decorata* is conspecific with *voluta*. The holotype of *decorata* (Fig. 38), dimensions 6.8 x 2.8 mm (width-ratio 41%) still has most of the orange-brown periostracum adhering to the shell. The writer has collected several specimens in the Lau group, Fiji Is, and larger individuals always display features of calloused columella which more or less creeps upwards and adds a sharp border to the canaliculate spire whorls. The largest individual collected in the Lau group measured 10.0 x 4.1 mm (width-ratio 41%), which is still slightly smaller than the original dimensions of 5 x 2 lignes = 11.25 x 4.5 mm (width-ratio 40%) given for *T. voluta* (Quoy & Gaimard).



Figs. 38-40. *Tornatina decorata* Pilsbry. 38. Holotype Acad. Nat. Sci. Philad. No. 85985; 6.8 x 2.8 mm. 39, 40. Specimen from Moce I, Lau group, Fiji Is; 10.0 x 4.1mm. 39. Ventral view. 40. Spire view.

Tornatina conspicua Preston, 1908, despite small differences in some anatomical features as found by Marcus (1977), is indistinguishable from *T. decorata* and is most probably conspecific. Marcus (1977) quoted Lemche who considered *T. acrobeles* (Watson, 1883) and *T. exilis* (Dunker, 1860) to be conspecific with *voluta* Quoy & Gaimard (= *decorata* Pilsbry). If this assumption can be confirmed through examination of the respective type specimens then another name change for *T. decorata* will be required.

Acknowledgements. I am grateful to Ms K. Way and Ms A. Blake, British Museum (Natural History), London, and Dr G. Davis and Ms E. V. Scott, Academy of Natural Sciences, Philadelphia, for the loan of molluscan type material. I would like to thank Mr V. Dan, Manila, Philippines, Major A. Deynzer, Okinawa, Mr B. Parkinson, Rabaul, New Britain, Dr C. Prior, Keravat, New Britain, and Mr J. Trondle, Papeete, Tahiti, for the loan of molluscan specimens.

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