

Mollusca Gastropoda : Noteworthy Muricidae from the Pacific Ocean, with description of seven new species

Roland HOUART *

ABSTRACT

This paper reports on Muricidae originating mostly from the continental slopes of South-East Asia, New Caledonia and S. French Polynesia. The genus *Daphnellopsis* Schepman, 1913 and *Latiaxis sibogae* Schepman, 1911 are transferred respectively from the Turridae and from the Coralliophilidae to the Muricidae ; *Pterynotus cerinamarumai* Kosuge, 1980 is synonymized with *Chicoreus orchidiflorus* (Shikama, 1973) and *Siratus hirasei* Shikama, 1973 with *Chicoreus (Siratus) pliciferoides* Kuroda, 1942.

The following new species are described : *Poirieria (Paziella) vaubanensis*, *Poirieria (Paziella) acerapex* and *Poirieria (Paziella) spinacutus* (all from New Caledonia, 250-550 m), *Trophon (Trophonopsis) minirotundus* (New Caledonia, 250-350 m), *Nipponotrophon regina* (Philippines, 680-970 m), *Typhis (Typhina) virginiae* and *Siphonochelus (Laevityphis) tillierae* (New Caledonia, 250-430 m).

RÉSUMÉ

Cette étude reprend les Muricidae provenant des pentes continentales de l'Asie du Sud-Est, de Nouvelle-Calédonie et du sud de la Polynésie française. Le genre *Daphnellopsis* Schepman, 1913 et l'espèce *Latiaxis sibogae* Schepman, 1911 sont transférés respectivement des Turridae et des Coralliophilidae dans les Muricidae ; *Pterynotus cerinamarumai* Kosuge, 1980 est mis en synonymie avec *Chicoreus orchidiflorus* (Shikama, 1973) et *Siratus hirasei* Shikama, 1973 avec *Chicoreus (Siratus) pliciferoides* Kuroda, 1942.

Les espèces suivantes sont décrites comme nouvelles : *Poirieria (Paziella) vaubanensis*, *Poirieria (P.) acerapex* et *Poirieria (P.) spinacutus* (toutes de Nouvelle-Calédonie, 250-550 m), *Trophon (Trophonopsis) minirotundus* (Nouvelle Calédonie, 250-350 m), *Nipponotrophon regina* (Philippines, 680-970 m), *Typhis (Typhina) virginiae* et *Siphonochelus (Laevityphis) tillierae* (Nouvelle-Calédonie, 250-430 m).

This paper is a report on the muricid part of material made available through several French expeditions organized in recent years in the Pacific ocean. Most of this material consists of species dredged or trawled on the continental slopes ; not surprisingly, several new species have been discovered, especially in New Caledonian waters, which have been very poorly explored so far.

Complementary information is also presented on previously described species, when the material provides new distributional data, or when the published information is poor or insufficient.

Unless otherwise stated, this material is now housed in the Muséum national d'Histoire naturelle, Paris.

* St. Jobsstraat, 8, B-3330 Landen (Ezemaal), Belgium. Scientific collaborator at the Institut royal des Sciences naturelles de Belgique.

MATERIAL STUDIED

The material on which this paper is based originates from the following expeditions :

1. Material collected during the MUSORSTOM I expedition of 1976 aboard R. V. *Vauban* under the direction of Prof. J. FOREST (Philippines).
2. Material collected by P. BOUCHET and A. WARÉN off South New Caledonia in 1978-79 aboard R. V. *Vauban*.
3. Material collected by B. RICHER DE FORGES in 1979 in Southern French Polynesia aboard R. V. *Marara*.
4. Material collected during the CORINDON II expedition of 1980 aboard R. V. *Coriolis* (Straits of Makassar).
5. Material collected by P. BOUCHET during the MUSORSTOM II expedition of 1980 aboard R. V. *Coriolis* under the direction of Prof. J. FOREST (Philippines).

Most of the finer residues from these expeditions was sorted by Centre de tri d'Océanographie Biologique (CENTOB), Brest.

SYSTEMATIC LIST OF SPECIES

Family MURICIDAE Rafinesque, 1815

Subfamily MURICINAE Rafinesque, 1815

Murex (Murex) concinnus Reeve, 1845

Murex concinnus Reeve, 1845 : pl. 25, fig. 104 ; SOWERBY, 1879, fig. 5 ; KAICHER : 1974, card 543 ; FAIR, 1976 : 32, pl. 1, fig. 12.

MATERIAL. — CORINDON, St.201, 01°10'S, 117°06'E, 21 m, 4 spms ; St.205, 01°8'S, 117°19'E, 49 m, 5 spms ; St.206, 01°05'S, 117°45'E, 85-79 m, 2 spms (all from Makassar Straits).

Murex (Murex) kiiensis Kira, 1962

Murex kiiensis Kira, 1962 : 3, pl. 24, fig. 10 ; KIRA, 1969 : 58, pl. 23, fig. 10 ; KAICHER, 1974 : card 573 ; RADWIN & D'ATTILIO, 1976 : 66, pl. 11, fig. 14 (not pl. 13, fig. 5).

MATERIAL. — MUSORSTOM I & II, 11 stations in the vicinity of 14°00'N, 120°20'E, between 143 and 320 m (14 spms). CORINDON, St.216, 00°40'N, 117°51'E, 96 m, 1 spm.

Murex (Murex) occa Sowerby, 1834

Murex occa Sowerby, 1834 : pl. 64, fig. 45 ; KAICHER, 1974 : card 524 ; FAIR, 1976 : 63, pl. 2, fig. 21 ; RADWIN & D'ATTILIO, 1976 : 71 (as synonym of *M. scolopax* Dillwyn), pl. 10, fig. 7 (not 6).

MATERIAL. — CORINDON, St.203, 01°09'S, 117°07'E, 25 m, 3 spms juv.

Murex (Murex) tenuirostrum Lamarck, 1822

Murex tenuirostrum Lamarck, 1822 : 159 ; CERNOHORSKY, 1967 : 115, pl. 14, fig. 1 (as *M. tribulus* Linné) ; FAIR, 1976 : 80, pl. 1, fig. 7 (as *M. ternispina* Lamarck) ; HOUART, 1979 : 129, pl. 1, figs. 1-2 (as *M. tribulus* Linné and *Murex* sp.).

MATERIAL. — MUSORSTOM I, St.73, 14°15'N, 120°31'E, 70-76 m, 1 spm. — MUSORSTOM II, St.8, 13°55'N, 120°20'E, 85-90 m, 1 spm ; St.32, 13°40'N, 120°54'N, 192-220 m, 1 spm.

This is the *Murex tribulus* Linné and *Murex ternispina* Lamarck of authors (Dr. PONDER and Dr. VOKES, pers. comm.)

Murex (Murex) unidentatus Sowerby, 1834

Murex unidentatus Sowerby, 1834 : pl. 66, fig. 52.

Murex martinianus Reeve, 1845 : pl. 28, fig. 72 ; HABA, 1969 : pl. 25, fig. 1 ; FAIR, 1976 : pl. 1, fig. 2 ; RADWIN & D'ATTILIO, 1976 : pl. 10, fig. 14 (all as *Murex trapa* Röding).

MATERIAL. — CORINDON, St.201, 01°10'S, 117°06'E, 21 m.

Chicoreus (Chicoreus) axicornis (Lamarck, 1822)

Murex axicornis Lamarck, 1822 : 63 ; KIENER, 1842 : pl. 42, fig. 2 ; FAIR, 1976 : pl. 6, fig. 75 (only) ; RADWIN & D'ATTILIO, 1976 : pl. 4, fig. 2.

Murex kawamurai Shikama, 1964 : 116, pl. 65, fig. 4.

MATERIAL. — CORINDON, St.216, 00°40'N, 117°51'E, 96 m, 1 spm. MUSORSTOM II, St.41, 13°15'N, 122°46'E, 166-172 m, 1 spm. ; St.47, 13°33'N, 122°10'E, 81-84 m, 1 spm.

Chicoreus (Chicoreus) banksii (Sowerby, 1841)

Murex banksii Sowerby, 1841 : pl. 191, fig. 82 ; FAIR, 1976 : pl. 8, fig. 109 ; RADWIN & D'ATTILIO, 1976 : pl. 4, fig. 12 ; VOKES, 1978 : pl. 3, figs 2-3.

MATERIAL. — *Vauban*, New Caledonia, St.10, 22°17'S, 167°05'E, 80 m, 1 spm.

Chicoreus (Chicoreus) boucheti Houart, 1983

(PL. III, fig. 10, 10A).

Chicoreus (Chicoreus) boucheti Houart, 1983 : 27, figs. 3 & 4, pl. 1, figs. 1 & 2.

MATERIAL. — South of New Caledonia, 230-260 m, 22°08'S, 167°04'E (1 spm).

A species apparented to *Chicoreus (Chicoreus) longicornis* (Dunker, 1864) but significantly different in its more numerous and foliaceous open spines, its more appressed suture, the sculpture of the first whorls and the aperture. Known only from the holotype deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

Chicoreus (Chicoreus) orchidiflorus (Shikama, 1973)

(Pl. IV, fig. 15).

Pterynotus orchidiflorus Shikama, 1973 : 5, pl. 2, figs. 7-8 ; HOUART, 1981 a : 9.

Chicoreus subtilis Houart, 1977 : 13, figs. 1-5.

Pterynotus cerinamarumai Kosuge, 1980 : 53, pl. 14, figs. 3, 5-9, pl. 15, figs. 1-2 (new synonymy) ; HOUART, 1981 b : 16-17.

MATERIAL. — Tubuaï Island, 150 m, 5/1979, outer slope, 1 spm.

Described by SHIKAMA in 1973, in a frequently overlooked publication, this species was described again by the present author (1977 : 13). KOSUGE (1980 : 53) differentiated his *Pterynotus cerinamarumai* as having no divided varical wings and a finer spiral sculpture. Examination of specimens of both forms cannot convince me of the separation of these species.

C. (C.) orchidiflorus is known from the Philippines and from Northern-East Taiwan. The discovery of this species in the Southern French Polynesia represents a great range extension.

Chicoreus (Siratus) mindanaoensis (Sowerby, 1841)

Murex mindanaoensis Sowerby, 1841 : pl. 194, fig. 42 ; VOKES, 1971 : p. 70, as *Murex mindanaoensis* (emend) ; FAIR, 1976 : pl. 1, fig. 4 ; RADWIN & D'ATTILIO, 1976 : pl. 10, fig. 4.

MATERIAL. — MUSORSTOM I, St.56, 13°53'N, 120°08,9'E, 134 m, 2 spms ; St.58, 13°58'N, 120°13,7'E, 143-178 m, 1 spm.

Chicoreus (Siratus) pliciferoides Kuroda, 1942

(Pl. III, fig. 9, 9A).

Murex pliciferus Sowerby, 1841 : pl. 195, fig. 101 (homonym with *Murex pliciferus* Bivona-Bernardi, 1832) ; *Chicoreus pliciferoides* Kuroda, 1942 : 81, n. n. pro *Murex pliciferus* Sowerby, 1841 ; KIRA, 1969 : 57, pl. 22, fig. 16 ; FAIR, 1976 : 68, pl. 5, fig. 59 ; RADWIN & D'ATTILIO, 1976 : 107, pl. 17, fig. 17.

Murex (Siratus) propinquus Kuroda & Azuma in AZUMA, 1961 : 300, text fig. 3.
Siratus hirasei Shikama, 1973 : 5, pl. 2, fig. 9-12. (new synonymy).

MATERIAL. — MUSORSTOM I & II, obtained at 14 stations in the vicinity of 14°00'N, 120°20'E, at depths between 167 and 320 m, most of them being from 180-195 m (38 spms).

Vauban, outer reef slope off Balade, Northern New Caledonia, 04.09.1979, 200 m, 1 spm.

This species was formerly known off Japan, Taiwan and the Philippines. The discovery of a specimen in New Caledonia is a very important range extension.

Aspella sp.

MATERIAL. — *Vauban*, New Caledonia, St.40, 22°30'S, 166°24'E, 250-350 m.

A very poor, dead juvenile specimen (3,5 mm) with some identification problems. Adult specimen are needed for further investigations.

Dermomurex (Takia) infrons (Vokes, 1974)

(Pl. III, fig. 12).

Murex inermis Sowerby, 1841 : pl. 12, fig. 87 (homonym of *Murex inermis* Philippi, 1837) ; KURODA, HABA & OYAMA, 1971 : 153, pl. 43, fig. 15.

Takia infrons Vokes, 1974 : 2 (n. n. pro *Murex inermis* Sowerby, 1841) ; FAIR, 1976 : 50, fig. 30 ; RADWIN & D'ATTILIO, 1976 : 109, pl. 1, figs. 30, 31 ; KAICHER, 1979 : card 2013.

MATERIAL. — *Vauban*, St.33, South of New Caledonia, 290-350 m, 22°33'S, 166°25'E, 1 spm. Known till now only off Japan, the discovery of this species in New Caledonia is a great range extension, as well as providing new bathymetrical data.

Subfamily MURICOPSINAE Radwin & D'Attilio, 1971

Favartia (Favartia) pelepili D'Attilio & Bertsch, 1980

(Pl. V, fig. 20).

Favartia pelepili D'Attilio & Bertsch, 1980 : 174, figs. 3a, b, c. ; HOUART, 1981 : 8.

MATERIAL. — MUSORSTOM II, St.33, Philippines, 13°32'N, 121°07'E, 130-137 m, 1 spm.

This locality is not a range extension, as the type locality for this species is : Bohol Straits, Philippines Islands (approximately 10°20'N, 124°E). This recently described species was only illustrated in the original description and one year later in "La Conchiglia". It is figured here as a complement of information and also, why not, for the beauty of this exquisite shell.

Favartia (Favartia) sp.

(Pl. IV, fig. 13, 13 A-B).

MATERIAL. — Tubuai, 150 m, S. French Polynesia.

A single dead specimen of this species has been taken. It differs from other *Favartia* sp. by its 4 varical whorls and its smooth intervarical area, although it could be a juvenile of *Favartia (Favartia) brevicula* (Sowerby, 1834). More material is necessary.

Favartia (Murexiella) cirrosa (Hinds, 1844)*Murex cirrosus* Hinds, 1844 : 118, pl. 3, figs. 17, 18 ; REEVE, 1845 ; pl. 29, fig. 138 ; RADWIN & D'ATTILIO, 1976 : 156, pl. 25, fig. 13 ; D'ATTILIO, 1981 : 46, figs. 1-7 ; HOUART, 1982 : 1, fig. A.

MATERIAL. — MUSORSTOM II, St.33, 13°32'N, 121°07'E, 130-137 m, 1 spm.

Murexsul auratus Kuroda & Habe, 1971

(Pl. IV, fig. 16, 16A).

Murexsul auratus Kuroda & Habe, in Kuroda, Habe & Oyama, 1971 : 141, pl. 109, fig. 11 ; RADWIN & D'ATTILIO, 1976 : 161, pl. 14, fig. 5.MATERIAL. — *Vauban*, New Caledonia, St.40, 22°30'S, 166°24'E, 250-350 m, 3 spms.

Previously known only from the type locality : 2 km SSW of Jogashima (65-67 m), Sagami Bay, Japan. The discovery of 3 specimens in New Caledonia proves once again that many species (and not exclusively Muricidae) thought to be endemic to Japan, have a much wider distribution.

Subfamily ERGALATAXINAE Kuroda & Habe, 1971

Cytharomorula pleurotomoides (Reeve, 1845)

(Pl. V, fig. 17, 17A).

Murex pleurotomoides Reeve, 1845 : pl. 34, fig. 173 (locality unknown) ; SOWERBY, 1879 : 48, pl. 21, fig. 206 (locality unknown) ; POIRIER, 1883 : 126 (erroneously localised in Guadeloupe, West Indies) ; SCHEPMAN, 1911 : 351 (as *Ocinebra*) ; RADWIN & D'ATTILIO, 1976 : 216, pl. 25, fig. 7.

MATERIAL. — MUSORSTOM I, St.57, 13°53'N, 120°13'E, 96-107 m, 1 spm ; St.61, 14°02'N, 120°18,5'E, 184-202 m, 1 spm ; St.73, 14°15'N, 120°31'E, 70-76 m, 4 spms.

This is a relatively common species, but poorly known. A probable synonym is *Latirus squamosus* Pease, 1863 (E. A. KAY, 1979 : 281, fig. 96C) ; examination of the type is desirable.

The locality is not new but RADWIN & D'ATTILIO (1976 : 216) note a depth range of 40 to 130 m ; the specimen illustrated here was taken alive in 184-202 m.

Cytharomorula sp.

(Pl. V, fig. 18).

MATERIAL. — MUSORSTOM I, St.18, 13°56,3'N, 120°16,2'E, 150-159 m, 1 spm.

The genus *Cytharomorula* Kuroda, 1953 has *C. vexillum* Kuroda, 1953 as type species. The genus was included in the Ergalataxinae by KURODA & HABE (1971 : 149) along with *Bedevina* Habe, 1946 (Type species by O. D. : *Trophon biriliffi* Lischke, 1871), and *Ergalatax* Iredale, 1931 (Type-species by O. D. : *Ergalatax recurrens* Iredale, 1931 = *Buccinum contractum* Reeve, 1846).

This very poorly known group includes species originally described in the Muricidae, the Fasciolaridae, the Buccinidae and other families. It would be very unsafe to name here a species which may be already known in another family.

This subfamily is presently being studied by Dr. E. H. VOKES (pers. comm.). I only want to illustrate this species in order to bring other informations, as I will do for the next species.

Cytharomorula sp.

(Pl. V, fig. 19).

MATERIAL. — MUSORSTOM II, St.28, Philippines, 13°41,3'N, 120°50,5'E, 90-110 m, 1 spm.

Cytharomorula vexillum Kuroda, 1953

Cytharomorula vexillum Kuroda, 1953 : 183, fig. 811 ; KURODA, HABE & OYAMA, 1971 : 151, pl. 109, fig. 13.

MATERIAL. — MUSORSTOM II, St.32, 13°40'N, 120°54'E, 192-220 m, 4 spms.

Subfamily THAIDINAE Suter, 1915

***Daphnellopsis lamellosus* Schepman, 1913**

(Pl. V, 21, 21A-C).

Daphnellopsis lamellosus Schepman, 1913 : 449, pl. 30, fig. 10 ; POWELL, 1966 : 140, pl. 23, figs. 16, 17.

MATERIAL. — MUSORSTOM II, St.64, 14°01'N, 120°19'E, 191-195 m, 1 spm.

SCHEPMAN (1913 : 449) described *Daphnellopsis* as "one of the puzzles of the Siboga-collections" and included it with considerable hesitation in the Pleurotomidae. POWELL (1966 : 140) included it in the "genera considered to be doubtfully turrid" and summarized the taxonomical wanderings of the name.

Daphnellopsis murex Hedley, 1922 is here regarded as belonging to another muricid genus (see also Vokes, 1974 : 96).

The radula of this specimen of *Daphnellopsis lamellosus* was extracted and the examination of it suggests a placement in the subfamily Thaidinae (fig. 21C).

Subfamily TROPHONINAE Cossmann, 1903

(?) *Nipponotrophon makassarensis* Houart, 1985

(Pl. IV, fig. 14, 14A-B).

DESCRIPTION

Shell a medium length for the genus ; covered by a very light, flat white intritacalx, weakly axially striate and showing growth striae.

Aperture large and ovate with a very broad and shallow anal sulcus and a barely visible callus.

Columellar lip smooth, adherent posteriorly on a small surface, then detached and weakly erected anteriorly.

Outer lip erect and smooth.

Spire high, consisting of one and one half bulbous nuclear whorls and 5 slightly convex angular, post-nuclear whorls. First and second post-nuclear whorls bearing 9 varices and 2 very weak spiral costae ; these costae disappearing gradually on second whorl. Third whorl ornamentated with 6 to 7 sharps varices. Fourth, and body whorl bearing 5 to 6 flaring, winglike varices. Intervarical areas smooth.

Siphonal canal moderate in length, about 1/3 of the shell, open and dorsally curved.

Operculum corneous, brown, elongate with an apical nucleus.

Radula typically muricine with a curved lateral tooth and a rachidian bearing 5 independent cusps.

TYPE MATERIAL

Holotype and 2 paratypes deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

1. The original description of *N. makassarensis* has been published in *Mar. Res. Indonesia*, (1984) 1985, 24, p. 83. It is reproduced here without change.

Two paratypes in the Indonesian Institute of Sciences, Jakarta ; 1 paratype in the National Science Museum, Tokyo ; 1 paratype n° C 137972 in the Australian Museum, Sydney ; 1 paratype in R. HOUART collection.

TYPE LOCALITY

Makassar, St.209, 00°07'S, 117°54'E, 490 m (CORINDON II).

OTHER LOCALITIES

CORINDON II, St.214, 00°31'N, 117°50'E, 595 m ; St.217, 00°38'N, 118°00'E, 470-447 m.

DIMENSIONS

Holotype : 37.5 × 25 mm.

DISCUSSION

The most important points or indicators for a subfamilial or generic placement in Muricidae are : the general outline of the shell, the operculum and radular characteristics.

The shell of ? *Nipponotrophon makassarensis* shows some affinities with the ocinebrine subgenus *Ocinebrellus* Jousseaume, 1880 (type sp. by O.D. : *Murex eurypteron* Reeve, 1845) : general form, length, winged varices... Unfortunately, the open canal, the typical muricine operculum and the radula lead me to consider this genus and subfamily as not valid for the new species.

The shell shows also some affinities with the genus *Pterynotus* Swainson, 1833 (Type sp. by S.D. : *Murex pinnatus* Swainson, 1822). However, the *Pterynotus* species bear always 3 varices [except for some species, questionably put in that genus, a.o. *P. martinetana* (Röding, 1798) but those have a typical dentate aperture and not winged varices], which leads us once more far away from the new species.

Another possible genus might be the trophonine *Trophon* Montfort, 1810 (Type sp. by O.D. : *Trophon magellanicus* Gmelin, 1791). This seemed to be the best location for our species but the operculum and the winged varices are not typical for *Trophon* species.

The general outline of the shell ; the rounded, somewhat bulbous protoconch and the obsolete spiral threads on the first whorl ; the 5 to 6 sharp varices ; the radula, very near these of *N. scitulus* (Dall, 1891) (MYERS and D'ATTILIO, 1980 : p. 86, fig. 5) or these of *N. gorgon* (Dall, 1913) (RADWIN and D'ATTILIO, 1976 : p. 84, fig. 48) lead me to consider the genus *Nipponotrophon* Kuroda and Habe, 1971 as the most appropriate for this new species. The only negative aspects are the form of the aperture, of the varices, and the operculum, not typical of *Nipponotrophon* but nearly identical to some *Pterynotus* sp.

A newly described species : *Trophonopsis shingoi* Tiba, 1981 may be compared. *T. shingoi* is smaller : holotype 27 × 14 mm and paratype 23 × 13 mm (both adult shells). The spire is higher, the shell presents spiral sculpture on each whorl, and five to six cords on the body whorl, while ? *N. makassarensis* has only two shallow spiral on the first whorl and a smooth body whorl, even in juveniles. Moreover, the flaring wings of *T. shingoi* are crossed with spiral cords and present a channelled shoulder spine, while those of ? *N. makassarensis* are smooth, without any sculpture. The aperture of *T. shingoi* is different, more like a real *Nipponotrophon*. Moreover, *T. shingoi* presents a small callus on the tip of the columella while these of ? *N. makassarensis* is almost invisible.

Another species, *Boreotrophon smithi* Dall, 1902 may also be compared. *B. smithi* has a different aperture ; channelled and recurved spiny flaring wings, pointed upwards. The adult specimens are much larger : up to 50 mm. It also bears a yellowish periostracum, not observed in the new species, and has a strongly curved siphonal canal. Moreover, *B. smithi* is probably an *Austrotrophon* which is a very different group.

Subfamily TYPHINAE Cossman, 1903

Siphonochelus (Trubatsa) pavlova (Iredale, 1936)

(Pl. III, fig. 8, 8A).

Typhina pavlova Iredale, 1936 : 324, pl. 24, fig. 12 ; RADWIN & D'ATTILIO, 1976 : 205, pl. 31, fig. 6.MATERIAL. — *Vauban*, New Caledonia, St.40, 22°30'S, 166°24'E, 250-350 m, 10 spms.

Known only from New South Wales and South Queensland (Australia) this represents a range extension for this pretty little species. Only dead and somewhat immature specimens were dredged by the *Vauban*.

Siphonochelus sp.

(Pl. III, fig. 11).

MATERIAL. — *Vauban*, New Caledonia, St.40, 22°30'S, 166°24'E, 250-350 m, 1 spm.

One single dead shell, very poor specimen. I prefer to illustrate it only, and wait till other specimens come to light before attempting to identify it or to describe it as new.

Appendix : New Species

Subfamily MURICINAE Rafinesque, 1815

Genus **POIRIERIA** Jousseau, 1880Subgenus **Paziella** Jousseau, 1880Type species by O. D. : *Murex pazi* Crosse, 1869.

This subgenus, till now confined in the Western Atlantic region, is undoubtedly the only one possible for these three new species : *Poirieria (Paziella) vaubanensis* sp. nov., very closely resembling *P. (P.) hystricina* (Dall, 1889) from Barbados ; *P. (P.) spinacutus* sp. nov. near the type species of the subgenus, a West Atlantic species, and *P. (P.) acerapex* sp. nov. which I can not compare with any existing species.

If one takes the subgenus definition of RADWIN and D'ATTILIO (1976 : 87), we find a fusiform shell, with an impressed suture. Aperture ovate ; outer apertural lip lirate (or dentate) inside ; low spinose varices, originating at the suture ; weak spiral cords developed into sharp, short open spines where they intersect the varices ; spines of the shoulder-margin twice as long as those on the other cords, etc.

Another Pacific species is included here for the first time in this subgenus : *Latiaxis sibogae* Schepman, 1911, which is very near and compared with a New Caledonian species.

Poirieria (Paziella) vaubanensis sp. nov.

(Pl. I, fig. 1, 1A).

DESCRIPTION

Shell medium for the genus ; very fragile. Light brown, varices cream to white. Aperture small, triangular, white.

Columellar lip large, thin, erected and expanded ; completely smooth. No apparent anal notch.

Outer lip thin, erected, slightly crenulated.

Inner part of the outer lip bearing 4 shallow and large denticles.

Spire high, consisting of 6 angulate postnuclear whorls and a protoconch of undetermined nature. Suture well delimited.

Body whorl bearing 11 lamellate, bladelike axial ridges or varices, of which the apertural and 3 other ones are ornamented with 4 long, open and very fragile spines ; the carinal one is the longest ; posterior one short. No other axial sculpture.

Spiral sculpture consisting of 4 major cords, which on each varix correspond to the more or less long varical spines. No intermediate spiral sculpture. Siphonal canal short, open, slightly recurved backward, bearing 2 short open spines. Very obvious remnants of 5 preceding canals.

TYPE MATERIAL

Holotype deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

TYPE LOCALITY

South of New Caledonia, St.1, 480-550 m, 22°15'S, 167°18'E (*Vauban* 1978-79).

DIMENSIONS

Height : 10.5 mm. — Maximum diameter (spines included) : 9 mm.

DISCUSSION

Relationship between the new species and *P. (P.) hystricina* (Dall, 1889) is certain. Both present absolutely the same appearance and the same sculpture. The only differences are the varices which are fewer in *P. (P.) vaubanensis*, most noticeably on early whorls. *P. (P.) hystricina* is also twice as large. Another Pacific species : *P. (P.) sibogae* (Schepman, 1911) is very near the New Caledonian species.

P. (P.) sibogae has a non-erect flaring columellar lip ; it is more fimbriate, but unfortunately, it has an immature aperture, without an intact outer lip. It has fewer varices and has intermediate spiral threads.

P. (P.) vaubanensis is twice as small, brown and very fragile, compared with *P. (P.) sibogae* which is white and more solid.

Poirieria (Paziella) acerapex sp. nov.

(Pl. I, fig. 2, 2A).

DESCRIPTION

Shell moderate in size for the subgenus ; solid ; color cream with brown band below the suture. Aperture small, ovate, white.

Columellar lip posteriorly adherent, detached and strongly erect anteriorly, strongly prominent and completely smooth. No apparent anal notch. Outer lip slightly erect and smooth. Inner part of outer lip smooth.

Spire high, consisting of one and one-half pointed, triangular, smooth protoconch and 4 angular postnuclear whorls. Suture distinct and very slightly appressed.

Body whorl bearing 6 rounded varices ornamentated with 3 sharp pointed open spines, of which the carinal is the longest. No other axial sculpture.

Spiral sculpture on body whorl consists of 3 shallow costae corresponding to the varical spines. Preceding whorls ornamentated with one spiral carinal cord and one sharp, short, open carinal spine.

Siphonal canal long for the genus, large, straight and open. Remnants of 5 preceding canals apparent.

TYPE MATERIAL

Holotype deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

TYPE LOCALITY

South of New Caledonia, St.16, 22°46'S, 167°12'E, 390-400 m (Vauban 1978-79).

DIMENSIONS

Height : 9.5 mm. — Diameter : 6 mm (spines included).

DISCUSSION

No other related species could be found.

Poirieria (Paziella) spinacutus sp. nov.

(Pl. I, fig. 3, 3A-B)

DESCRIPTION

Shell medium for the genus, solid. Color entirely white with sometimes very light pale brown blotches, covered with a very thin white intritacalx. Aperture small, ovate, white.

Apertural periphery somewhat damaged, but the following points are still visible : inner part of outer lip bearing six more or less developed denticles. Columellar lip large and thin, completely erect, bearing one small denticle at the center. No apparent anal notch. Outer lip thin and erect.

Spire high, consisting of one and one-half smooth, rounded protoconch and 5 convex to weakly angulate postnuclear whorls. Suture very slightly appressed. Body whorl bearing 7 rounded spinose

varices, ornamentated with 5 more or less pointed, slightly upward recurved open spines, of which the second posterior one is the longest.

Spiral sculpture consists of very shallow, large cords corresponding to the varical spines.

A very finely cancellate sculpture covering the whole shell.

Siphonal canal moderately long, open and straight.

TYPE MATERIAL

Holotype deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

One paratype n° C 140734 Australian Museum, Sydney ; 1 paratype N° MF 34197 National Museum of New Zealand, Wellington ; 1 paratype in R. HOUART collection.

TYPE LOCALITY

New Caledonia, St.40, 22°30'S, 166°24'E, 250-350 m (*Vauban* 1978-79).

OTHER LOCALITIES

New Caledonia, St.1, 22°17'S, 167°14'E, 425-430 m ; St.3, 22°17'S, 167°12'E ; 390 m (*Vauban* 1978-79).

DIMENSIONS

Holotype : 9.5 x 5.8 mm (spines included).

DISCUSSION

No related species could be found.

Subfamily TROPHONINAE Cossmann, 1903

Genus **Trophon** Montfort, 1810

Subgenus **Trophonopsis** Bucquoy & Dautzenberg, 1882

Type species by O. D. : *Murex muricatus* Montagu, 1803.

Trophon (Trophonopsis) minirotundus sp. nov.

(Pl. I, fig. 4, 4A-B)

DESCRIPTION

Shell small for the subgenus ; solid. Color entirely white.

Aperture medium sized, ovate, white. Columellar lip entirely adherent, white, smooth. No apparent anal notch. Outer lip smooth.

Spire high, consisting of one and one-half smooth, rounded nuclear whorls and 3 rounded post-nuclear whorls (? juvenile). Suture moderately deep and well delimited.

Body whorl bearing 8 rounded, strong and spineless varices. No other axial sculpture. Spiral sculpture consisting of 5 rounded, shallow cords, also apparent on the varices. Siphonal canal short, open and straight.

TYPE MATERIAL

Holotype deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

TYPE LOCALITY

New Caledonia, St.40, 22°30'S, 166°24'E ; 250-350 m (*Vauban* 1978-79).

DIMENSIONS

Height : 5 mm. — Diameter : 2.4 mm.

DISCUSSION

No related species could be found.

Genus *Nipponotrophon* Kuroda & Habe, 1971

Type-species by O. D. : *Boreotrophon echinus* Dall, 1918.

This genus was chosen instead of *Trophon* or *Trophonopsis*, as *Nipponotrophon* is much nearer this species than any other (see definition in RADWIN and D'ATILIO, 1976 : 82).

Nipponotrophon regina sp. nov.

(Pl. II, fig. 5, 5A-B)

DESCRIPTION

Shell medium sized for the genus ; maximum height 31 mm ; fragile. Color white with a very thin intritacalx.

Aperture ovate, glossy white.

Columellar lip smooth, partially erect on its anterior part ; posteriorly adherent to the shell.

Anal notch shallow, in large reversed " V " form.

Outer lip generally bearing a fimbriate wing in non adult specimens, but slightly erect and smooth in adults. Interior of outer lip smooth.

Spire high, consisting of one and one-half bulbous nuclear whorls and 5 slightly convex postnuclear whorls. Suture impressed.

Body whorl bearing 8 to 10 frilly varices with a spinelike, largely open, upward turned expansion on the carina. No other axial sculpture except the growth lines.

Spiral sculpture consisting of 5 low cords with an obsolete intermediate thread. One shallow cord on the shoulder.

Siphonal canal acute, moderately short ; large, open and slightly recurved backward.

TYPE MATERIAL

Holotype and 6 paratypes deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

1 paratype n° C 140735 in the Australian Museum, Sydney ; 1 paratype n° MF 34198 in the National Museum of New Zealand, Wellington ; 1 paratype n° NSMT-MO 61567 in the National Science Museum, Tokyo ; 1 paratype n° USNM 749865 in the National Museum of Natural History, Smithsonian Institution, Washington D. C. ; 1 paratype in R. Houart collection.

TYPE LOCALITY

Philippines, St.79, 13°44'N, 120°31,6'E, 682-770 m, (MUSORSTOM II)

OTHER LOCALITIES

MUSORSTOM II, St.55, 13°54'N, 119°58'E, 865 m ; St.56, 13°54'N, 119°57'E, 970 m.

DIMENSIONS

Holotype : 31 × 15 mm.

DISCUSSION

This new species may be compared with 4 species : *Trophon obtuseliratus* Schepman, 1911 ; *Trophon pulchellus* Schepman, 1911 ; *Trophon segmentatus* Verco, 1909 ; *Trophon plicilaminatus* Verco, 1909.

From *T. obtuseliratus* it differs by its more rounded whorls, by its more elaborate and frilly varices, its shorter siphonal canal. The columellar lip is completely adherent to the shell in *T. obtuseliratus* ; erect on 3/4 of its anterior part in the new species. The shoulder smooth in *T. obtuseliratus* but the new species always shows a low spiral cord.

T. pulchellus is a much smaller shell : lectotype examined : 16 mm. It bears 13 to 14 varical ribs on the body whorl ; it has a straighter, longer and smooth siphonal canal and finally, it has a much different protoconch.

Trophon plicilaminatus is also much smaller and finer, it has a longer siphonal canal, 11 varices on the body whorl. It has 4 shallow spiral cords but no intermediate threads. The shoulder is smooth. It has a different protoconch.

T. segmentatus is a small shell with a rounded glossy white protoconch and 5 postnuclear whorls. Holotype examined : 8,9 mm. The body whorl bears 9 frilly varices, it has 5 crowded spiral cords ; no intermediate threads. Shoulder smooth. It has a different protoconch.

Subfamily TYPHINAE Cossmann, 1903

Genus *Typhis* Montfort, 1810

Subgenus *Typhina* Jousseume, 1880

Type species by O. D. : *Typhis belcheri* Broderip, 1833.

Typhis (Typhina) virginiae sp. nov.

(Pl. II, fig. 7, 7A-B)

DESCRIPTION

Shell small for the genus, delicate and of very fragile appearance. Body whorl creamy white, translucent ; siphonal canal and upper whorls pale brown.

Aperture white, small, ovate, forming an entire, erect and smooth peristome. No apparent

anal notch. A long brown anal tube present between each varix, situated near the succeeding one, a little backward and curved approximately 45° upward. The one situated just behind last varix is very delicate and long.

Spire moderately high, consisting of one and one-quarter smooth, rounded nuclear whorls and 4 angulate postnuclear whorls. Suture deep and impressed. Body whorl bearing 4 thin, sharp varices, ending in an acute spine at the shoulder margin. Last varix bearing a somewhat prominent winglike flange, extending from the carinal spine to approximately the $3/4$ of the siphonal canal. Siphonal canal moderately long, closed, slightly bent to the right, with remnants of the 3 previous anterior canals.

TYPE MATERIAL

Holotype deposited in the Muséum national d'Histoire naturelle, Paris, type collection.

One paratype in the Australian Museum, Sydney, n° C 140736.

TYPE LOCALITY

South of New Caledonia, St.2, $22^\circ 17'S$, $167^\circ 14'E$, 425-430 m (Vauban 1978-79).

DIMENSIONS

Holotype : height : 7.5 mm — diameter : 4.2 mm.

Paratype : height : 5 mm — diameter : 3 mm.

ETYMOLOGY

Named after Virginie HEROS, technician in the department of Malacology (M.N.H.N., Paris) who sorted many of the micromuricids studied here.

DISCUSSION

This species may be compared with 2 recent species : *Typhis (Typhina) pauperis* Mestayer, 1916 and *Typhis (Typhina) bivaricata* Verco, 1909.

From *T. (T.) pauperis* it differs by its lower spire ; its different protoconch, lower and more globulous for *T. (T.) virginiae* ; by the much shorter tubes of the first whorl ; by the position of these tubes : directly near the preceding varix for *T. (T.) pauperis*, central or near the succeeding varix for *T. (T.) virginiae* ; by the curving crenulations of the outer apertural lip in *T. (T.) pauperis* and the smooth and sharp one in the new species.

T. (T.) bivaricata Verco differs by its smaller size, its shorter siphonal tube and by the curving crenulations of the outer apertural lip.

The new species has sharp varices situated on the midway of each tube, while *T. (T.) bivaricata* has 2 crenulated varices : one on the midway and one just near the succeeding varix.

T. (T.) virginiae has a flatter and larger protoconch.

Genus **Siphonochelus** Jousseume, 1880

Subgenus **Laevityphis** Cossmann, 1903

Type species by O. D. : *Typhis coronarius* Deshayes, 1865 (= *Typhis muticus* J. Sowerby, 1834).

***Siphonochelus (Laevityphis) tillierae* sp. nov.**

(Pl. II, fig. 6, 6A)

DESCRIPTION

Shell small for the subgenus, elongate, fusiform, of a white color on the whole surface.

Aperture ovate; columellar lip partially erect anteriorly, adherent posteriorly. No apparent anal notch. A short white anal tube present, situated exactly midway between each varix; a little curved backward and approximately perpendicular to the shell.

Spire high, consisting of one and one-quarter smooth rounded nuclear whorls, and 3 to 4 rounded, fusiform postnuclear whorls. Suture deep.

Body whorl bearing 4 strong and somewhat rounded varices. No trace of carinal spine.

Siphonal canal short, closed, slightly bent to the right.

TYPE MATERIAL

Holotype deposited in the Muséum national d'Histoire naturelle Paris, type collection.

One paratype n° C 140737 in the Australian Museum, Sydney.

TYPE LOCALITY

New Caledonia, St.40, 22°30'S, 166°24'E, 250-350 m (*Vauban* 1978-79).

DIMENSIONS

Holotype : Height : 5.8 mm ; diameter : 2.8 mm.

Paratype : Height : 4.8 mm ; diameter : 2.2 mm.

ETYMOLOGY

Named after Annie TILLIER, technician in the department of Malacology (M.N.H.N., Paris) who sorted many of the micromuricids studied here.

DISCUSSION

This species may be distinguished from 4 other species : *Siphonochelus solus* Vella, 1961 ; *Siphonochelus generosus* Iredale, 1936 ; *Siphonochelus (Laevityphis) tubuliger* (Thiele, 1925) and *Siphonochelus transcurrens* (von Martens, 1902).

From *S. solus* it differs by its much smaller size (an adult of *S. solus* measures 9 mm). *S. solus* has more carinated first whorls ; the anal tubes are originated directly from the succeeding varix (as in *Siphonochelus* s. s.) and are ovate, while the tubes of the new species are rounded and situated midway between each varix.

From *S. generosus* it differs by its rounded tubes while those of *S. generosus* are flattened. The new species is much more elongate. The tubes are situated midway between each varix but are connected to the succeeding varices in *S. generosus* (a *Siphonochelus* s. s.) ; this last species is also a much larger shell.

From *S. transcurrens* it differs by its more smaller size ; its different protoconch ; its more ovate aperture and shell. Moreover, *S. transcurrens* is not a *Laevityphis* as stated by RADWIN & D'ATTILIO (1976 : 196) but is a real *Siphonochelus* with its anal tubes directly originated from the varices.

From *S. (L.) tubuliger* it differs by its more elongate form ; its shorter anal tubes and the direc-

tion of these, which are bent more upward in the new species. The aperture of *S. (L.) tubuliger* is rounded, while that of *S. (L.) tillierae* is ovate; *S. (L.) tubuliger* differs also by its much finer and shorter varices; by its whorls which present a much lower carinal edge, and by the smaller siphonal canal.

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PLANCHE I

- 1, 1A, *Poirieria (Paziella) vaubanensis* sp. nov. : holotype MNHN, 10.5 × 9 mm ; 2, 2A, *Poirieria (Paziella) acera-*
pex sp. nov. : holotype MNHN, 9.5 × 6 mm (2 A : × 56) ; 3, 3A-B, *Poirieria (Paziella) spinacutus*
 sp. nov. : holotype MNHN, 9.5 × 5.8 mm (3B : × 56) ; 4, 4A-B, *Trophon (Trophonopsis) minirotundus*
 sp. nov. : holotype MNHN, 5 × 2.4 mm (4 : × 56).

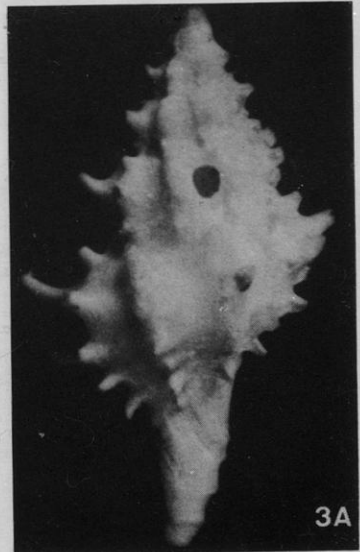
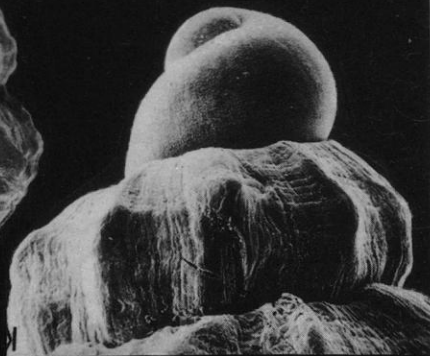
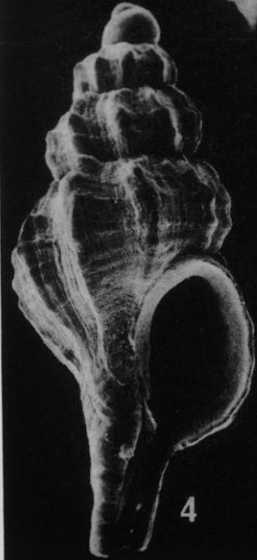
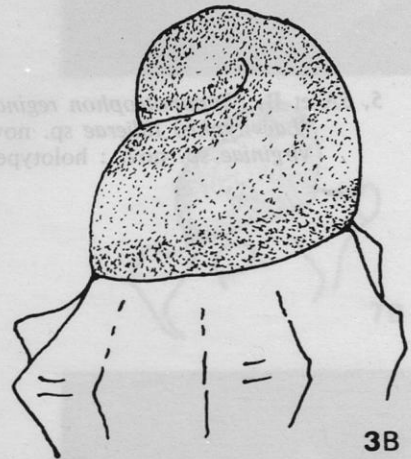
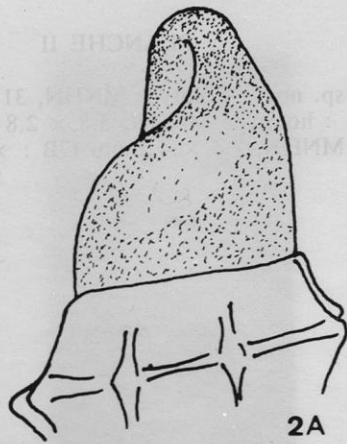
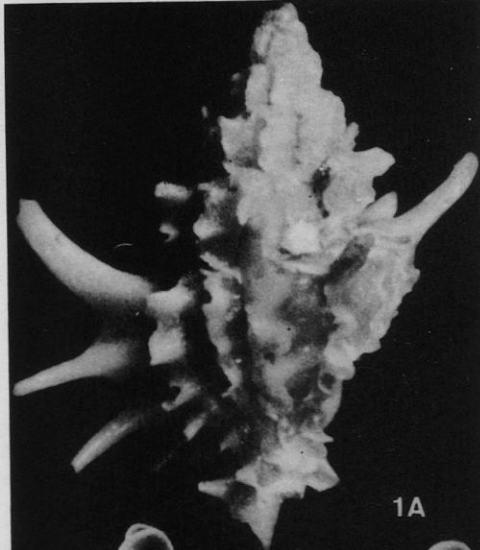
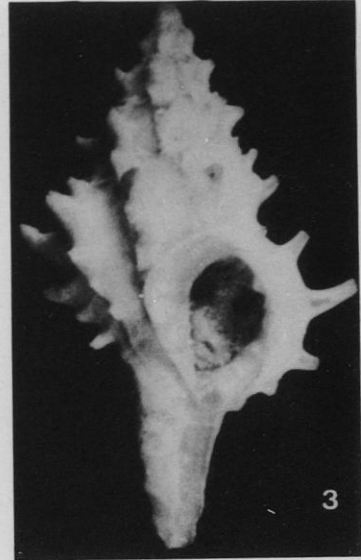
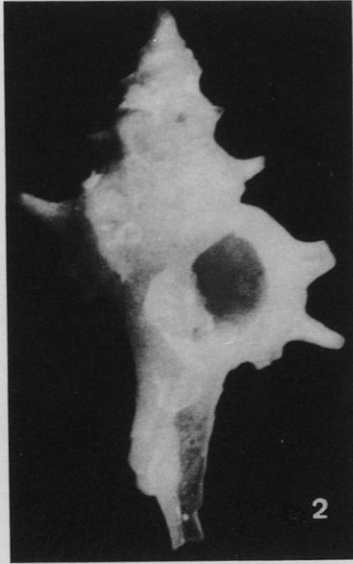
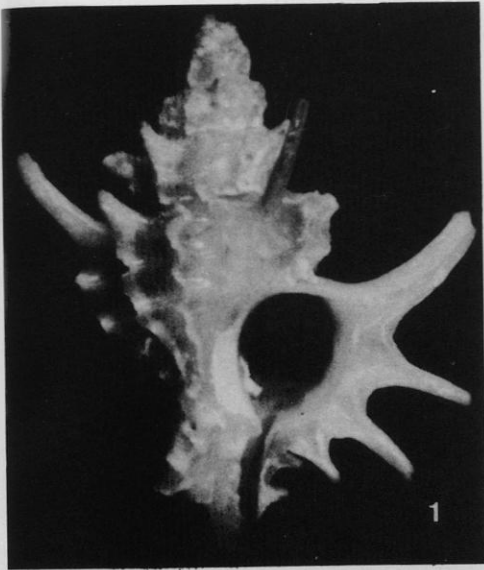
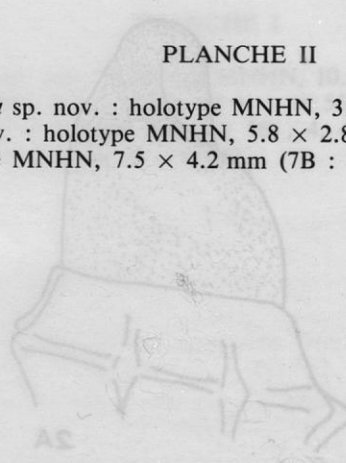
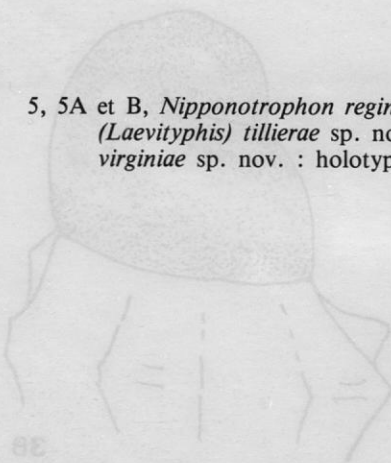
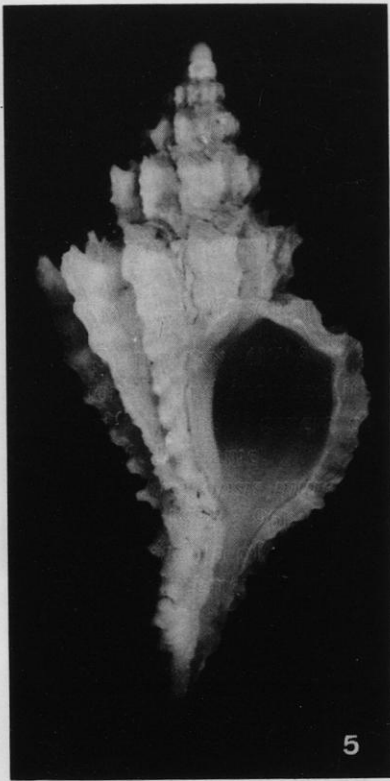




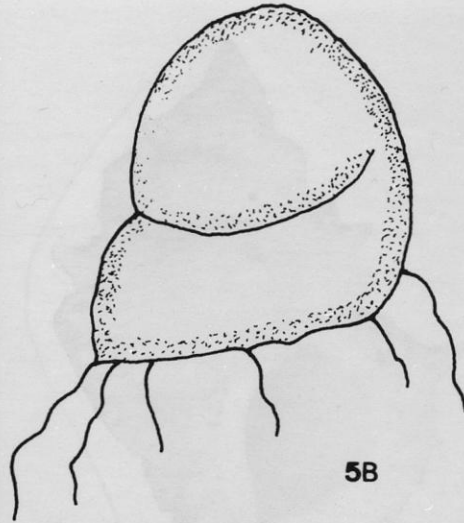
PLANCHE II

5, 5A et B, *Nipponotrophon regina* sp. nov. : holotype MNHN, 31 × 15 mm (5B : × 30) ; 6, 6A, *Siphonochelus (Laevityphis) tillierae* sp. nov. : holotype MNHN, 5.8 × 2.8 mm (6A : × 25) ; 7, 7A-B, *Typhis (Typhina) virginiae* sp. nov. : holotype MNHN, 7.5 × 4.2 mm (7B : × 25).





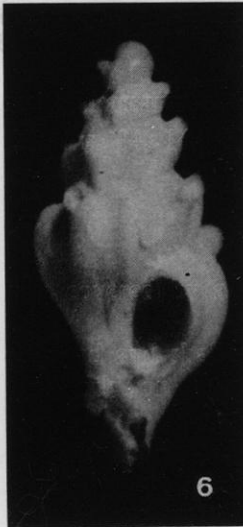
5



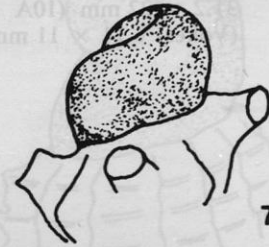
5B



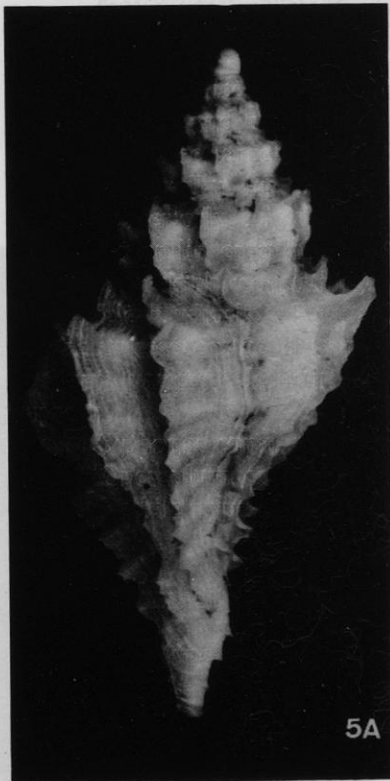
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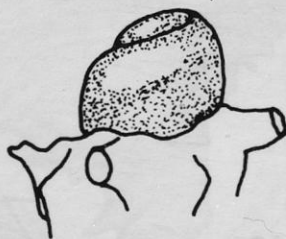
6



7B



5A



6A

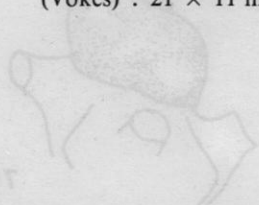


7A



PLANCHE III

- 8, 8A, *Siphonochelus (Trubatsa) pavlova* (Iredale) 6.6 × 3.5 mm (8A : × 50); 9, 9A, *Chicoreus (Siratus) pliciferoides* Kuroda, 68 × 41.5 mm; 10, 10A, *Chicoreus (Chicoreus) boucheti* Houart : holotype MNHN, 31.2 × 22 mm (10A : × 25); 11, *Siphonochelus* sp. : 9.5 × 5.5 mm; 12, *Dermomurex (Takia) infrons* (Vokes) : 21 × 11 mm.



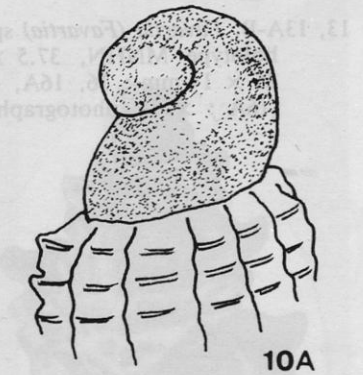
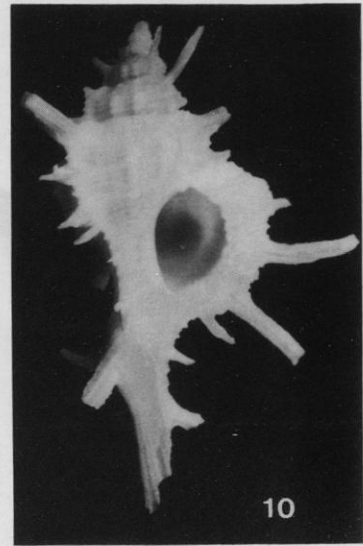
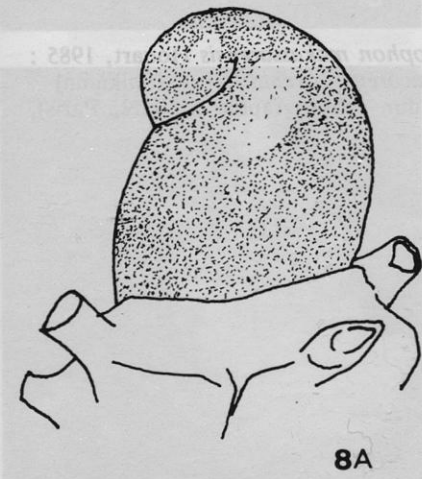


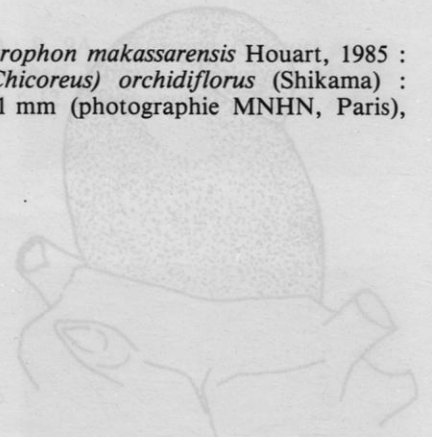


PLANCHE IV

- 13, 13A-B, *Favartia (Favartia)* sp. : 9.8 × 6.8 mm ; 14, 14A-B, (?) *Nipponotrophon makassarensis* Houart, 1985 : holotype MNHN, 37.5 × 25 mm (14B : × 27) ; 15, *Chicoreus (Chicoreus) orchidiflorus* (Shikama) : 26 × 14 mm ; 16, 16A, *Murexsul auratus* Kuroda et Habe : 4 × 2.1 mm (photographie MNHN, Paris), (16A : × 74, photographie MNHN, Paris).



A01



A8



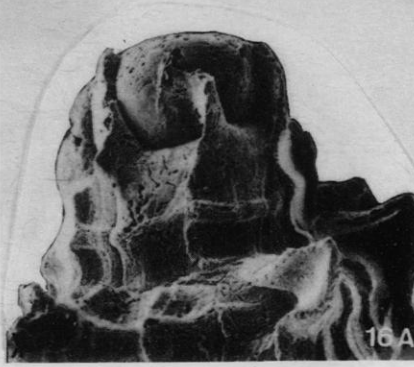
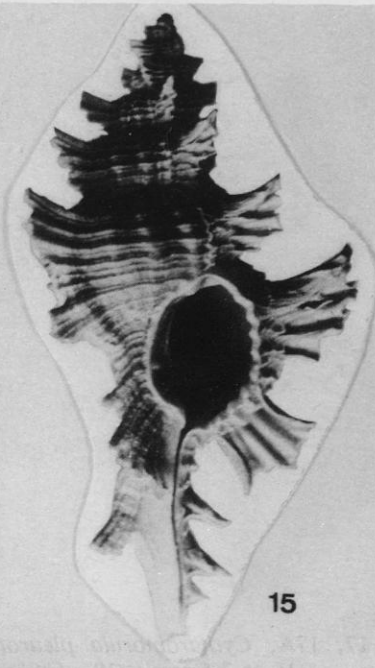
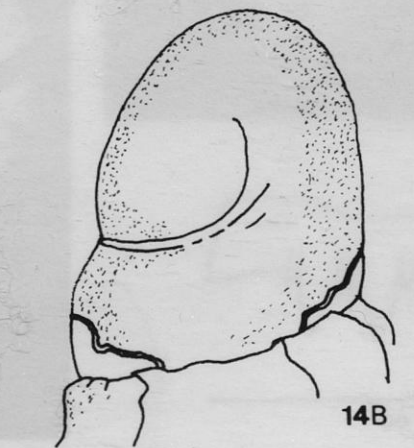
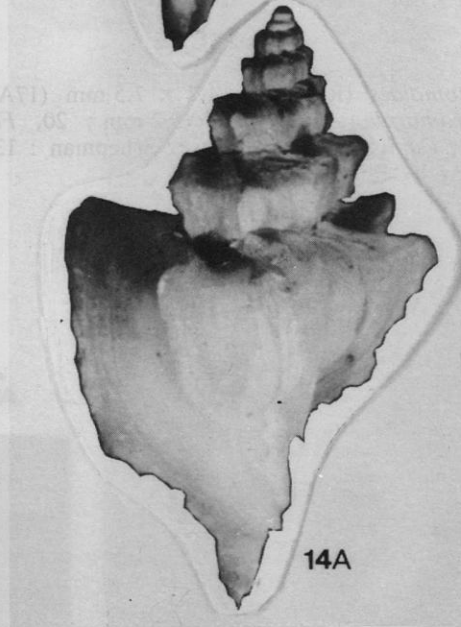
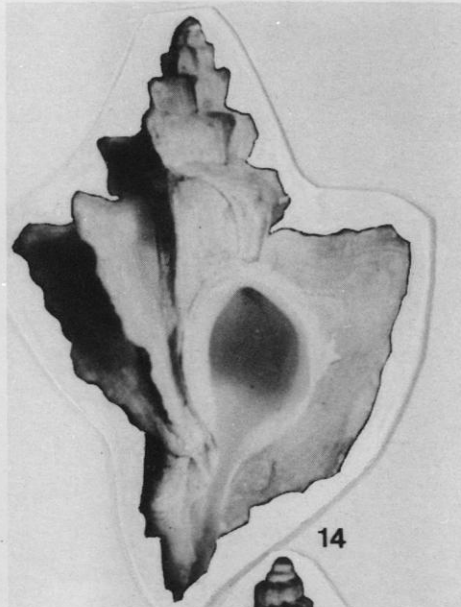
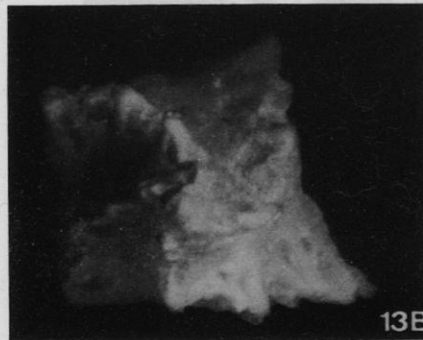
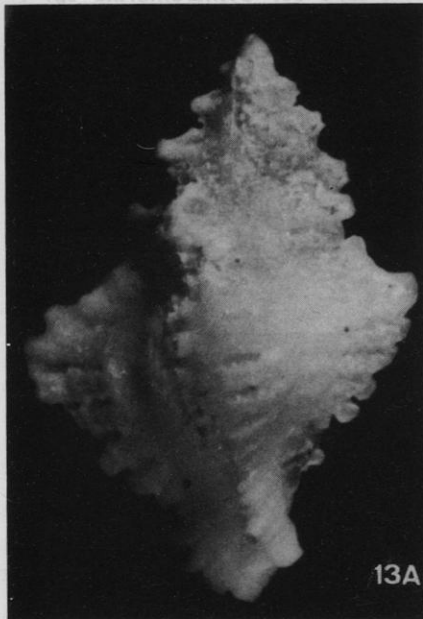
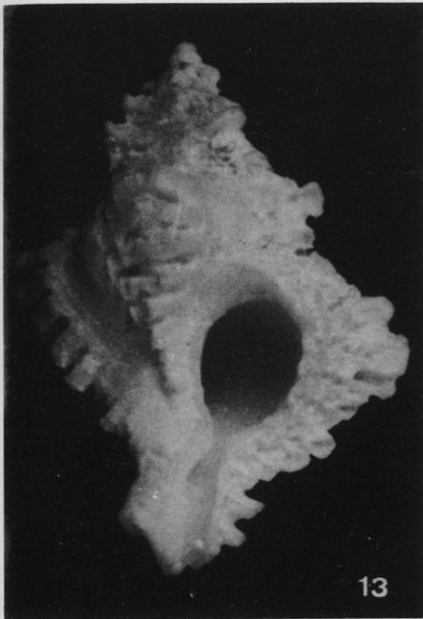
A1

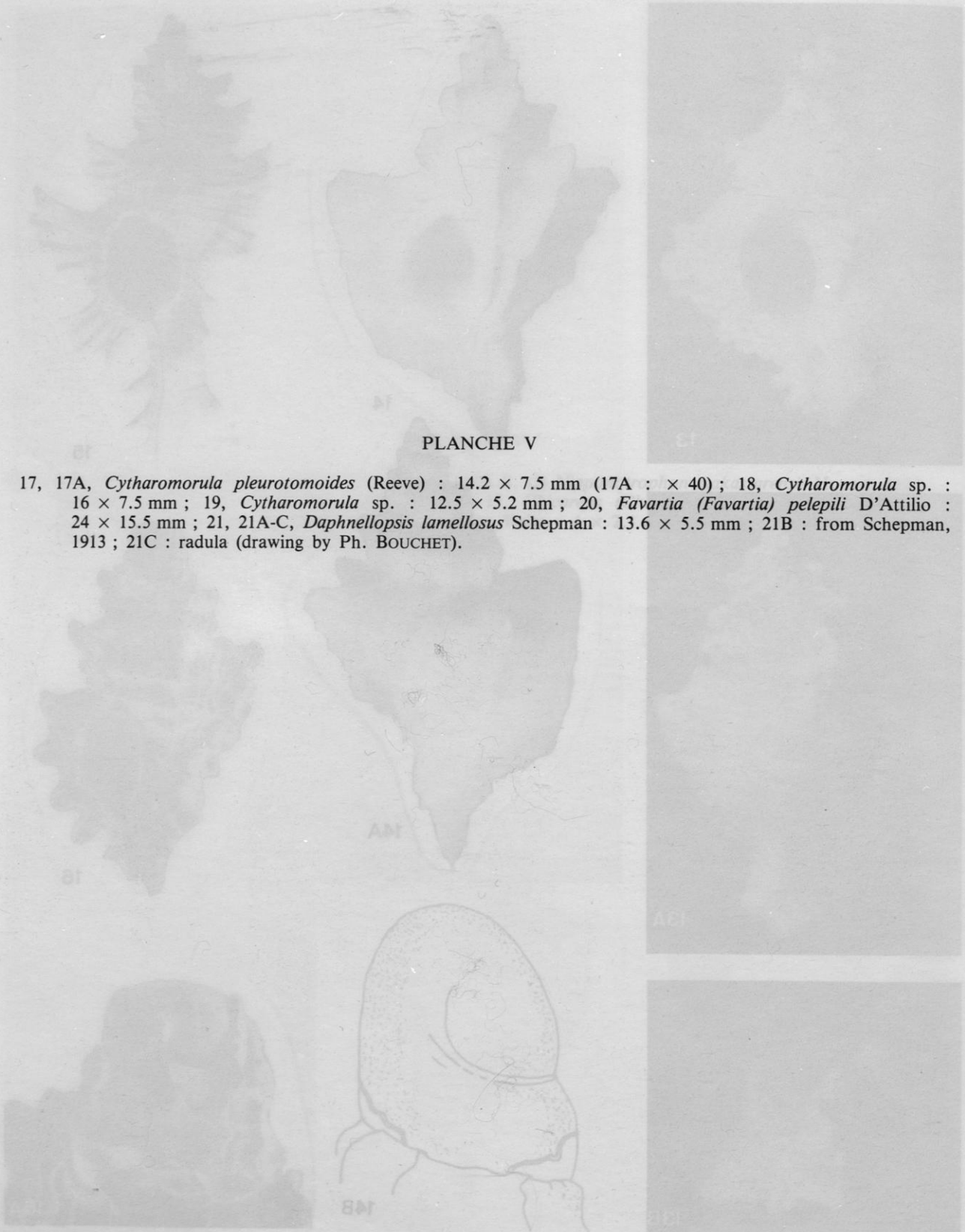


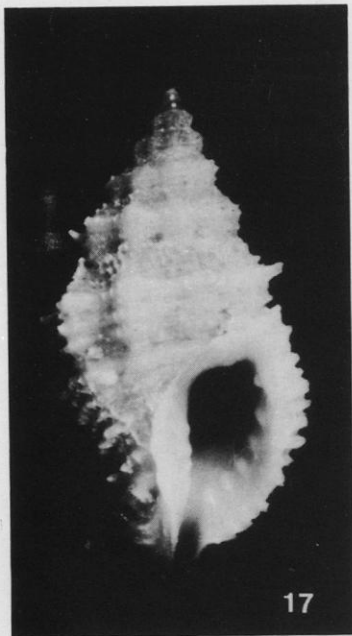
A8



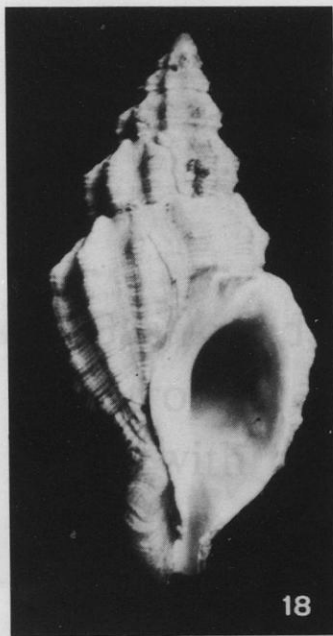
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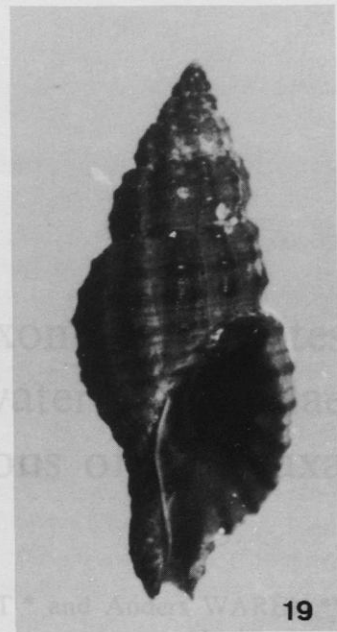




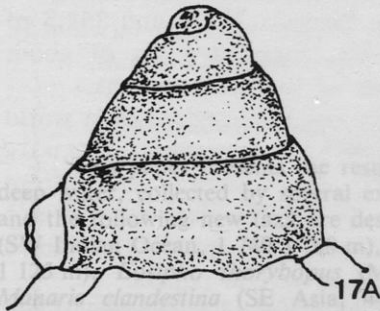
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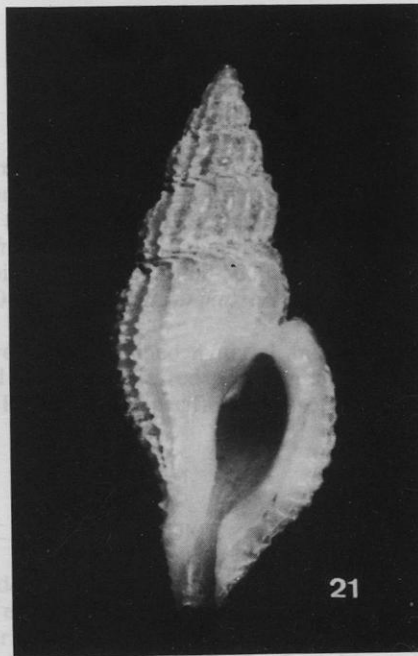
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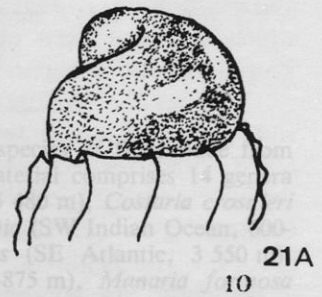
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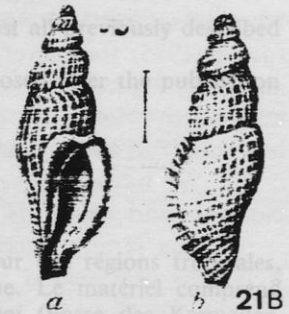
17A



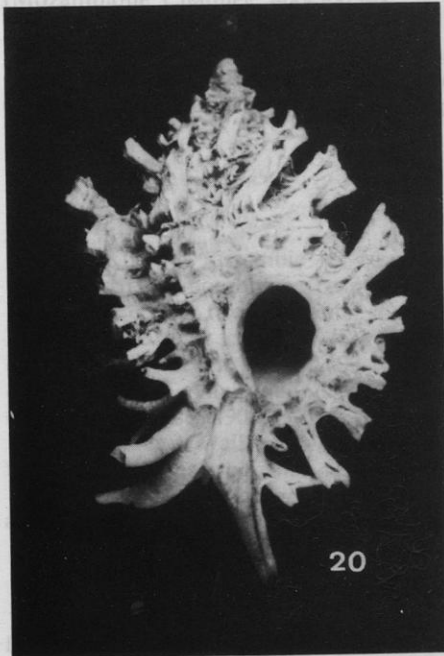
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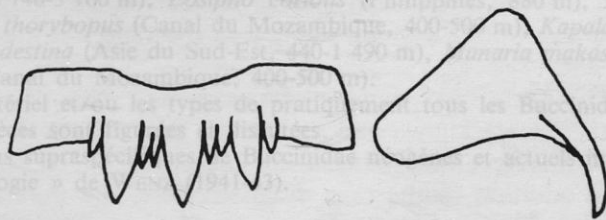
21A



21B



20



21C

50 μ

