

# GLORIA MARIS

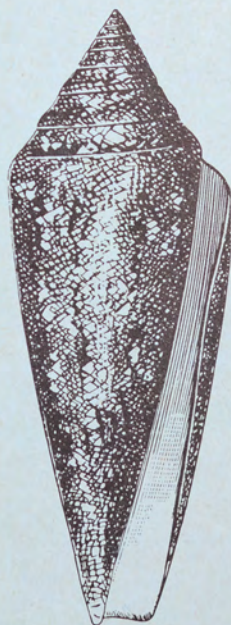
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### VOLUME 25 (1986)

- |                |   |
|----------------|---|
| J. CHRISTIAENS | The Recent and Fossil Shells of the Genus <i>Scutus</i> . |
| A. VERHECKEN   | The Recent Cancellariidae of Indonesia.                   |
| A. DELSAERDT   | Revision of the Chamidae of the Red Sea.                  |
| E. WILS        | De Conidae van de Rode Zee.                               |
| A. VERHECKEN   | Revision of the Cancellariidae of the Red Sea.            |
| J. CHRISTIAENS | Revision of the Limpets of the Red Sea.                   |

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Gloria Maris

25 (2)

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Antwerpen, maart 1986

**THE RECENT CANCELLARIIDAE  
OF INDONESIA  
(Neogastropoda, Cancellariacea)**

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**SAMENVATTING:** De Centrale Indo-Pacific, van Japan tot Australië, is één van de belangrijkste verspreidingsgebieden van de familie Cancellariidae, maar alleen voor Japan en Australië werd er een studie van gepubliceerd. Hier worden alle recente soorten van Indonesië beschreven, voor zover gekend uit de literatuur en uit museumcollecties, vooral van Museum Zoologicum Bogoriense, Bogor, Indonesia, en van Nederlandse musea.

Achttien soorten worden bestudeerd, behorend tot zes genera: *Bonellitia*, *Fusiaphera*, *Merica*, *Scalptia*, *Sydaphera*, en *Trigonostoma*. Echter, twee ervan dienen door meer materiaal te worden bevestigd vooraleer hun voorkomen in Indonesië veilig kan worden aangenomen; en *Merica elegans* wordt hier slechts voorlopig geïdentificeerd.

Voor enkele soorten worden nomenclatuurgegevens besproken of lectotypes aangeduid.

**ABSTRACT:** All cancellariid species from the Indonesian seas, as known from the literature and, mainly, from museum collections, are described and figured. Eighteen species are recognised: 1 *Bonellitia*, 1 *Fusiaphera*, 4 *Merica*, 9 *Scalptia*, 1 *Sydaphera* and 2 *Trigonostoma*.

However, two species, viz. *Merica sinensis* and *Sydaphera spengleriana*, should be confirmed by more material before their occurrence in this region can safely be accepted; and *Merica elegans* is identified only provisionally. Some nomenclatural notes are given, and lectotypes are selected for *Fusiaphera macrospira*, *Merica asperella*, *M. sinensis*, *Scalptia contabulata*, *S. littoriniformis*, *S. scalariformis*, *S. scalata*, *S. textilis*, and *Trigonostoma antiquata*.

## INTRODUCTION

The Central Indo-Pacific, along the axis Japan-Australia, is one of the world's main distribution areas of the family Cancellariidae. Some seventy species have been reported for this vast area, but they have been studied in detail only for Japan (Habe, 1961b) and for Australia (Garrard, 1975). The purpose of the present paper is to make a record of all cancellariid species actually known from Indonesian seas, based on material in museum collections and on literature data.

The area covered in this study comprises the seas of the modern state of Indonesia, which means a region roughly between 5° N. - 10° S, and 95° E. - 141° E. Abstraction has been made of political frontiers without any obvious zoogeographic impact: e.g. the W. coast of Western Malaysia and the former Portuguese part of Timor are included here. A few specimens have been recorded from "New Guinea"; even when it is not clear, as in most cases, whether this means the actual West-Irian or Papua-New Guinea, these species are included in this paper. Specimens definitely originating from Papua-New Guinea are not treated in this study.

The mollusca of Indonesia were among the first to be published on: prelinnean authors like Rumphius (1705) and Valentijn (1726) extensively reported on the shells of the "East Indian Islands", but without including Cancellariidae. Meuschen (1767) figured a specimen of the then extremely rare *Trigonostoma scalare* (Gmelin), a species known at the time only from six specimens originating from a cabinet in Batavia (the actual Jakarta), and generally known under its Dutch vernacular name "Bordestrap", which refers to its extremely scalate form.

Later, Deshayes, Kiener and also Hinds described new cancellariid species with type-localities Strait of Macassar, Borneo, New Guinea, and Moluccas. The only more recent author treating in some detail also the recent Cancellariidae of Indonesia is Schepman (1911). On the contrary, fossil Cancellariidae from the Indonesian Islands were extensively reported by Dutch paleontologists up to the first half of this century: Martin (1883-87, 1891-1906, 1914, 1925, 1928, 1931), Icke & Martin (1907), Schepman (1907), Tesch (1915), Koperberg (1931), Oostingh (1938).

### MATERIAL

In the collections of European museums seen by this writer, there are very few specimens from this region. The present study is based on material from Museum Zoologicum Bogoriense, Bogor, Indonesia; and, mainly, on material kept in Dutch museums which are, because of historical reasons, the best source of specimens. An inquiry in the periodical of the Dutch Malacological Society (Nederlandse Malacologische Vereniging), for information of Indonesian Cancellariidae in private collections, produced no response. Practically all Indonesian specimens studied were collected at least half a century ago.

#### Abbreviations used in this paper:

AL	Coll. Annie Lesage, Brussels, Belgium
AV	writer's collection
BMNH	British Museum (Natural History), London, England
KBIN	Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels, Belgium
HLMD	Hessisches Landesmuseum, Darmstadt, Federal Republic of Germany
HUJ	Zoological Museum, Hebrew University, Jerusalem, Israel
MHNB	Muséum d'Histoire Naturelle, Bordeaux, France
MHNG	Muséum d'Histoire Naturelle, Genève, Switzerland
MNHN	Muséum National d'Histoire Naturelle, Paris, France
MSNG	Museo di Storia Naturale, Genova, Italy
MSS	Museum "De Schulp", Scheveningen, The Netherlands
MZBa	Museo Zoologico, Barcelona, Spain
MZBo	Museum Zoologicum Bogoriense, Bogor, Indonesia
NHMB	Naturhistorisches Museum, Basel, Switzerland
NMB	Naturhistorisches Museum, Bern, Switzerland
MNB	Natuurhistorisch Museum Rotterdam, The Netherlands
NMW	Naturhistorisches Museum Wien, Vienna, Austria
PVP	Coll. Peter van Pel, Egmond aan Zee, The Netherlands
RMNH	Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands
ZSIC	Zoological Survey of India, Calcutta, India

## SYTEMATICAL PART

Some Cancellariidae of the Indo-Pacific region are very variable and, consequently, rather poorly known. A large number of specimens with good locality-data are needed for allowing a good study of the species and their geographic variability. Unfortunately, the material available for the present study (about 135 specimens) is far too limited to allow final conclusions.

Because of this poor knowledge of some species, literature-data given without figures are to be treated with the greatest reserve. Furthermore, it appears that a few species can occur in two phenotypic forms: one that, in spite of its general cancellariid sculpture, is smooth to the touch, while the other form feels prickly. This difference has been indicated by some authors as a distinction between closely related nominal species. This might be an analogy to the well-known phenotypic forms in Conidae (smooth and granulated forms) reported by Coomans (1973).

The following descriptions are made on Indonesian specimens, which do not necessarily completely comply with the type-specimens of the species involved. The number of protoconch whorls is counted according to Kerney & Cameron (1979: 13).

The systematics of cancellariid genera is still incompletely understood. Pending a thorough revision of this subject, the generic names used in this paper are mostly those usually applied to the taxa under discussion. All genus-group names used here are treated as a genus.

Genera are listed alphabetically; within each genus, species are given alphabetically also, except for the type-species which is treated first, if it occurs in Indonesian seas.

In the material available for study, the following eighteen species have been identified:

<i>Bonellitia garrardi</i> (Petit, 1974) . . . . .	p. 34
<i>Fusiaphera macrospira</i> (Adams & Reeve, 1848) . . . . .	p. 36
<i>Merica asperella</i> (Lamarck, 1822) . . . . .	p. 38
<i>Merica elegans</i> (Sowerby, 1822) . . . . .	p. 40
<i>Merica oblonga</i> (Sowerby, 1825) . . . . .	p. 41
<i>Merica sinensis</i> (Reeve, 1856) . . . . .	p. 42
<i>Scalptia obliquata</i> (Lamarck, 1822) . . . . .	p. 45
<i>Scalptia bicolor</i> (Hinds, 1843) . . . . .	p. 45
<i>Scalptia contabulata</i> (Sowerby, 1833) . . . . .	p. 48
<i>Scalptia crenifera</i> (Sowerby, 1833) . . . . .	p. 48
<i>Scalptia crossei</i> (Semper, 1861) . . . . .	p. 49
<i>Scalptia nassa</i> (Gmelin, 1791) . . . . .	p. 52
<i>Scalptia scalariformis</i> (Lamarck, 1822) . . . . .	p. 53
<i>Scalptia textilis</i> (Kiener, 1841) . . . . .	p. 55
<i>Scalptia verreauxii</i> (Kiener, 1841) . . . . .	p. 56
<i>Sydaphera spengleriana</i> (Deshayes, 1830) . . . . .	p. 57
<i>Trigonostoma antiquata</i> (Hinds, 1843) . . . . .	p. 60
<i>Trigonostoma scalare</i> (Gmelin, 1791) . . . . .	p. 59

## DESCRIPTION OF SPECIES.

Phylum Mollusca  
 Class Gastropoda  
 Order Neogastropoda  
 Suborder Prosobranchia

Superfamily Cancellariacea Ponder, 1973

Troschel (1866: 45) used the name Cancellariacea as a family-group name; hence it was incorrectly formed (ICZN 29 a).

The name Cancellarioidea, formed according to ICZN rec. 29 A, has practically not been used in the literature. The name Nematoglossa Olsson, proposed at ordinal level, is considered a synonym by some authors; Golikov & Starobogatov, 1975, proposed the same name as new for a suborder.

Family Cancellariidae Forbes & Hanley, 1851 (emendation for Cancellariadae F. & H., 1851: 360).

Conchological characters of the Cancellariidae are discussed by Davoli (1982: 6-7). Very little is known on the anatomy of the cancellariid animal. Good publications on this subject are rare and date only from 1964 on (Graham); but recently Harasewych & Petit (1982; 1984) published excellent studies on the anatomy of *Cancellaria reticulata* (Linnaeus) and *Olssonella smithii* (Dall).

The cancellariid radula is of a unique type (Olsson, 1970: 19); during the last decade radulae of several species have been described and figured. SEM-photomicrographs are especially useful for studying the peculiar distal ends of the radular teeth. Radulae have been studied by Barnard (1958), Graham (1966), Olsson (1970), Harasewych & Petit (1982; 1984), Schremp (1983), Schremp & Richmond (1983).

Cancellariidae do not possess an operculum.

Genus **Bonellitia** Jousseau, 1887

Jousseau, 1887: 223. Wrigley, 1935: 359, 364. Davoli, 1982: 62.

Type-species. — (original designation): *Cancellaria bonellii* Bellardi, 1841, a Miocene to Pliocene fossil from southern Europe.

Remarks. — Species of this group have been placed in the genera *Admetula* and *Neadmete*. The correct name for this genus must await a complete revision of cancellariid genera.

The following notes may be of interest in this context. Cossmann (1889: 224) described *Admetula*, type (o.d.) *C. evulsa* (Solander in Brander, 1766). He stated that Jousseau placed *C. evulsa* in *Bonellitia*, a genus whose name, according to Cossmann, is incorrectly formed ("Bonelli" should lead to *Bonellia*) and, in its emended form (viz. *Bonellia*) preoccupied. He also stated that the differences between *Admetula* and *Bonellitia* are the thickness of the shell and the presence of varices, for *Admetula*.

Sacco (1894: 42) rejected these differences, stating that *B. bonellii* frequently has varices. Cossmann (1899: 33) accepted this remark and declared *Admetula* synonym of *Bonellitia*.

The type-species of both genera, viz. *B. bonellii* and *A. evulsa*, are very variable (Davoli, 1982: 63; Wrigley, 1935: 366) in form and ornamentation but, nevertheless, clearly distinct. A good figure of the types of *B. bonellii* is given by Davoli, as "holotype" (1982: pl. 7 fig. 12), and -correctly- by Ferrero Mortara et al. (1984: pl. 32 figs. 3 a-b), as "syntype". Except for the almost unrecognisable figure published with the original description (Solander in Brander, 1766: 13, pl. 1 fig. 14), no figure of the type-specimen of *A. evulsa* seems to have been published, but Sowerby's figures (1821: pl. 361 figs. 2-4) characterise the species well. In november 1983 the present writer could study this type (unnumbered specimen in BMNH, Geology Dept.); it was found to be severely fractured.

In spite of Cossmann's recognition of *Admetula* as a synonym of *Bonellitia*, later authors did not always accept this. Garrard (1975: 33, 34) considers these genera to be different, while e.g. Eames (1957: 49) and Squires (1984: 36) use *Admetula* as a subgenus of *Bonellitia*, for forms with less muricate sculpture. The type-specimen of *A. evulsa* indeed has a rounded sculpture, without points; while *B. bonellii* has a definitely rough sculpture because of small points on the crossing of axials and spirals.

The only Indonesian species to be placed in this genus, *Admetula garrardi* Petit, has a rounded sculpture and thus should be placed in *Admetula*, if this is accepted as a valid genus. For the time being, *Bonellitia* is preferred here, because of its priority, and the minor differences between these two taxa.

***Bonellitia garrardi* (Petit, 1974)**

(figs. 1-2)

*Cancellaria (Merica) nassoides* Schepman, 1911: 263, pl. 18 fig. 9 (nom. nov. *C. nassoides* von Koenen, 1889).

*Neadmete nassoides* — Habe, 1961: 435, pl. 23 fig. 5.

*Admetula garrardi* Petit, 1974: 104 (nom. nov. for *C. nassoides* Schepman). Garrard, 1975: 33, fig. 2(10).

Type-specimen. — Holotype of *C. nassoides* is in ZMA, reg. nr. ZMA Moll. 3.11.007 (figs. 1-2).

Type-locality. — "Siboga"-station 256 (5°26.6'S, 132°32.5'E), near Kei-islands, 397 m depth.

Distribution. — Japan (Habe, 1961b); Queensland, Australia (Garrard, 1975)

Indonesian records. — Holotype only.

Description. — The elongate shell is a dead specimen: there is no colour left, nor any trace of periostracum. Dimensions: height 16.2 mm, width 10,1 mm.

Protoconch broad and flattened, somewhat corroded, with 1 3/4 smooth, shining whorls. Maximum diameter 1.0 mm.

Teloconch with 5 1/4 rounded whorls; suture somewhat impressed, but without sutural canal. The spiral sculpture on first three whorls consists of three spiral bands, which become ribbon-like on the younger of these whorls. Further on, there are five spirals, with one secondary spiral. Axial sculpture of rounded ribs: their number is 13, 13, 14, 14, and 16 on first to fifth teloconch whorl respectively. No varices on first four whorls; one smooth varix on body whorl. Moreover, there is an axial sculpture of very fine growth-lines.

Aperture ovate; outer lip with seven inner lirae. Columella bent toward outer lip, with three strong folds, the lowest fold is the rim of the siphonal canal. On the parietal side of the aperture, four spirals are visible through the callus. Umbilical chink closed by columellar callus.



Remarks. — Only few specimens of this species have been reported: apart from the holotype, ten shells from Queensland (Garrard, 1975: 33; 1983: 6) and an unspecified number from Nagasaki Prefecture, Japan (Habe, 1961: 440).

*Bonellitia superstes* Finlay, 1930, as figured by Powell (1979: pl. 45 fig. 6), is very near to *B. garrardi*. If it should prove to be identical, then Finlay's name would be the valid name.

Koperberg (1931: 68) described a fossil subspecies *timorensis* from "the younger tertiary and quaternary" of Timor, differing from Schepman's type in being much more slender, and having inside the outer lip 7 - 10 lirae, restricted to the thickened varix. However, Schepman as well as Garrard mention for *B. garrardi* also 7 lirae, "at some distance from the margin" (Schepman) or "extending well into aperture" (Garrard). The ratio width/height is, for the holotype: 0.60, and for the "much more slender" *timorensis* 0.53. Consequently, the difference between typical *B. garrardi* and the subspecies *timorensis* is not very clear. Koperberg also described a *Cancellaria* (*Bonellitia*) *lamyi* from the same locality, which is very difficultly distinguished from *B. garrardi*, but has a completely different protoconch and the axial ribs more oblique to the shell axis. Also, as can be judged from his figure (1931: pl. 2 fig. 20), the whorls are more tabulate than in *B. garrardi*.

### Genus *Fusiaphera* Habe, 1961

Habe, 1961a: 72, appendix p. 27 (text in Japanese). Garrard, 1975: 16. Petit, 1980: 215.

Type-species. — (original designation): *Fusiaphera macrospira* (Adams & Reeve), but there is some confusion on this matter, since Habe (1961b: 439) later described a new species, *F. macrospiratoides*, stating that this was the species recorded as *F. macrospira* when describing the new genus.

Distribution. — South Africa (Sowerby, 1903), Mozambique (Petit 1980). Ceylon (Preston, 1905), Andaman Islands (Sowerby, 1881), Japan (Habe, 1961b), Indonesia (Schepman, 1911), Australia (Garrard, 1975).

Characters. — Shell elongate (ratio height: width 2 - 2.4); spire very high, consisting of up to nine whorls; suture may be canaliculate. Sculpture reticulated, sometimes with irregularly spaced varices.

Remarks. — This genus has a wide distribution in the Indian and Central Indo-Pacific Ocean, but the eight species that have been described seem to be rare in their areas. Differences between these taxa are small; study of more material might strongly reduce the number of valid species.

This genus was already represented in the Balcombian (Middle Miocene) of Victoria, Australia: e.g. *F. exaltata* (Tate, 1889).

**Fusiaphera macrospira** (Adams & Reeve, 1850) (figs. 3-4)

*Cancellaria macrospira* Adams & Reeve, 1850: 41, pl. 10 fig. 2. Reeve, 1856: species 50, pl. 11 figs. 50a-b. Chénu, 1859: 275 fig. 1818.

*Cancellaria (Narona) macrospira* — Schepman, 1911: 263.

*Fusiaphera macrospira* — Petit, 1980: 215. Abbott & Dance, 1982: 230, unnumbered fig. Garrard, 1975: 16, fig. 3(9).

Type-specimens. — Lectotype, here selected: BMNH 1969347, locality "China Seas", 23.2 x 9.8 mm (Cuming colln.); paralectotype: BMNH 1874.12.11.188, (fig. 3), locality "Borneo", 14.8 x 7.1 mm (Mrs T. Lombe Taylor colln.)

Type-locality. — China Sea (ICZN 74 a iii).

Distribution. — Andaman Islands (BMNH); Queensland (Garrard, 1975).

Indonesian records. — Only the paralectotype from Borneo, and the "Siboga" specimen from Bougainville Strait (Moluccas) ZMA.

Description. — Both shells are juveniles; very slender, highly spired. Colour whitish. Dimensions: 10.4 x 5.1 mm. and 14.8 x 7.1 mm.

Protoconch naticoid, with 2 1/4 smooth whorls, suture impressed. Maximum diameter 1.1-1.2 mm. Passage into teleoconch not clearly marked.

Teleoconch with up to five rounded whorls; suture impressed, becoming somewhat canaliculate only at the fourth teleoconch whorl. Spiral sculpture: six low narrow ridges on first three whorls; seven to eight on fourth whorl. From the third teleoconch whorl on, a secondary spiral occurs.

Axial sculpture consists of narrow ribs, low but rather sharp, becoming more diffuse on last whorl. Number of axials on first to fourth teleoconch whorl respectively: 9-12, 10, 12-14, 18-20. Moreover, there is a sculpture of minute growth-lines. Aperture elongate, constricted at both ends; height 38-40 % of total shell height. There is a small parietal tooth, and 12-13 unsharp inner lirae on outer lip. Columella parallel to shell axis, with three well-marked folds: the highest is the strongest, and the lowest is the rim of the siphonal canal. Umbilical chink half covered by columellar callus.

Remarks. — This species is differentiated by Habe (1961b: 439) from the Japanese *F. macrospiratoides* Habe, 1961b in its reticulate sculpture, which is much coarser than in this last species, reported to have eight primary spirals and about 60 growth riblets on the penultimate whorl. *F. azumai* Habe, 1961a is reported (Habe, 1968: 112) to have eight primary spirals and 35 longitudinal riblets on that whorl.

Figs. 1-2. *Bonellitia garrardi* (Petit, 1974), Holotype of *Cancellaria nassoides* Schepman, 1911, "Siboga"-station 256, 16.2 x 10.1 mm. ZMA Moll. 3.11.007. Photographs: L. A. van der Laan, ZMA.

Figs. 3-4. *Fusiaphera macrospira* (Adams & Reeve, 1850). 3, Borneo, 14.8 x 7.1 mm, BMNH 1874.12.11.188 (paralectotype). 4, Bougainville Strait (Moluccas), 10.4 x 5.1 mm, ZMA.

Figs. 5-6. *Merica asperella* (Lamarck, 1822). 5, Leksoela (Buru), 29.1 x 19.8 mm, ZMA. 6, Crabbed specimen with mutilated columella, Ambon, 25.1 x 17.7 mm, RMNH.

Figs. 7-8. *Merica oblonga* (Sowerby, 1825). 7, Macassar Strait, 28.5 x 14.3 mm, NMW. 8, Tandjong Tiram (Sumatra), 36.9 x 18.0 mm, ZMA.

Fig. 9. *Merica elegans* (Sowerby, 1822), Madura, 36.5 x 21.9 mm, RMNH.



1



3



2



5



4



6



7



8



9

Genus *Merica* H. & A. Adams, 1854

H. & A. Adams, 1854: 277. Cossmann, 1899: 13. Marks, 1949: 458. Korobkov, 1955: 324. Garrard, 1975: 3.

Type-species. — (subsequent designation Cossmann, 1899: 13): *Cancellaria melanostoma* Sowerby, 1848, from the "Indian Ocean".

Distribution. — Indo-Pacific, from Japan to Australia and westwards.

Characters. — Shell oval to fusiform; whorls decussated; narrow sutural canal may be present. Aperture constricted at both ends; inner lip covered with callus, outer lip with strong lirae inside. Columella straight to slightly bent to the outer lip; three folds on the columella, and often some granulations on the lower part of the columellar callus. Siphonal fasciole may be well developed. Colour mostly brownish, often with paler spiral bands.

Remarks. — Cossmann, while designating the type-species, synonymized it with *C. asperella* Lamarck, a species not originally included in *Merica*. *C. asperella* is here considered different from *C. melanostoma*.

The group of *Merica*-species has always puzzled authors (e.g. Loebbecke, 1887: 12-16). The great intraspecific variability within this group, together with the lack of enough well-documented reference-material, certainly makes determination difficult in some cases.

***Merica asperella* (Lamarck, 1822)**

(figs. 5-6)

Unnamed figure, Lamarck, 1816: pl. 374 figs. 3a-b.

*Cancellaria asperella* Lamarck, 1822b: 112. Kiener, 1841: 4, pl. 3 fig. 1. Sowerby, 1849: 447, pl. 93 fig. 38, pl. 95 fig. 74. Reeve, 1856: species 17, pl. 4 figs. 17a-b. Loebbecke, 1887: 13, pl. 3 figs. 1-4. Cernohorsky, 1972: 179, pl. 50 fig. 3.

*Cancellaria grayi* Tryon, 1885: 70, pl. 3 fig. 33.

*Cancellaria (Merica) elegans* — Garrard, 1975: 3, fig. 1 (1). (? non *C. elegans* Sowerby).

Type-specimen. — Lectotype, here selected: MHNG, reg. nr. 1097/84; height 36 mm, width 23 mm.

Type-locality. — Unknown to Lamarck.

Distribution. — Philippines (Sowerby, 1849); South China Sea (Way & Purchon, 1981: 320); NW-ward from E. Australia (Cernohorsky, 1972); NE. Australia and Queensland (Garrard, 1975: 4); Madagascar (Dautzenberg, 1923: 29) (?).

Indonesian records. — "Indonesia": 1 spec. ZMA; Moluccas: 5 specs. ZMA, 2 specs. RMNH; Ambon: 1 spec. ZMA, 1 spec. MNHN; Leksoela, Boeroe: 1 spec. RMNH; Timor: 5 specs. leg. Fr. Vianney 1966, AV.

Description. — Shell solid, rather heavy; yellowish brown to dark brown, banded with pale spirals (three on body whorl). Dimensions: up to 46.3 mm high and 26.7 mm wide.

Protoconch with 1 1/2 to 2 smooth, naticoid whorls, slightly deviated from teleoconch shell axis. Maximum diameter 1.0 mm.

Teleoconch with up to six whorls. Teleoconch sculpture starts abruptly with six spiral ridges, which from with some 20 narrow axial ribs a neatly quadratic reticulation on first and second teleoconch whorl; the colour of these whorls is purplish brown. The axial ribs on the following whorls become broader and more rounded, and the spiral sculpture has intermediate spirals of second and third order: 1 and 2-3 respectively. Sculpture coarse, consisting of 17-22 axials and 5-6 main

spirals on penultimate whorl. Narrow, but definitely marked, sutural canal, becoming perceptible only after the second teleoconch whorl. The canal itself is without prominent sculpture.

Aperture with 12 lirations inside the outer lip. Columella arcuated towards outer lip, with three folds, counting also the edge of the siphonal canal; the middle fold is the faintest and the upper one the strongest. Strong callus reflected on columellar side, partly covering the slitlike umbilicus, which is bordered by a well-developed siphonal fasciole. The lower part of the callus shows 3-4 short, parallel plications roughly in the direction of the columellar folds.

Remarks. — In the literature there has been, and still is, a great confusion concerning the names *C. asperella* Lamarck and *C. elegans* Sowerby, their priority, and the species to which these names have to be applied. Part seven of Lamarck's *Histoire Naturelle des Animaux sans Vertèbres* is dated august 1822; if the dates cited by Garrard (1975: 4) are correct then part five of Sowerby's *Genera of Recent and Fossil Shells* was published not later than 30-iv-1822. Consequently, *C. elegans* should take priority, if both names are synonym.

However, this synonymy is questionable, at least. *C. elegans* was published with only a figure and a name (Sowerby, G. B. (I), 1822: pl. 218 fig. 3, and its caption); its type-specimen has not been found, it is not in BMNH. A description was given only by Sowerby G.B. (II) (1849: 446, nr. 25); it indicates the difference with *C. asperella*: *C. elegans*' sculpture is not coarse, its suture is "subcanaliferous" ("canaliferous" for *C. asperella*) and its colour is paler. Reeve (1856: species nr. 12) stated that *C. elegans* is more acuminate fusiform, more elegantly sculptured, and not excavately channeled at the suture. Crosse (1861: 237), for the same taxon, mentioned the more acuminate form and the absence of sutural canalication. He proposed the new name *C. reeveana* for *C. elegans*, which he thought to be preoccupied by *C. elegans* Deshayes, 1824. Here he made a double mistake: Deshayes' species is to be dated 1835 (Anderson, 1964: 352), and he dated *C. elegans* in 1830. Thus, Crosse's *C. reeveana* is an unnecessary replacement name, but it has been used regularly in the literature. Loebbecke (1887: 12) used this name for *C. elegans* Sowerby; he described the species as having "eine deutliche tiefe nach unten mehr oder minder rinnenfoermig werdende Naht", thus opposing Crosse. He also introduced two variety-names for *C. reeveana*: *C. subsinensis* (suture not canalicate) and *C. laticosta* (spira higher; less axial ribs). This last form is figured by Kuroda, Habe & Oyama (1971: 202, pl. 54 fig. 8) under the name *Merica asperella*. Loebbecke considered *C. asperella* and *C. reeveana* different, but remarked that more ample material might show them to be one species. Most other authors synonymize *C. asperella* and *C. elegans*, and the majority of them prefer the specific name *asperella*.

Tryon (1885: 70) separated the specimens figured as *C. asperella* by Sowerby (1849) and by Reeve (1856) from *C. asperella* Lamarck, naming the first taxon *C. grayi*, but without giving the differences; it is probably only a stout form of *C. asperella*, and Tryon's name has not been used by subsequent authors.

Also in the present century the great diversity of opinions continues. Oostingh (1938: 105) considers *C. elegans*, *C. sinensis* Reeve and *C. melanostoma* Sowerby as all belonging to the very variable species *C. asperella*. Cernohorsky (1972: 179) understands *C. elegans* as a possible senior synonym of *C. asperella*. Garrard (1975:

4), in the description of an Australian species for which he uses the name *C. (Merica) elegans* (but which is here understood as *C. asperella*), mentions the "sutures deeply impressed at base of shallow canal"; he takes no position as to its synonymy with *C. asperella*. Marcy & Bot (1969: pl. 69) as well as Abbott & Dance (1982: 225) figure both a *C. elegans* and a *C. reeveana*, but no *C. asperella*.

One can accept Sowerby's (1849) description as the most authoritative one on *C. elegans*; it differentiates this species from *C. asperella*, although the differentiating characters "coarse sculpture" and colour are very variable within the genus *Merica*. Moreover, where is the limit between "canaliferous" and "subcanaliferous"?

Considering all these facts, the conclusion can only be that the exact identity of *C. elegans* Sowerby is still rather confuse.

Consequently, it is difficult indeed to take position as to the alleged synonymy of this name with *C. asperella*. Only this last name has a solid nomenclatural base (lectotype in MHNG), so this name is used here for the specimens conforming its type.

However, in the limited amount of specimens available for the present study, a few shells bear a striking resemblance to Sowerby's figure (1822: pl. 218 fig. 3) of *C. elegans*; they are provisionally identified as this species.

It is obvious that only a great amount of well-documented material will allow a better understanding of this old problem.

Some specimens apparently lack the columellar folds (see fig. 6); this seems to result from the action of hermit-crabs (cfr. discussion on *S. scalariformis*).

*Cancellaria asperella* Hoenighaus, 1831, is a *nomen nudum*, proposed provisionally for a tertiary fossil from Piacenza, Italy.

### *Merica elegans* (Sowerby, 1822)

(fig. 9)

*Cancellaria elegans* Sowerby, 1822: pl. 218 fig. 3. Sowerby, 1849: 446, pl. 93 fig. 36, pl. 96 fig. 104. Reeve, 1856: species 12, pl. 3 figs. 12a-b.

*Cancellaria reeveana* Crosse, 1861: 237. Loebbecke, 1887: 12, pl. 2 figs. 1-2, 4-6.

Not *Cancellaria (Merica) elegans* — Garrard, 1975: 3.

Type-specimen. — Whereabouts unknown. Sowerby based the name on a specimen "in Mrs. Mawe's collection"; there is no indication that this specimen is, or should be, in BMNH (K. Way, pers. comm.), as is suggested by Garrard (1975: 4). Four specimens, labeled "syntypes of *C. reeveana* Crosse" (BMNH 1968417), cannot be types of *C. reeveana*, as this name is only a replacement name for *C. elegans* Sowerby (see remarks on *M. asperella*); thus Crosse's name has the same types as *C. elegans*.

Type-locality. — Unknown to Sowerby (1822); G.B. (II) Sowerby (1849) gives as locality: Isle Ticao (Philippines).

Distribution. — Philippines (AV, HUI).

Indonesian records. — Madura: 1 spec. RMNH, E.T. Jochim, 1914; Djoemiang Tjerek (Madura): 1 spec. MZBo, Gst. 2398; Soengeiliat (E. coast of Banka): 2 specs. ZMA, leg. A. H. Schrage, 1947; Macassar: 1 spec. MNHN.

Description. — Shell inflated fusiform, dimensions up to 32.5 mm high and 23.7 mm wide. Colour pale beige, with three very pale brown bands on body-whorl.

Protoconch with 1 3/4 naticoid whorls, largest diameter 0.9 mm.

Teloconch with up to 5 1/2 slightly convex whorls. Suture somewhat impressed, but without sutural canal. Sculpture finely reticulated; 28-30 axial ribs on penultimate

whorl, with about six very fine lamellose growth-lines between each set of axials. Spiral sculpture consists of primary spirals (8 on penultimate whorl), with 3 secondary spirals between each set of primaries, the middle one is the strongest.

Aperture elongate, constricted at both ends. Outer lip with 14 lirae inside. Inner lip covered with whitish callus. Columella straight, parallel to shell axis, with three folds, the uppermost is the strongest. Siphonal fasciole poorly developed, surrounding a small umbilicus, which is almost covered by columellar callus: only a narrow slit is visible. The lower part of the columellar callus has 4 short, parallel plications roughly in the direction of the columellar folds.

Remarks. This species is very near to *M. asperella*: see discussion of that species. Although the exact identity of *M. elegans* is still unclear, the general matching of the studied specimens with Sowerby's figure provisionally leads to regarding these specimens as *M. elegans*. However, it must be emphasized that this is merely based on a general resemblance in form, and that precise details on sculpture etc. of typical *M. elegans* are still missing.

It is possible that more material may show that *M. asperella*, and the forms studied here, can be interconnected in a continuous line, thus showing them to be the same taxon. For the time being, the differences between *M. asperella* and *M. elegans* (as derived from these specimens matching Sowerby's figure) are here taken to be: *M. elegans* lacks the narrow but well-defined sutural canal; has a finer reticulation (about 30 axials and 8 spirals on penultimate whorl, *versus* about 20 and 6 resp., for *M. asperella*); has the siphonal fasciole poorly developed; is generally more elongate and spindle-like; and has 3 secondary spirals, *versus* 1 secondary and 2-3 tertiary spirals (thus creating a set of 5-7 minor spirals between each set of main spirals) in *M. asperella*.

*Cancellaria elegans* Bonelli is a manuscript name for a Tertiary fossil from Piemont, Italy (cfr. Sacco, 1904: iii).

### **Merica oblonga** (Sowerby, 1825)

(figs. 7-8)

*Cancellaria oblonga* Sowerby, 1825: Appendix p. xv nr. 1543. Sowerby, 1833: 3, fig. 19 Abbot & Dance, 1982: 225.

*Cancellaria bifasciata* Deshayes, 1830: 181.

*Cancellaria decussata* Nyst, 1838: 115, 113 fig. 5. (non *C. decussata* Sowerby, 1832).

*Cancellaria (Merica) bifasciata* — Melvill & Standen, 1901: 450.

*Merica oblonga* — Chénu, 1859: 277 fig. 1847. Petit, 1974: 112, fig. 5.

*Merica bifasciata* — Habe, 1961b: 434; pl. 24 fig. 27.

Type-specimen. — Sowerby's specimen(s) from the Tankerville auction have not yet been located; this material is not in BMNH. The holotype of *C. bifasciata* Deshayes is in MNHN, no registration number; height 21.4 mm, width 11.8 mm.

Type-locality. — Unknown to Sowerby, and also to Deshayes for *C. bifasciata*.

Distribution. — Japan (Habe, 1961); Bay of Bengal (AV); Arabian Sea and Gulf of Oman (Melvill & Standen, 1901); Hong Kong (NMW; BMNH); Formosa (Habe, 1961); Philippines (MNHN); South Africa (?) (Barnard 1959; Kensley, 1973).

Indonesian records. — Tandjong Tiram (E. coast of Sumatra): 1 spec. ZMA; Strait of Macassar: 5 specs. BMNH, 2 specs. NMW.

Description. — Shell slender fusiform; up to 36.9 mm high and 18.3 mm wide.

Protoconch white, consisting of 2 smooth, naticoid, very slightly deviated whorls. Maximum diameter 1.1 mm.

Teloconch: 4 1/4 slightly convex whorls; its sculpture is a fine reticulation formed by numerous spirals (16 on penultimate whorl) and axials (51 on penultimate whorl) of nearly the same strength. This sculpture is not rough to the touch. Suture slightly impressed, without canal. Aperture elongate; its height is 55 % of total shell height. Callus on parietal side is very thin. Columella slightly curved off shell axis to apertural side. Three columellar folds, of which the uppermost is the strongest, middle one is the faintest; lowest fold formed by the edge of small siphonal canal. Umbilical chink very narrow, covered by callus which shows some granulations on its lower part.

No siphonal fasciole.

Remarks. — Until a few decades ago, this species was supposed to occur also off central West America (Keen, 1958: 438); its Indo-Pacific region was pointed out by Petit (1974: 112). As can be judged from material available (AV), *M. oblonga* appears to be rather common in the Bay of Bengal (Madras). The citation of this species for South Africa (Barnard, 1959: 14, one complete and three broken specimens) and the figure given by Kensley (1973: 195 fig. 749) are not convincing. Barnard cites Tomlin who identified the S. African shell as "*bifasciata* var.", with the suggestion that further examples might show it to be a distinct species", which it probably is. It rather looks like a form of *M. melanostoma* Sowerby, 1848.

*Cancellaria decussata* Nyst, a name to be rejected as a junior primary homonym of *Cancellaria decussata* Sowerby, 1832 is a junior synonym of *M. oblonga*. Nyst described it from unknown locality; he mentioned its resemblance to *C. bifasciata*, but did not specify the differences.

### *Merica sinensis* (Reeve, 1856)

(figs. 10-11)

*Cancellaria sinensis* Reeve, 1856: species 35, pl. 8 figs. 35a-b. Tryon, 1885: 74 pl. 4 fig. 50. Abbott & Dance, 1982: 226.

*Momoebora elegans sinensis* — Kuroda, Habe & Oyama, 1971: 201, pl. 54 fig. 7.

*Merica asprella* (sic) — Habe, 1961b: 434, pl. 24 fig. 26 (non *M. asperella* (Lamarck)).

*Merica reeveana* — Kira, 1962: 91, pl. 32 fig. 21 (non *M. reeveana* Crosse).

Figs. 10-11. *Merica sinensis* (Reeve, 1856). 10, Moluccas, 36.5 x 23.8 mm, ZMA. 11, Deviated protoconch of specimen from S. W. Taiwan, scale-bar = 1 mm, AV. SEM-photograph: SEM-laboratory, University of Basel; M. Düggelin, operator.

Fig. 12. *Scalptia contabulata* (Sowerby, 1833), Madura, 24.6 x 16.3 mm, RMNH. Specimen whitened with ammoniumchloride, photograph: Dr P. Jung, NMB.

Figs. 13-16. *Scalptia bicolor* (Hinds, 1843). 13-14, "Siboga"-station 258, 16.7 x 11.9 mm, ZMA. 15, South Moluccas, 17.2 x 13.3 mm, ZMA. 16, South Moluccas, 19.1 x 12.9 mm, ZMA.

Fig. 17. *Scalptia obliquata* (Lamarck, 1822), Puluh Weh (Sumatra), 18.5 x 14.2 mm, RMNH.

Fig. 18. *Scalptia verreauxii* (Kiener, 1841), Moluccas, 22.8 x 15.9 mm, ZMA.





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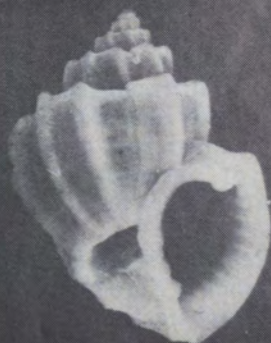
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Type-specimens. — Lectotype, here selected: BMNH 1968275/1; 2 paralectotypes: BMNH 1968275/2-3 (one of them is another species, probably *M. melanostoma*).

Type-locality. — China (Reeve).

Distribution. — Japan (Habe, 1961b); Taiwan (AV).

Indonesian records. — Only the present specimen: Moluccas, ZMA.

Description. — Shell heavy-walled; colour pale brown, with two whitish spiral bands on body-whorl. Dimensions: 36.5 mm high, 23.8 mm wide.

Protoconch: 1 3/4 white whorls, acutely deviated from teleoconch axis; maximum diameter 1.3 mm (fig. 11).

Teleoconch consists of 3 3/4 whorls, with a very narrow sutural canal. Sculpture finely reticulate, consisting of flat, ribbon-like spirals (10 on penultimate whorl), with one finer secondary spiral between each set of main spirals; and of many narrow, rounded axial ribs, numbering 38 on penultimate whorl. Aperture elongately ovate, whitish inside; height is two-third of total shell height; there are 14 strong lirae on inside of the labrum. Columella with two strong folds (uppermost is the strongest), and a third fold formed by the rim of the siphonal canal. Umbilicus very narrow, half covered by white columellar callus, which shows some granulations on its lower part. Siphonal fasciole moderately developed.

Remarks. — As stated by Garrard (1975: 6, referring to Petit), this species can easily be differentiated from allied species by its acutely deviated protoconch, which was already figured by Yen (1935: pl. 11 fig. 16) under the name *Merica reeveana*. The southern limit of its known area was, until now, southern Taiwan (Garrard, 1975: 6). This single specimen, without precise data on locality or collector, will have to be confirmed by other shells before the occurrence of *M. sinensis* in Indonesia can be accepted.

*Cancellaria sinensis* is the type-species (original designation) of *Momoebora* Habe & Kuroda in Kuroda, Habe & Oyama, 1971. The deviated protoconch seems to be the only characteristic feature differentiating this genus from *Merica*. *Momoebora* has not been used by subsequent authors.

#### Genus *Scalptia* Jousseau, 1887

Jousseau, 1887: 192, 213. Cossmann, 1899: 15. Wenz, 1943: 1358. Marks, 1949: 458. Petit, 1980: 211.

Type-species. — (original designation): *Cancellaria obliquata* Lamarck, 1822.

Distribution. — Indo-Pacific, roughly west of 180° E.

Characters. — Shell with well-developed, flat to concave, sutural ramp; parietal tooth in aperture generally well developed. Umbilicus narrow to rather wide, but much more closed than in *Trigonostoma*. Axial sculpture stronger than spiral.

Remarks. — Already Jousseau (1887: 192) stated that the species of this genus are very variable according to locality, and have a tendency "à se multiplier et à se diviser". He assumed that this genus is in full development, contrary to *Trigonostoma*, which he thought to be on its way to extinction. Although this may be a premature conclusion, it typifies the situation well.

*Trigonaphera* Iredale, 1936, is synonymized with *Scalptia* by Petit (1980: 211).

**Scalptia obliquata** (Lamarck, 1822)

(fig. 17)

*Cancellaria obliquata* Lamarck, 1822b: 115. Sowerby, 1832: 4, fig. 26. Kiener, 1841: 21, pl. 6 fig. 2.*Cancellaria (Trigonostoma) obliquata* — Schepman, 1911: 264.*Trigonostoma obliquata* — Chénu, 1859: 276, fig. 1830. Cernohorsky, 1972: 181, pl. 50 figs. 6-6a. Garrard, 1975: 26, fig. 3(17).*Scalptia obliquata* — Petit, 1980: 211, fig. 1. Abbott & Dance, 1982: 228 last fig. (last-but-one fig. is erroneously named).

Type-specimen. — Holotype: MHNG 1097/91; height 18.4 mm, width 14.2 mm.

Type-locality. — Unknown to Lamarck. Garrard (1975: 27) gives New Caledonia, but cites no source of this information.

Distribution. — Mozambique (Petit, 1980); Zanzibar (MHNB, MSNG); Japan (?) (Petit, 1980; but the species is not mentioned by Habe, 1961b); Taiwan (AV); Philippines (AV); W. Australia (Garrard, 1975); New Caledonia (id); Queensland (Garrard, 1983); Tahiti (?) (Couturier, 1907: 177, based on a specimen in an ethnological collection).

Indonesian records. — Moluccas: 5 specs. ZMA, 2 specs. RMNH, 4 specs. NMR, 1 spec. NMB; Pulu Weh, Sabang, Sumatra: 1 spec. RMNH; Flores: 1 spec. HLMD.

Description. — Shell rounded, spire relatively short. Colour whitish to a pale beige. Dimensions: up to 18.5 mm high and 14.3 mm wide.

Protoconch: 2 to 2 1/2 smooth, naticoid whorls, very slightly deviated. Maximum diameter 0.9-1.2 mm.

Teleoconch with up to 4 1/2 rounded whorls; 11 axial ribs on first teleoconch whorl, 11-15 on body whorl where they are set obliquely to the shell axis. Spiral lines much less prominent than axials; small nodules are formed on crossing of both lines; these nodules are often lighter in colour than the rest of the shell. Sutural canal rather narrow. Axial ribs form small pointed scales on shoulder. Aperture almost semicircular; outer lip thickened, with about 10 inner lirae. Umbilicus narrow but rather deep, half covered by parietal callus. Columella straight, often inclined off the shell axis to apertural side, with three strong folds.

Remarks. — This is an easily recognisable species, that could only be confused with *S. verreauxii* and *Cancellaphera amasia* Iredale, 1930; Cernohorsky (1972: 181) considers *C. amasia* as a synonym, but we cannot agree with this opinion (see under *S. verreauxii*). Main differences are: the brown colour of *S. verreauxii* and most specimens of *C. amasia*; and the sculpture, which in *S. obliquata* has the axials much stronger than the spirals, while in the other species axials and spirals are of almost the same strength.

*Cancellaria asperula* Deshayes, 1830 is considered a synonym by Petit (1980: 212).

**Scalptia bicolor** (Hinds, 1843)

(figs. 13-16)

*Cancellaria bicolor* Hinds, 1843: 48. Hinds, 1844: 43, pl. 12 figs. 13, 14.*Cancellaria (Trigonostoma) bicolor* — Melvill & Standen, 1901: 450. Schepman, 1911: 263.*Trigonaphera bicolor* — Habe, 1961b: 436, pl. 23 figs. 1, 2 and pl. 24 figs. 1, 2.*Trigonostoma bicolor* — Garrard, 1975: 21 figs. 3(10), 5(4).*Scalptia bicolor* — Petit, 1980: 214, fig. 4. Abbott & Dance, 1982: 229.

Type-specimens. — Four probable syntypes in BMNH, reg. nr. 1968413.

Type-locality. — Strait of Macassar, Indonesia and Isle of Corregidor, Philippines (Hinds). This last is the locality of the specimens in BMNH.

Distribution. — Japan (Habe, 1961b); Taiwan (AV); Philippines (BMNH); E, N and W coast of Australia (Garrard, 1975); Mekran Coast (Melvill & Standen, 1901); Kenya (AL); Mozambique (Petit, 1980).

Indonesian records. — Strait of Macassar (Hinds, 1843); Kai-islands: 1 spec. ZMA ("Siboga"-specimen); South-Moluccas: 2 specs. ZMA.

Description. — Shell with tabulate whorls, whitish to very pale tan-coloured. Dimensions up to 19.0 mm high and 13.4 mm wide.

Protoconch: 2 smooth, naticoid whorls, slightly deviated, suture deeply impressed. Maximum diameter 1.1 mm.

Teleoconch with up to 5 1/4 whorls. Sculpture consists of strong axial ribs, 8 on first teleconch whorl and on body-whorl, and a very faint spiral sculpture, only clearly visible on the axial ribs. The areas between the axials show a very diffuse pattern of growth-lines and spirals. Whorls tabulate, suture impressed, axial ribs crossing obliquely the almost horizontal ramp, which has for the rest only a fine growth-line sculpture. Aperture triangular, outer lip with about 12 lirae inside, parietal ridge with 2 or 3 closely-set teeth. Columella with 3 well-developed folds. Umbilicus very deep but rather narrow for its depth, axial ribs do not continue into it. Parietal callus reflected over the umbilicus, leaving visible most of it.

Remarks. — The Indonesian specimens studied have not the brown band which is so obvious in the type-specimens.

This species was not originally included in the genus *Scalptia*; it must be situated on the passage between *Scalptia* and *Trigonostoma*. *Cancellaria septemcostata* Odhner, 1917 and *Trigonaphera interlaevis* Laseron, 1955 are considered synonyms by Garrard (1975: 21) and by Petit (1980: 214).

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Figs. 19-20. *Scalptia crossei* (Semper, 1861). 19, Rembang (Java), 27.1 x 15.9 mm, RMNH. 20, Banka, 27.9 x 17.1 mm, RMNH.

Fig. 21. *Scalptia crenifera* (Sowerby, 1833), Bay of Pidjot (Lombok), 19.7 x 15.2 mm, RMNH.

Figs. 22-24. *Scalptia nassa* (Gmelin, 1791). 22, Moluccas, 17.8 x 13.2 mm, ZMA. 23-24, Moluccas, 18.8 x 13.9 mm, ZMA.

Figs. 25-26. *Scalptia textilis* (Kiener, 1841). 25, Moluccas, 26.2 x 15.8 mm, ZMA. 26, Moluccas, 25.3 x 14.8 mm, AV.

Fig. 27. *Trigonostoma scalare* (Gmelin, 1791), Moluccas, 31.8 x 26.7 mm, ZMA.



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**Scalptia contabulata** (Sowerby, 1833)

(fig. 12)

*Cancellaria contabulata* Sowerby, 1833: 4, fig. 28. Sowerby, 1849: 455 pl. 93 figs. 19, 23. Loebbecke, 1887: 8 pl. 1 figs. 9-10.

*Cancellaria pusilla* Sowerby, 1833: 6, fig. 34.

*Scalptia contabulata* — Petit, 1980: 213 fig. 3.

*Scalptia scalata* Sowerby - Cernohorsky, 1972: 181, pl. 50 fig. 5 (non *scalata* Sowerby). Sharabati, 1984: pl. 24 fig. 2 (Ibid.)

Type-specimens. — Lectotype, here selected: BMNH 1968402/1, 29.2 × 21.2 mm; three paralectotypes BMNH 1968402/2-4.

Type-locality. — Ceylon (Sowerby, 1833).

Distribution. — Japan, Philippines, Madagascar, Mozambique (Petit, 1980); Dar-es-Salaam (Spry, 1968); Zanzibar (BMNH); Red Sea (BMNH); Andaman Islands (ZSIC; AV); Fiji (Cernohorsky, 1972; AV); New Caledonia (Petit, 1980).

Indonesian records. — A single specimen from Madura RMNH.

Description. — Shell light brown; relatively short-spined, spire scalate. Dimensions: height 24.6 mm, width 16.3 mm.

Protoconch: 1 3/4 smooth naticoid whorls, gradually merging into teleoconch, maximum diameter 1.3 mm.

Teleoconch with 4 strongly shouldered whorls, with a broad flat sutural ramp, slightly sloping outwards. Axial sculpture: broad rounded ribs, not very prominent, about 19 on body whorl and 16 on penultimate whorl. Spiral sculpture consists of broad flat bands, 5 on penultimate whorl, with one of second order and two of third order between each set of higher-order bands. On the sutural ramp there is only a minor axial and spiral sculpture.

Aperture semicircular, truncated apically, with a parietal tooth. Aperture height 54 % of total shell height, while the body-whorl height amounts to 78 % of it. Outer lip with 17 inner lirae. Columella with two medium folds and a third, stronger fold, formed by the rim of the siphonal canal. Umbilicus very narrow, half covered by columellar callus.

Remarks. — Only one Indonesian specimen was studied (RMNH, colln. Jochim, 1914); but the occurrence of this species in Indonesian seas does not seem improbable, based on its known area.

As mentioned by Petit (1980: 214), this species is very close to *Scalptia scalata* (Sowerby); it has been synonymized with it by some authors, e.g. Tryon (1885: 81) and Cernohorsky (1972: 181). Petit gives, as distribution area of *S. contabulata*, essentially the same as given above, but restricts *S. scalata* to Mauritius. *S. contabulata* has the shoulder ramp flat and sloping outward, while in *S. scalata* this is a U-formed channel, as featured by its lectotype (BMNH 1968270/1, here selected).

**Scalptia crenifera** (Sowerby, 1833)

(fig. 21)

*Cancellaria crenifera* Sowerby, 1833: 5, fig. 29. Sowerby, 1849: 453, figs. 84-86. Reeve, 1856: species 24, pl. 6 figs. 24a-b. Tryon, 1885: 80, fig. 97. Loebbecke, 1887: 9, pl. 1 figs. 15-16, 13-14 (?).

*Trigonostoma (Scalptia) creniferum* — Oostingh, 1938: 107, pl. 6 figs. 111-115.

*Scalptia crenifera* — Habe, 1961a: 436 pl. 23 fig. 7, pl. 24 fig. 4. Kuroda, Habe & Oyama, 1971: 203, pl. 54 fig. 4.

*Scalptia creniferum* — Habe, 1961b: 73, pl. 36 fig. 5.

Type-specimen. — Three syntypes in BMNH, reg. nr. 1968423.

Type-locality. — Ceylon (Sowerby, 1833), but Kuroda *et al.* indicate Manila, Philippines.

Distribution. — Japan (Habe, 1961 a, b); Taiwan (AV); Philippines (BMNH); W-Thailand (Tantanasiriwong, 1978); Madras, India (AV); Gulf of Oman (Melvill & Standen, 1901).

Indonesian records. — Moluccas: 4 spec. ZMA; Bay of Pidiot, Lombok: 1 spec. RMNH; Billiton: 1 spec. ZMA; Klabat Bay, Bangka: 1 spec. ZMA.

Description. — Shell rounded, spire relatively short. Dimensions: up to 21.2 mm high and 16.3 mm wide. Colour white to brownish, sometimes with a paler band near periphery.

Protoconch: 2 smooth, naticoid whorls; largest diameter 1.0 mm.

Teleoconch with up to 4 1/2 slightly rounded whorls; about 10 axial ribs on first teleoconch whorl and also on body-whorl. Spiral sculpture is very faint between the axials, but becomes more pronounced when crossing them; there are 6-9 spirals on the penultimate whorl. Sutural canal forming a concave ramp. The axial ribs, when crossing the shoulder of the whorl, form pointed coronations, generally inflected backwards; they obliquely cross the sutural ramp, forming sharp lamellae. Aperture rounded trigonal, outer lip with 10-14 inner lirae. Parietal tooth present. Columella with three sharp folds, the uppermost is the strongest. Umbilicus wide and deep, parietal callus partly reflected over it. Axial ribs are almost invisible inside the umbilicus.

Remarks. — This species is, in general outline, generally less rounded than *S. obliquata*, its umbilicus is clearly wider, the sutural ramp is broader, and there are less axial ribs on the body-whorl.

*S. crenifera* appears to be rather variable in slenderness. The type-specimens (BMNH) are more slender than the specimens from Indonesia. Also the size of the umbilicus can differ, especially between juvenile and adult specimens (cfr. Oostingh 1938: 107).

### **Scalptia crossi** (Semper, 1861)

(figs. 19-20)

*Cancellaria serrata* Reeve, 1856: species 63, pl. 14 figs. 63a-b.

*Cancellaria crossi* Semper, 1861: 257 (nom. nov. for *C. serrata* Reeve, non *C. serrata* Bronn, 1831).

*Cancellaria (Trigonostoma) crenifera* Sowerby var. *serrata* — Melvill & Standen, 1901: 451.

*Scalptia crossi* — Petit, 1980: 212, fig. 2. Abbott & Dance, 1982: 229 unnumbered fig.

*Trigonostoma scalarina* — Garrard, 1975: 29, fig. 3(14) (non *C. scalarina* Lamarck).

Type-specimens. — Two syntypes of *C. serrata* Reeve: BMNH 1968407.

Type-locality. — Unknown to Reeve.

Distribution. — N.E. South Africa to Philippines (Petit, 1980); N. and E. Australia (Garrard, 1975, for *T. scalarina*).

Indonesian records. — Boesak, Celebes: 1 spec.; Passoeroean, Java: 1 spec.; Rembang, Java: 1 spec.; Banka: 1 spec.; Padang, Sumatra: 1 spec.; Flores: 1 spec. (all RMNH); Madura: 7 specs. RMNH, 2 specs. MZBo; Ujung Kulom, Sunda Strait; 2 specs. ZMA; Ambon: 7 specs. MSS; Djoemiang, Tjerek (Madura): 5 specs. MZBo; Java: 1 spec. NMB; Moluccas: 1 spec. KBIN.

Description. — Shell rather fusiform, up to 28.0 mm high and 17.6 mm wide. Colour pale brownish, with a white band near suture and continuing at periphery of body-whorl; this band is also visible inside the aperture.

Protoconch with 2 - 2 1/2 almost white, smooth naticoid whorls. Maximum diameter 1.0 - 1.2 mm.

Teloconch with up to 5 3/4 whorls. Spire turreted. Teloconch sculpture starts abruptly with axial ribs. Suture depressed, forming a broad, slightly excavated sutural ramp. Sculpture consists of 9 - 10 strong, sharp, somewhat curved axial ribs, that form scaly protrusions on shoulder of whorls, and obliquely cross over the sutural ramp. Spiral sculpture of primary and secondary spirals: about 8 primaries on penultimate whorl, one secondary spiral may occur between each set of primaries. When crossing over the axial ribs, the spirals form small pointed nodules, giving the shell a prickly touch.

Aperture white, rounded triangular. Outer lip flared out, with 9-11 inner lirae. Parietal tooth present. Columella with three oblique folds: the uppermost is the strongest, the lower fold forms the rim of a small siphonal canal. Umbilicus narrow but rather deep, columellar callus partly reflected over it.

Remarks. — Most Indonesian specimens of this species have the umbilicus somewhat smaller than the type-lot; they are also more slender.

This taxon, which appears to be quite common in at least some parts of its large distribution area, has hardly been referred to under the name *S. crossei*. It has been confused with the rather enigmatic *Cancellaria scalarina* Lamarck, 1822, and the assumedly related *C. thomasiana* Crosse, 1861. Lamarck described his *S. scalarina* without a figure; in spite of Kiener's (1841: pl. 5 fig. 3) correct figure of Lamarck's type, Sowerby (1849: pl. 46 figs. 87-88) and Reeve (1856: pl. 6 figs. 25a-b) figured shells quite different from Lamarck's. This induced Crosse (1861: 231) to rename the Sowerby and Reeve figures into *C. thomasiana*. Although Lamarck (1822b: 113) stated that *S. scalarina* "n'a rien de rude au toucher", Sowerby (1849: 452) mentioned crenulated ribs, that are "produced at the angle of the whorls into a double angle". Petit (1984: 60) suggests, possibly correctly, that Lamarck's type (MHNG 1097/85) might be a gerontic shell. Some authors, e.g. Loebbecke (1887: 10) and Garrard (1975: 29) consider *C. thomasiana* a synonym of *C. scalarina*.

*S. crossei* is a very variable species, not only in its extensive area, but even within Indonesian seas. It is possible that, when large series of specimens become available for study, the slender and prickly specimens here identified as *S. crossei* might be linked in a continuous line to the smooth, widely umbilicated, heavy-walled and more rounded *S. scalarina*, passing through forms like *S. thomasiana*. If so, the name

Figs. 28-35. *Scalptia scalariformis* (Lamarck, 1822). 28-29, Toelanggoe (Madura), 18.9 x 11.0 mm, RMNH. 30, Bay of Batavia, 27.0 x 15.8 mm, RMNH. 31-32, Belawan (Sumatra), 15.6 x 9.9 mm, RMNH. 33, Djoemiang Tjerek (Madura), 21.6 x 12.3 mm, MZBo Gst 2400. 34, NW. Java, 21.9 x 18.2 mm, RMNH. 35, Roentgenphotograph of lectotype (MHNG 1097/1, 22.7 x 14.7 mm), showing the two columellar folds; photograph: Dr C. Vaucher, MHNG.

Fig. 36. *Sydaphera spengleriana* (Deshayes, 1830), "Indonesia", 28.5 x 19.0 mm, ZMA.





28



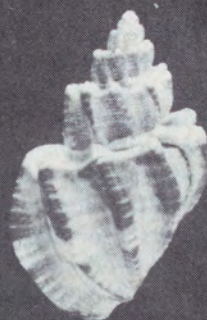
29



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*S. scalarina* would evidently take priority. But, as long as this has not definitely been established, it seems preferable to keep this question open and use the name *S. crossei* for the species under study.

Differences with related species are pointed out when discussing *S. scalariformis*.

**Scalptia nassa** (Gmelin, 1791)

(figs. 22-24)

*Voluta nassa* Gmelin, 1791: 3464.

*Cancellaria nassa* Roissy - Deshayes, 1843: 410.

*Cancellaria lamellosa* Hinds, 1843: 49. Hinds, 1844: 43, pl. 12 figs. 15-16.

*Cancellaria (Trigonostoma) lamellosa* — Melvill & Standen, 1901: 451. Schepman, 1911: 264.

*Scalptia nassa* — Petit, 1984: 59.

Type-specimen. — Lectotype, selected by Petit (1984: 59): the specimen represented by Seba's (1758) pl. 53 fig. 42 (right-hand figure 42!).

Seven syntypes of *S. lamellosa* are in BMNH, reg. nrs. 1968414-15.

Type-locality. — No valid type-locality was given by Gmelin (see discussion by Petit, 1984: 60). The Island of Corregidor, Manila Bay, Philippines was designated type-locality of *S. lamellosa* by Petit (1984).

Distribution. — South Africa? (Barnard, 1959; but according to Petit (1980: 212) this is *S. crossei*); Persian Gulf and Gulf of Oman (Melvill & Standen, 1901); Dar es Salaam (Spry, 1968); Mannar, Ceylon (BMNH); Philippines (NMB); Ping Chau Island, China (Garrard, 1975); Australia? (Garrard, 1975; but according to Petit (1984: 60) the shell illustrated may represent another taxon).

Indonesian records. — Strait of Macassar (Hinds, 1843); Djangkar, Java and Bay of Pidjot, Lombok (Schepman, 1911; both specs. now in ZMA); Moluccas: 8 specs. ZMA, 1 spec. NMR, 1 spec. AV; Soerabaja, Java: 1 spec. RMNH.

Description. — Shell very much like Indonesian *S. crenifera*'s. Most specimens are almost completely white, with a brown band or area of variable intensity on the upper part of the body-whorl. Dimensions: up to 18.5 mm high and 14.2 mm wide.

Protoconch: 1 1/2 to 2 smooth, naticoid whorls; maximum diameter 1.0 mm.

Teloconch with up to 4 3/4 whorls. Axial ribs on first teloconch whorl and on body-whorl 10-12 in number, they form pointed scaly coronations on shoulder of whorls. These ribs consist of a number of close-set lamellae; their number per axial rib generally increases with the number of whorls (up to 10 lamellae on a rib 2 mm wide). The spiral sculpture is only clearly visible near the axial ribs, to which it confers a crenulate aspect, and often gives the shell a prickly touch. Aperture as in *S. crenifera*; number of inner lirae on outer lip 8-10. Umbilicus somewhat wider than in Indonesian *S. crenifera*; also, the axial ribs, when passing into the umbilicus, remain much better marked than in that species. Columellar folds as in *S. crenifera*.

Remarks. — Relations between *S. nassa* and *S. crenifera* shell form are mentioned under Description.

The specific name *nassa* Gmelin was revived only recently (Petit, 1984), after being out of use for some 1.5 century, probably because of the great confusion about its real identity. The name was generally assigned to Roissy; the contradictory references induced already Brocchi (1814: 312) to write: "Qual è dunque la vera *nassa*?". This problem is extensively discussed by Petit (1984: 59).

**Scalptia scalariformis** (Lamarck, 1822) (figs. 28-35)

*Cancellaria scalariformis* Lamarck, 1822b: 113 nr. 4. Kiener, 1841: 12, pl. 5 fig. 4. Chénu, 1859: 274 fig. 1811.

*Cancellaria costifera* Sowerby, 1832: 5 nr. 58, fig. 31. 1849: 456, pl. 45 figs. 65, 66, 71. Reeve, 1856: pl. 12 figs 57a-b.

*Trigonostoma scalariformis* — Cernohorsky, 1972: 180, pl. 50 fig. 2 (excl. fig. 2a). Garrard, 1975: 27, figs. 4(3)-(4). Way & Purchon, 1981: 320.

Type-specimens. — Lectotype, here selected: MHNG 1097/86/1, 22.7 × 14.7 mm; paralectotype: MHNG 1097/86/2.

Type-locality. — unknown to Lamarck; Kiener gives "la mer des Indes" for *C. costifera*. The types are labeled "Amérique", this has obviously been added afterwards and must be disregarded.

Distribution. — China Sea (Loebbecke, 1887); Philippines (MNHN); N. E. Australia (Garrard, 1975); W. Malaysia (Way & Purchon, 1981); India: Madras, Cochin, Bombay (BMNH); "westward from the western Pacific" (Cernohorsky, 1972).

Indonesian records. — Pegatan, S.E. Borneo: 1 spec. ZMA; Poelau Habu (near New Guinea): 1 spec. ZMA; Kapoeran, Java: 1 spec. RMNH; N.W. Java: 1 spec. RMNH; Talangoe, Madura: 3 specs. RMNH, Djoemiang, Tjerek, Madura: 4 specs. MZBo; Pasar Ikan, Bay of Batavia: 2 specs. RMNH; Belawan, Sumatra: 3 specs. RMNH.

Description. — Shell heavy-walled, up to 27 mm high and 15.8 mm wide.

Protoconch with 1 3/4 to 2 1/4 rounded naticoid whorls, pale brown, slightly oblique to teleoconch axis; maximum diameter 0.7-1.0 mm.

Teleoconch with up to 5 3/4 whorls. Suture impressed, forming a broad flat sutural area. Axial sculpture consists of rounded ribs, about 1 mm wide. Number of ribs on first to fourth teleoconch whorl respectively: 10-13, 10-11, 9-10, 7-10. The axial ribs obliquely cross over the flat sutural ramp which is, for the rest, without prominent sculpture: only very weak spirals or growth-lines may be present. Abapical sides of the whorls slightly convex. Spiral sculpture of this part consists of faintly indicated, rather broad spiral bands, separated by narrower interspaces. There are 10-13 of these spirals on the abapical part of the penultimate whorl.

Aperture rounded triangular, square-cut at the adapical side; one strong parietal tooth. Columella vertical, with two strong folds and a thin, lamellous fold at the edge of the faintly indicated siphonal canal. White parietal callus covering most of the umbilicus, leaving only a slit in most specimens. Outer lip with 10 lirations inside. Colour purplish-brown, but white at the sutural ramp and the umbilicus. A narrow white band can be seen just above the suture, continuing near periphery of last whorl. On the axial ribs, white spiral lines occur, their number is five on the penultimate whorl; they continue, but much more confusely, in the broad flat areas between the ribs.

Remarks. — There has always been a great confusion about this species: cfr. Tryon, 1885: 80; Cernohorsky, 1972: 180. This confusion is already illustrated by a label accompanying the types, stating "*C. scalariformis* Lamarck non Kiener"; whilst MNHN has a specimen, labeled by Kiener as a syntype, referred to as "*C. scalariformis* Lamarck in Kiener, 1841" on the filing-card.

Lamarck gave a description but no figure; he stated that the species has only one columellar fold. Chénu (1859: 274 fig. 1811) is the only author giving a correct figure of a type. Kiener (1841) figured a specimen with three folds; in a note following the description he stated: "L'individu qui a servi de type à Lamarck était fruste et avait la columelle usée, puisqu'il n'y restait plus qu'un seul pli apparent". Garrard (1975: 28) states "...an enlarged colour photo of the holotype showing the specimen obviously to have been occupied by a hermit crab, resulting in the wearing away of the lower end of the columella and two plaits; the remaining plait is the one bordering the siphonal canal". This remark agrees with a few specimens of Indo-Pacific *Cancellariidae* seen by the present writer, which had a similar columella-form; in some of them even part of the lower wall of the penultimate whorl, inside the shell, had been removed by an unknown factor, possibly a hermit crab, leaving a polished cut and a concavely curved columellar side of the aperture (cfr. fig. 35). Similar action, ascribed to *Pagurus*, was already mentioned by Woodward (1870: 37). The two syntypes are in good condition externally, but the most ventricose specimen indeed lacks the columella within the last teleoconch whorl. This is confirmed by Roentgen-photographs of the type-specimens (e.g. fig. 35), which show also that the more slender syntype (here selected lectotype) has two folds on the columella corresponding with the respective teleoconch whorls, except the last one. Moreover, Roentgen-photos of two more specimens of *S. scalariformis* (MNHN, under the name *C. costifera*), one of which has a columella like the syntype's, both show an intact columella within the earlier whorls.

This suggests that *S. scalariformis* has two folds on the columella, which are visible in the aperture when the specimen is not fully grown. When the last part of the body-whorl of a mature specimen is formed, the columellar folds apparently do not develop any further and, consequently, cannot be seen in apertural view. Thus, it appears that such specimens are gerontic forms. A similar case was reported for fossil *Cancellariidae* from California (Addicott, 1970: 116). The third columellar fold is in fact only the edge of the faint siphonal canal; this is the single fold visible in gerontic, or remaining in mutilated specimens.

It is unfortunate that the two types of *S. scalariformis* are mutilated and/or gerontic shells. The MNHN specimen, indicated as type by Kiener, cannot be a type. This is evidenced by notes in Lamarck's personal copy of his "Animaux sans Vertèbres" (kept in MHNG) in the hand of his daughter Rosalie, mentioning for each species the number of specimens in Lamarck's collection. Hence we know he had two specimens, evidently those now in MHNG.

Special thanks are due to Dr Vaucher (MHNG) who made available the RX-photos of the syntypes, and gave the information on Lamarck's copy of "Animaux sans Vertèbres"; and to D. Serrette (Institut de Paléontologie, MNHN) for the RX-photos of the *costifera*-specimens in MNHN.

Already Kiener recognised *C. costifera* Sowerby as a synonym of *C. scalariformis*. Worn specimens have the axial ribs almost white (cfr. figs. 28-29), thus conforming Sowerby's figures (1832: fig. 31; 1849: pl. 95 fig. 65). The syntypes of *C. mangelioides* Reeve, 1856 (BMNH 198421), from unknown locality, might be slender beach-specimens of *S. scalariformis*.

*Cancellaria bocageana* Crosse & Debeaux, 1863, after its figured syntype (MNHN, unnumbered specimen in type-collection of Journal de Conchyliologie) from Ta-Kou, N. China, is a still more slender form of *C. mangelioides*.

*S. scalariformis* is distinguished from *S. crossei* in being much smoother (no sharp, pointed axial ribs), not having the lamellous coronations on the shoulders, having the sutural ramp flatter, and having the columella more vertical, because of its much more closed umbilicus.

***Scalptia textilis* (Kiener, 1841)**

(figs. 25-26)

*Cancellaria textilis* Kiener, 1841: 10, pl. 7 fig. 1. Sowerby, 1849: 455, pl. 93 fig. 34. Reeve, 1856: species 28, pl. 6 figs. 28a-b. Tryon, 1885: 81, pl. 6 fig. 3. Loebbecke, 1887: 34, pl. 10 figs. 5-8.

*Cancellaria (Trigonostoma) textilis* — Schepman, 1911: 265.

*Cancellaria (Scalptia) textilis* — Kira, 1963: 110, pl. 90 fig. 14.

*Scalptia textile* — Habe, 1961b: pl. 24 fig. 19.

*Trigonostoma textilis* — Garrard, 1975: 31, fig. 3(1).

*Scalptia textilis* — Abbott & Dance, 1982: 229.

Type-specimen. — The lectotype, here selected, is in MNHN, no registration number. Dimensions: height 26.6 mm, width 15.5 mm.

Type-locality. — "Les mers des Moluques" (Kiener).

Distribution. — Mauritius (MHNG; HUI); Madagascar (RMNH); Philippines (Habe, 1961b; BMNH; NMB) to Japan (Garrard, 1975); W. Australia, Guadalcanal (Garrard, 1975).

Indonesian records. — Moluccas: 2 specs. MHNG, 1 spec. NMR, 7 specs. ZMA, 1 spec. AV; Bay of Ambon: 1 spec. RMNH; Ambon: 1 spec. RMNH; Flores: 1 spec. HLMD.

Description. — Colour reddish to purplish brown, with white spots on the nodules, especially those on the shoulder of the last whorls. Dimensions: up to a height of 36.0 mm and a width of 20.8 mm.

Protoconch: 1 1/2 to 2 1/2 smooth, naticoid whorls, passing gradually into the teleoconch whorls. Maximum diameter 1.0-1.2 mm.

Teleoconch with up to 6 1/4 whorls, canaliculately shouldered. Sculpture: conspicuous rounded axial ribs, crossed by faint spiral striae; nodules are formed on the crossings of axials and spirals. Number of axials: 10-13 on body-whorl; 12-15 on penultimate whorl. About five main spirals on penultimate whorl; 9-11 on body-whorl. Secondary spirals are very fine, as are the growth-lines between the axials. Suture deeply impressed, with an almost horizontal ramp which becomes more canaliculate with age. The axials form elevated nodules at the shoulder.

Aperture height about 45 % of total shell height; outer lip with sharp edge, 16-18 lirae inside. Columella straight, with three strong oblique folds, the lowest one bordering a small siphonal canal. Umbilicus open, narrow but deep, partly covered by columellar callus.

Remarks. — This is one of the more fusiform species of the genus *Scalptia*. It is allied to *S. scalata* (Sowerby, 1833); some authors (e.g. Tryon, 1885: 81; Cernohorsky, 1972: 181) consider it a possible dark coloured variant of this last taxon. Differences are: the more fusiform outline and the more open umbilicus of *S. textilis*; the white aperture of *S. scalata* with apparently four columellar folds (Sowerby, 1832: 4; Loebbecke, 1887: 73), not as strong as in *S. textilis*. Although Sowerby indicates "East Indies" as type-locality of *S. scalata*, this species apparently does not occur in Indonesian or adjacent seas; according to Petit (1980: 214) it seems to be restricted

to Mauritius. It is noteworthy that *S. textilis* ranges to the western Indian Ocean, as evidenced by specimens from Mauritius and Madagascar. This last shell (RMNH) has the unusual dimensions of 48.9 mm height and 21.0 mm width.

**Scalptia verreauxii** (Kiener, 1841)

(fig. 18)

- Cancellaria verreauxii* Kiener, 1841: 17, pl. 8 fig. 3. Sowerby, 1849: 450 pl. 93 fig. 28. Reeve, 1856: species 59, pl. 13 figs. 59a-b. Tryon, 1885: 82, pl. 7 figs. 15, 17.  
*Cancellaria verreauxi* — Loebbecke, 1887: 69, pl. 18 figs. 7, 8.  
*Cancellaria (Trigonostoma) verreauxi* — Schepman, 1911: 265.  
*Scalptia verreauxi* — Habe & Kosuge, 1965: 88, pl. 35 fig. 8.

Type-specimen. — The species was described on specimen(s) in Verreaux' collection; this material has not yet been located.

Type-locality. — Unknown to Kiener.

Distribution. — Hong Kong (NMW); "Oceania" (MNHN); "Tropical Pacific" (Habe & Kosuge, 1965).

Indonesian records. — Macassar: 1 spec. ZMA; Moluccas: 3 specs. ZMA, 1 spec. AV; Ternate, Moluccas: 1 spec. NMW; Hollandia, N. Guinea: 1 spec. PVP.

Description. — Shell reddish brown, globosely turreted; up to 22.8 mm high and 16.0 mm wide.

Protoconch: 2 1/4 - 2 1/2 smooth, naticoid whorls; maximum diameter 1.0-1.2 mm.

Teleoconch with 4 - 4 1/2 whorls; its sculpture starts immediately with 3 - 4 strong spirals, the uppermost is placed at the shoulder of the whorl, delineating a narrow, almost flat ramp. Axial sculpture consists of 12 - 20 rather confuse ribs, becoming more confuse on younger whorls. There are 8 main spirals on body-whorl; spirals of second and third order are interposed, one between each set of higher order spirals.

Aperture semicircular; aperture height is 55 % of total shell height. Inside of outer lip with 13 - 18 lirae. Columella with three sharp folds; the first and third are parallel to each other, the middle fold is more inclined. The lowest fold borders a small siphonal canal. Umbilicus deep but rather narrow, partly covered by the thin parietal callus.

Remarks. — General outline much like *S. obliquata* (q.v.), but still more resembling *Cancellaphera amasia* Iredale, 1930. *C. amasia* is a species common off Queensland (Garrard, 1975: 19, who cites 216 specs. in Australian museums), of which also a few specimens have been reported from West-Australia, but no records of which are known from Northern Australia. Its sculpture is like *S. verreauxii*'s, but stronger, with sharper ribs; possibly *C. amasia* is only a geographic form of *S. verreauxii*.

*Scalptia littoriniformis* (Sowerby, 1833) is also somewhat similar to *S. verreauxii*. Its lectotype (BMNH 1968385/1, here selected), from Ceylon, is more finely sculptured and has the whorls more rounded, almost completely without shoulder ramp.

Also *Cancellaria coctilis* Reeve, 1856, a species almost neglected in the literature, is very near to *S. verreauxii*, as can be judged from its syntypes (BMNH 1968411, from unknown locality), although these are badly worn.

Genus *Sydaphera* Iredale, 1929

Iredale, 1929: 341. Wenz, 1943: 1367. Laseron, 1955: 267. Garrard, 1975: 8.

Type-species. — (monotypy): *Sydaphera renovata* Iredale, 1929, which is considered a synonym of *Cancellaria undulata* Sowerby, 1848 by Garrard (1975: 8).

Distribution. — Central Indo-Pacific, from Japan to Australia.

Remarks. — This generic name was introduced while differentiating "*renovata* sp. n." from *C. undulata*, for specimens from Sydney Harbour; Iredale did not describe the genus. Laseron (1955: 267) gives as characters differentiating the imperforate *Sydaphera* from the "European *Cancellaria*" that this last is narrowly umbilicate (thus obviously suggesting that *Sydaphera* has no umbilicus) and has a much stronger spiral sculpture, producing a cancellate sculpture. The value of this generic name may be questionable; it is used here until a good revision of Cancellariid genera becomes available.

***Sydaphera spengleriana* (Deshayes, 1830)** (fig. 36)

? *Buccinella quadrata* Perry, 1811: pl. 27 fig. 3 (probably figuring an eroded specimen).

*Cancellaria spengleriana* Deshayes, 1830: 185. Tryon, 1885: 67, pl. 1 figs. 2-3. Abbott & Dance, 1982: 226.

*Cancellaria tritonis* Sowerby, 1833: 2 fig. 15.

*Sydaphera spengleriana* — Habe, 1961b: 434, pl. 24 fig. 24. Kuroda, Habe & Oyama, 1971: 202, pl. 54 fig. 5.

Type-specimen. — Holotype is in MNHN, no registration number. Dimensions: height 42.5 mm, width 25.2 mm.

Type-locality. — Unknown to Deshayes; also unknown to Sowerby for *C. tritonis*. Kuroda et al. (1971) indicate Philippines as type-locality.

Distribution. — Japan (Habe, 1961b); Taiwan (AV); Cochinchina, Vietnam (NMW); Philippines (NMB); China (MZBa); S. Korea (RMNH); Caroline-islands (RMNH); Hong-Kong (BMNH); S. Malaysia (NMW).

Indonesian-records. — Only one worn specimen, labeled "Indonesia" ZMA.

Description. — Shell short-spined, dimensions 28.5 mm high, 19.0 mm wide.

Specimen strongly eroded, no protoconch left. Teleoconch with about five whorls. Whorls rounded, slightly shouldered, shoulder indicated by white nodules on axial ribs. Body-whorl with 13 axial ribs; 18 on penultimate whorl. Spiral sculpture consists of 12 fine grooves on penultimate whorl; 30 on body-whorl. Height of aperture is 64 % of total shell height; aperture inflated, outer lip with 16 strong lirae inside. Columella straight, vertical, with two folds, the uppermost is the strongest. No trace of an umbilicus.

Colour pale-brownish-gray, with a whitish spiral band near the periphery of the body-whorl, and a whitish spiral connecting the nodules on the shoulder.

Remarks. — The single specimen studied here seems to be the first from a locality south of the line Philippines - south Malaysia. This does not constitute sufficient evidence for definitely establishing the occurrence of this species in Indonesia, especially as there are no precise data on locality or collector. On the other hand, confusion with *S. undulata* (Sowerby, 1848) is not impossible on this worn specimen.

*S. undulata* is a very variable species occurring off all Australia south of 25°S (Garrard, 1975: 9, who cites also two unchecked records from New Caledonia). *S. spengleriana* normally has the axial ribs much stronger, and the shoulder nodules much more developed (sometimes forming small spines) than in *S. undulata*. Cernohorsky (1972: pl. 50 fig. 4) figures a specimen from Port Moresby (Papua New Guinea) that he refers to as *C. spengleriana*, but that looks more like a typical *S. undulata*, as figured by Garrard (1975: fig. 1(6)-(7)). Cernohorsky considers these two taxa to be synonyms, and he may be right. Although the extreme forms of both are quite different, e.g. the rounded form of *S. undulata* and the giant form (up to 75 mm) of *S. spengleriana*, named *C. tritonis* by Sowerby, some specimens seem to be transitional forms between typical *S. undulata* and *S. spengleriana*. Only when more specimens from Indonesia become available for study, it will be possible to have a better understanding of these two taxa. Until then, the senior name is used here.

A specimen of this species, then in the Spengler collection, with locality "China Seas", was already figured by Chemnitz (1795: pl. 179 figs. 1727-28) under the non-binominal name "voluta cancellata, elongata, ...". This, however, has nothing to do with *Cancellaria cancellata* var. *elongata* Pallary (?), as published by Kobelt (1904: 210).

Perry (1811: pl. 27 fig. 3), in his well-known peculiar style (cfr. Dance, 1966: 120-121), figured a shell that is probably an eroded specimen of *S. spengleriana*. If this can be confirmed, the name *S. quadrata* (Perry, 1811) would have priority. However, because of the quality of the figure it seems preferable to postpone this decision until Perry's specimen can be found.

The soft parts of the animal were described by A. Adams (1864: 143).

### Genus *Trigonostoma* Blainville, 1827

Blainville, 1827: 652. Cossmann, 1899: 24. Iredale, 1925: 263. Korobkov, 1955: 325. Wenz, 1943: 1358.

*Trigona* Perry, 1811 (non *Trigona* Jurine, 1807)

Type-species. — (monotypy): *Delphinula trigonostoma* Lamarck, 1822 (= *Buccinum scalare* Gmelin, 1791; = *Trigona pellucida* Perry, 1811).

The type-designation by Lesson (1842: 203) of *Cancellaria tuberculosa* Sowerby, 1833 as the type-species of the "groupe des Cancellaires à bouche triangulaire" is not valid.

Distribution. — Indo-Pacific, Central West America.

Characters. — Whorls with triangular cross-section; a broad, almost flat, sutural ramp; sharply angled at shoulder, constricted at suture. Aperture roughly triangular; umbilicus widely open, up to the top of the shell. Siphonal fasciole in the form of a carina at the edge of the umbilicus.

Remarks. — The name was proposed in the "Nouvelles Additions et Corrections..." in the second edition of Blainville's work (cfr. Iredale, 1925: 263). *Arizelostoma* Iredale, 1936 is considered a synonym by Garrard (1975: 19); others (e.g. Wenz, 1943: 1358) synonymize *Trigonaphera* Iredale, 1936 with *Trigonostoma*; however, *Trigonaphera* differs from that last genus in having a minute umbilicus.



**Trigonostoma scalare** (Gmelin, 1791)

(fig. 27)

*Buccinum scalare* Gmelin, 1791: 3495*dauphinule trigonostome* — Lamarck, 1804: 109 (vernacular name)*Trigona pellucida* Perry, 1811: without pagination, pl. 51 figs. 1-2.*Delphinula trigonostoma* Lamarck, 1822a: 231*Cancellaria trigonostoma* — Deshayes, 1830: 180; 1843: 409. Sowerby, 1833: 7, fig. 44; 1849: 457, pl. 94 figs. 45-46. Kiener, 1841: 41, pl. 1 fig. 1. Reeve, 1856: nr. 51, pl. 11 figs. 51a-b. Loebbecke, 1887: 50, pl. 15 figs. 1-2.*Trigonostoma trigonostoma* — Chénu, 1859: 276 fig. 1828. Tryon, 1885: 78, pl. 5 fig. 79. Habe & Kosuge, 1965: 88, pl. 35 fig. 7. Marcy & Bot, 1969: 220, pl. 69 fig. R. Kirtisinghe, 1978: 79, pl. 44.*Trigonostoma pellucida* — Petit, 1967: 217. Abbott & Dance, 1982: 229, unnumbered fig.*Trigonostoma antiquata* — Garrard, 1975: 20, fig. 3(16) (non *T. antiquata* (Hinds))*Trigonostoma scalare* — Petit, 1984: 58.

Type-specimen. — Lectotype (selected by Petit, 1984: 58): the specimen represented by Meuschen's fig. B (1767), whereabouts unknown.

Type-locality. — Petit (1984: 58), referring to Sowerby (1833: 7), considers Ceylon to be the type-locality. However, since the lectotype is one of the five specimens from a cabinet in Batavia (Spengler *in* Chemnitz, 1780: 28), it might in fact originate from Indonesia.

Distribution. — Philippines (MNHN; KBIN); Ceylon (Burch, 1949: 3; BMNH; MHNG); Australia (Garrard, 1975).

Indonesian records. — Moluccas: a single specimen ZMA, ex. coll. G. de Serrière (1788-1868).

Description. — Shell turreted, spire extremely scalate. Colour whitish, with a very pale purplish-blue hue. Dimensions: height 31.8 mm, width 26.7 mm.

Protoconch of the single specimen available is too corroded to study its characters.

Teleoconch whorls 5 1/4, with a triangular cross-section. Suture deeply impressed; area between suture and shoulder of the younger whorl is slightly convex, and somewhat sloping outward. Sculpture: 13 faint axial ribs, indicated by axial rows of seven nodules, arranged on seven spiral striae on abapical side of the whorl. These ribs continue, still more diffuse, on the shoulder ramp, which shows also fine growth-lines and seven very diffuse spirals.

Aperture almost perfectly triangular; columellar side with two diffuse folds, and one slightly indicated fold at the edge of the small siphonal canal. Umbilicus widely open to the very top of the shell.

Remarks. — This species has a very characteristic shape and can, only in its juvenile form, merely be confused with *T. antiquata* (Hinds, 1843). Garrard (1975: fig. 3(16)) figured *T. scalare* under that name, but later (1983: 6) he changed his opinion and considered *T. antiquata* a synonym of "*Trigonostoma trigonostoma* Linnaeus, 1758". The main differences are: *T. antiquata* has sharp lamellous axial ribs, ending in long sharp points projecting above the shoulder; these ribs are already clearly visible on the early teleoconch whorls. Number of axials: 9 - 10 for *T. antiquata*, 13 for *T. scalare*. The acute angle between shell axis and the columellar side of the aperture is larger in *T. antiquata* than in *T. scalare*. The same applies to the angle between the shoulder ramp and the abapical side of the older whorl. There are 7 broad, diffuse spirals on the abapical side of the whorl in *T. scalare*, while *T. antiquata* has very narrow spirals: 5 primaries, 1 of the second order and 2 - 3 of the

third order on the lectotype. The general outline of *T. antiquata* is more compressed axially than in *T. scalare*. Both species have been figured correctly by Abbot & Dance (1982: 229, unnumbered figs.).

Although only a single specimen from Indonesia is available, the occurrence of this species in that area can safely be accepted, as it is in accordance with recorded specimens from Australia and the Philippines. Moreover, the first specimens of this species known in the 18th and start of the 19th century seem to have come from "Dutch East India" (Spengler in Chemnitz, 1780: 28. Crosse, 1861: 230. Kobelt, 1878: 102. Loebbecke, 1887: 50). The species was then known all over Europe under the Dutch vernacular name "Bordestrap".

This species has generally been known under the name *Trigonostoma trigonostoma* (Lamarck), the holotype of which is in MHNG, and has been described and figured by Mermod & Binder (1963: 170, fig. 234). Petit (1967: 217) reintroduced the name *T. pellucida* (Perry); and recently (1984: 58) he revived the name *T. scalare* (Gmelin), which, as the oldest available name, must be used.

### *Trigonostoma antiquata* (Hinds, 1843)

*Cancellaria antiquata* Hinds, 1843: 49; 1844: 43, pl. 12 figs. 17-18. Sowerby, 1849: 458, pl. 93 fig. 27. Reeve, 1856: species 74, pl. 16 figs. 74a-b. Loebbecke, 1887: 57, pl. 16 figs. 9-10.

*Cancellaria (Trigonostoma) antiquata* — Schepman, 1911: 264.

*Trigonostoma antiquata* — Habe, 1961b: 435, pl. 23 fig. 8, pl. 24 fig. 14. Lan, 1979: 97, pl. 41 figs. 93-93a (possibly figuring *T. scalare*). Abbott & Dance, 1982: 229, unnumbered fig.

Type-specimen. — Lectotype, here selected: BMNH 1968416/1, 15.0 x 11.4 mm; two paralectotypes BMNH 1968416/2-3; all from the Isle of Corregidor, Cuming colln.

Type-locality. — Isle of Corregidor (ICZN 74 a iii)

Distribution. — Japan (Habe, 1961a,b); Taiwan (Lan, 1979); Philippines (Hinds, 1843); New Guinea (id.); Coromandel coast, India (ZSIC); Mussandam, Strait of Hormuz (RMNH); Gulf of Oman (BMNH).

Indonesian records. — Madura Strait: 1 juvenile spec. ("Siboga") ZMA; also "New Guinea": 1 spec. MHNG, 1 spec. MNHN, but this locality may have been copied from Tryon (1885: 79).

Description. — The ZMA specimen is very juvenile, globose in general outline. The specimen is dead and rather corroded. Dimensions: height 4.5 mm, width 4 mm.

Protoconch: 2 smooth, naticoid whorls, maximum diameter 1.1 mm.

Teloconch consists of only 2 1/4 rounded whorls; suture deeply impressed; sutural canal wide. Axial sculpture of narrow ribs: 9 on first, 11 on second teloconch whorl, crossing over the sutural canal, forming pointed scales on the shoulder. The spiral sculpture starts only on the second whorl, and consists of four very faint spirals. Aperture rounded triangular; no parietal tooth and no lirae inside outer lip. Columella with three folds, the uppermost is the strongest. Umbilicus very wide and deep, up to the first whorl.

Remarks. — Differentiation of this juvenile specimen from juvenile *T. scalare* is possible because of its sharp axial ribs (see discussion under *T. scalare*).

### Supplemental Notes

1. — *Cancellaria eudeli* Sowerby, 1893, based on a single specimen from Penang (Western Malaysia, facing Sumatra), has not been found in the available material. Already Sowerby (1893: 27) stated its resemblance to the West-African *C. angasi* Crosse, 1863. Mr. R. E. Petit (in litt.) has been able to locate the type of *C. eudeli* in the National Museum of Wales, Cardiff; it is clearly a specimen of *C. angasi*, evidently with an uncorrect locality. Thus, *C. eudeli* must be removed from the list of Indonesian or Malaysian Cancellariidae.

2. — Also a single specimen of *Bivetiella similis* (Sowerby, 1833), MZBo reg. nr. Gst. 2394, locality "Djoemiang", is almost certainly wrongly labeled, although the possibility cannot be excluded that a century of intense shipping through the Suez-canal may have resulted in the incidental transport of mediterranean specimens to Indonesia.

3. — Two heavily eroded specimens in RMNH, labeled "*Cancellaria contabulata*, Madura, leg. J. de Vroom 1939, ex. coll. Kaas & Ten Broek nr. 4664", are here identified (especially based on the remaining protoconch of one specimen) as the South-African *C. foveolata* Sowerby, 1848. This species has never been reported from outside South-African waters; consequently the locality "Madura" must be considered erroneous.

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### REFERENCES

- Abbott, R. T. & Dance, S.P., 1982. *Compendium of Seashells*, vii-ix, 1-411. New York.
- Adams, A., 1864. Notes on some molluscous animals from the seas of China and Japan. - *Ann. Mag. Nat. Hist.*, Ser. 3, 13: 140-144.
- Adams, A. & Reeve, L. A., 1848. *The Zoology of the Voyage of H. M. S. Samarang*, Mollusca. 1-87, pls. 1-24.
- Adams, H. & Adams, A., 1854. *The genera of recent Mollusca*. Pt. 1. 1-484. London.
- Addicott, W. O., 1970. Miocene gastropods and biostratigraphy of the Kern River Area, California. - *U. S. Geol. Surv., Prof. Pap.* 642: i-iv, 1-174, pls. 1-21. Washington.

- Anderson, H. J., 1964. Die Miocäne Reinbek-Stufe in Nord- und Westdeutschland und ihre Molluskenfauna. - Fortschr. Geol. Rheinld. Westf. **14**: i-vi, 1-390, pls. 1-52. Krefeld.
- Barnard, K.H., 1958. The radula of Cancellaria. - J. Conch., Lond. **24** (7): 243-244.
- , 1959. Contributions to the knowledge of South African marine mollusca. - Ann. S. Afr. Mus. **45**: 1-237, 52 figs. Cape Town.
- Blainville, H. M. D., 1827. Manuel de Malacologie et de Conchyliologie. Ed. 2. 1-644, pls. 1-87. Levrault, Paris.
- Brander, C., 1766. Fossilia Hantonensia... i-iv, 1-43, pls. 1-9. London.
- Brocchi, G. B., 1814. Conchiologia fossile subappennine con osservazioni geologiche sulle Appennini. 56 + lxxx + 712 pp., pls. 1-16. Milano.
- Bronn, H., 1831. Italiens Tertiär-Gebilde und deren organische Einschlüsse. i-ix, 1-174, 1 pl. Heidelberg.
- Burch, J. Q., 1949. A new Trigonostoma from Central America. - Minutes Conch. Club South. Calif. Nr. 94: 3-4.
- Cernohorsky, W.O., 1972. Marine shells of the Pacific. Vol. 2. 13-411, pls. 1-68, textfigs. 1-28. Sydney.
- Chemnitz, J. H., 1780. Neues Systematisches Conchylien-Cabinet. Band 4. 28 pp. + 1-344, pls. 122-159. Nuernberg.
- , 1795. Ibid., Band 11. 1-310, pls. 174-213. Nuernberg.
- Chénu, J.C., 1859. Manuel de Conchyliologie et de Paléontologie Conchyliologique. Tome 1. i-vii, 1-508, text-figs. 1-3707. Paris.
- Coomans, H. E., 1973. Conidae with smooth and granulated shells. - Malacologia, **14**: 321-325, figs. 1-16. Philadelphia.
- Cossmann, M., 1889. Catalogue illustré des coquilles fossiles de l'Eocène des environs de Paris. IV Gastéropodes - Annl. Soc. r. malac. Belg. **24**: 4-381. Bruxelles.
- , 1899. Toxoglossa (suite). Cancellariidae. - Essais de Paléoconchologie comparée. 3 Livraison: 1-41, 192-194, pls. 1-2. Paris.
- Couturier, M., 1907. Etude sur les mollusques gastropodes recueillis par L.G. Seurat dans les archipels de Tahiti, Paumotu et Gambier. - J. Conch., Paris., Ser. 4, **9**, vol. 55: 123-178.
- Crosse, H., 1861. Etude sur le genre Cancellaria, suivie du catalogue des espèces vivantes et fossiles actuellement connues. - J. Conch., Paris. **9**: 220-256.
- , 1863. Etude sur le genre Cancellaria, et description d'espèces nouvelles (suite). - J. Conch., Paris. **11**: 58-69.
- Crosse, H. & Debeaux, O., 1863. Diagnoses d'espèces nouvelles du nord de la Chine. - J. Conch., Paris. **11**: 77-79.
- Dautzenberg, P., 1923. Liste préliminaire des mollusques marins de Madagascar et description de deux espèces nouvelles. - J. Conch., Paris. Sér. 4, tome 22, vol. 68: 21-74, 2 text-figs.
- Davoli, F., 1982. Cancellariidae (Gastropoda). In: E. Montanaro Gallitelli (ed.). Studie monografici sulla malacologia miocenica modenese. Parte I. I molluschi tortoniani di Montegibbio. - Paleont. Ital. **72** (n. s. 42): 5-74, pls. 1-7. Pisa.
- Deshayes, G. P., 1824-1837. Description des coquilles fossiles des environs de Paris. 1-814 (435-562 dating from 1835, *vide* Anderson, 1964). Paris.
- , 1830. Encyclopédie Méthodique. Histoire Naturelle des Vers. Tome 2. 1-256. Paris.
- , 1843. Histoire Naturelle des Animaux sans Vertèbres. 2 Ed. Tome 9. 1-728. Paris.
- Eames, F.E., 1957. Eocene mollusca from Nigeria. - Bull. Br. Mus. nat. Hist. Geol. **3** (2): 23-70, pls. 5-10. London.
- Ferrero Mortara, E., Montefameglio, L., Novelli, M., Opesso, G., Pavia, G., Tampieri, R., 1984. Catalogo dei tipi e degli esemplari figurati della collezione Bellardi e Sacco. Parte 2. - Museo Regionale di Scienze Naturali. Cataloghi. VII. 7-484, pls. 1-56. Torino.
- Finlay, H. J., 1930. Additions to the recent molluscan fauna of New Zealand. No. 3. - Trans. Proc. N. Zealand Inst. **61**: 222-247, pls. 42-45. Wellington.
- Forbes, E. & Hanley, S., 1848-53. A history of British mollusca, and their shells. 3 Vols. London (Vol. 3: vi-x, 1-616, is dated: 1-320: 1850; 321-616: 1851. *cfr.* Woodward, 1901).

- Garrard, T. A., 1975. A revision of Australian Cancellariidae. (Gastropoda: Mollusca). - *Rec. Aust. Mus.* **30** (1): 1-62, figs. 1(1)-5(4). Sydney.
- Gmelin, J. F., 1791. *Caroli a Linne Systema Naturae per regna tria naturae. Editio decima tertia, aucta, reformata. Vol. 1, pt. 6. (Vermes): 3021-3910. Lipsiae.*
- Golikov, A. N. & Starobogatov, Y. I., 1975. Systematics of prosobranch gastropods. - *Malacologia* **15** (1): 185-232. Philadelphia.
- Graham, A., 1966. The fore-gut of some marginellid and cancellariid Prosobranchs. - *Stud. Trop. Oceanogr.* **4**: 134-151.
- Habe, T., 1961a. Coloured illustrations of the shells of Japan. Vol. 2. 1-183, pls. 1-66, Appendix 1-42. Osaka.
- , 1961b. Description of four new cancellariid species, with a list of the Japanese species of the family Cancellariidae. - *Venus* **21** (4): 431-441, pls. 23-24. Kyoto.
- , 1968. Shells of the western Pacific in color. Vol. 2. (revised ed. of 1964 book) 1-233, pls. 1-66. Osaka.
- Habe, T. & Kosuge, S., 1965. Shells of the world in colour. Vol. 2. The tropical Pacific. iii-vii, 1-194, pls. 1-68. Osaka.
- Harasewych, M. G. & Petit, R. E., 1982. Notes on the morphology of *Cancellaria reticulata*. (Gastropoda: Cancellariidae). - *Nautilus* **96** (3): 104-113. Melbourne, FL.
- , 1984. Notes on the morphology of *Olssonella smithii* (Gastropoda: Cancellariidae). - *Nautilus* **98** (1): 37-44.
- Hinds, R. B., 1843. Descriptions of ten new species of *Cancellaria*, from the collection of Sir Edward Belcher. - *Proc. zool. Soc. Lond.*: 47-49.
- , 1844. The zoology of the voyage of H. M. S. Sulphur under the command of Capt. Sir Edward Belcher. Vol. 2 (Mollusca): 1-72, pls. 1-21. London.
- Hoenigshaus, F., W., 1831. Versuch einer geognostischen Eintheilung seiner Versteinerung-Sammlung. 3. Tertiaer-Gebirge. - *Jahrb. Miner., Geogn., Geol. u. Petrefaktenkunde.* **2**: 145. Heidelberg.
- Icke, H. & Martin, K., 1907. Over tertiaire en kwartaire vormingen van het eiland Nias. - *Samml. geol. Reichsmus. Leiden Ser. 1 Band 8*: 204-259, pls. 14-18.
- Iredale, T., 1925. Mollusca from the continental shelf of eastern Australia. - *Rec. Aust. Mus.* **14**: 243-270, pls. 31-43. Sydney.
- , 1929. Strange mollusks in Sydney harbour. - *Aust. Zool.* **5**: 337-352, pls. 37-38. Sydney.
- , 1930. Queensland molluscan notes N. 2. - *Mem. Qd. Mus.* **10**: 73-88, pl. 9. Brisbane.
- , 1936. Australian molluscan notes N. 2. - *Rec. Aust. Mus.* **19** (5): 267-340, pls. 20-24. Sydney.
- Jousseume, F. P., 1887. La famille des Cancellariidae (Mollusques Gastéropodes). - *Le Naturaliste, Sér. 2*, **9**: 155-157, 163-165, 192-194; 213-214, 221-223. Paris.
- Keen, A. M., 1958. Sea shells of tropical West America. xi + 624 pp. Stanford.
- Kensley, B., 1973. Sea shells of Southern Africa. Gastropods. 1-225, figs. 1-910. Maskew Miller, Cape Town.
- Kerney, M. P. & Cameron, R. A. D., 1979. A field guide to the land snails of Britain and North-west Europe. 1-288. London.
- Kiener, L. C., 1841. *Spécies général et Iconographie des coquilles vivantes. Famille des Canalifères. 2 Partie. Genre Cancellaire.* 1-44, pls. 1-9. Paris.
- Kira, T., 1962. Shells of the western Pacific in color. 1-224, pls. 1-72. Osaka.
- , 1963. Selected shells of the world illustrated in colours. 2-154, pls. 1-102, figs. 1-211. Tokyo.
- Kirtisinghe, P., 1978. Sea shells of Sri Lanka. 9-202, pls. 1-61. Tuttle, Rutland, etc.
- Kobelt, W., 1878. *Illustriertes Conchylienbuch. Band. 1.* 1-143, vi-xvi, pls. 1-50. Bauer & Raspe, Nuernbeg.
- , 1905. *Iconographie der schalentragenden eurpaeischen Meeresconchylien. Band 3.* 1-406, pls. 59-98. Kreidel, Wiesbaden. (p. 201-304 dated 1904).
- Koperberg, E. J., 1931. Jungtertiaere und Quartaere Mollusken von Timor. *in* Brouwer, H. A. *2e Nederlandsche Timor-Expeditie. VII*: 1-165, pls. 1-3.

- Korobkov, I. A., 1955. Manuel et guide des mollusques tertiaires. Gastéropodes. 1-795, figs. 1-261 (translation from the Russian by Piétrisson de St. Aubin). Paris.
- Kuroda, T., Habe, T. & Oyama, K., 1971. The Sea shells of Sagami Bay. Tokyo.
- Lamarck, J. B. de, 1804. Suite des mémoires sur les fossiles des environs de Paris. - Ann. Mus. Nat. Hist. Nat. 4: 105-115.
- , 1816. Tableau encyclopédique et méthodique des trois règnes de la nature. pls. 391-488. (other parts published between 1791 and 1816). Paris.
- , 1822 a. Histoire naturelle des animaux sans vertèbres. Tome 6, 2 partie. April 1822. 1-232. Paris.
- , 1822 b. Ibid. Tome 7. 1-711. August 1822.
- Lan, T. C., 1979. Rare shells of Taiwan in color. 1-444. Taiwan.
- Laseron, C. F., 1955. The New South Wales Cancellariidae. - Rec. Aus. Mus. 23: 267-272. Sydney.
- Lesson, A., 1842. Notes sur quelques mollusques rares ou nouveaux recueillis dans la Mer du Sud. - Act. Soc. Linn. Bordeaux Nr. 12: 203-209.
- Loebbecke, T., 1887. Das Genus Cancellaria. Systematisches Conchylien-Cabinet. Bd. 4, Abth. 4: 1-96, pls. 1-23. Nuernberg.
- Marcy, J. & Bot, J., 1969. Les coquillages. Les gastéropodes marins. 11-278, pls. 1-80. Bruxelles.
- Marks, J. G., 1949. Nomenclatorial units and tropical American Miocene species of the gastropod family Cancellariidae. - J. Paleont. 23 (5): 453-464, pl. 78. Tulsa.
- Martin, K., 1883-87. Palaeontologische Ergebnisse von Tiefbohrungen auf Java. - Samml. Geol. Reichsmus. Leiden. Ser. 1 Band 3: 1-380, pls. 1-15.
- , 1891-1906. Die Fossilien von Java auf Grund einer Sammlung von Dr R. D. M. Verbeek. - Ibid., (Neue Folge), Band 1: 1-332, pls. 1-45.
- , 1914. Die Fauna des Obereocaens von Nanggulan, auf Java. - Ibid., (Neue Folge), Band 2, Heft 4: 107-222, 8 pls.
- , 1925. Pliocene versteningen van Cheribon in Java. - Wet. Meded. Mijnb. Ned.-O.-Ind. Nr 4: 1-24, pl. 1. Weltevreden.
- , 1928. Mollusken aus dem Neogen von Atjeh in Sumatra. - Ibid., Nr. 10: 1-36, pl. 1.
- , 1931. Mollusken aus dem Oberocean von Nanggulan. - Ibid., Nr 18: 1-24, pl. 1.
- Melville, J. C. & Standen, R., 1901. The mollusca of the Persian Gulf, Gulf of Oman, and Arabian Sea, as evidenced mainly through the collections of Mr. F. W. Townsend, 1893-1900; with descriptions of new species. - Proc. zool. Soc. Lond., 327-460.
- Mermod, G. & Binder, E., 1963. Les types de la collection Lamarck au Muséum de Genève. Mollusques vivants. 5. - Revue suisse Zool. 70, fasc. 1 (7): 127-171. Geneve.
- Meuschen, F. C., 1767. Musei Leersiani Catalogus: i-xii, 1-230, 1 pl. Amsterdam.
- Nyst, H., 1838. Notice sur une Cyrène et une Cancellaire inédites. - Bull. Acad. r. Belg. Cl. Sci. Bruxelles, 5 (1): 113-116, 1 pl.
- Oostingh, C., 1931. Die Mollusken des Pliocaens von Sued-Bantam in Java. 4. (3 Fortsetzung). - Ingen. Ned. Ind. 4. Mijnbouw en Geologie, 5 (7): 106-115, pls. 6-7. Bandoeng.
- Olsson, A. A., 1970. The cancellariid radula and its interpretation. - Paleontogr. am., 7 (43): 19-22, pls. 4-6. Ithaca.
- Perry, G., 1811. Conchology, or the natural history of shells: 1-4, pls. 1-61 (explanations of plates unnumbered), London.
- Petit, R. E., 1967. Notes on Cancellariidae (Mollusca: Gastropoda). - Tulane Stud. Geol. Pal. 5 (4): 217-219. New Orleans.
- , 1974. Notes on Japanese Cancellariidae. - Venus 33 (3): 109-115. Kyoto.
- , 1980. The Mozambique Cancellariidae (Mollusca: Gastropoda). - Ann. Natal Mus. 24 (1): 211-216. Pietermaritzburg.
- , 1984. Some early names in Cancellariidae. - Amer. Malacol. Bull. 2: 57-61.
- Powell, A. W. B., 1979. New Zealand Mollusca. v-xiii, 1-500, pls. 1-82, textfigs. 1-120.

- Preston, H. B., 1905. Descriptions of new species of marine shells from Ceylon. - *J. Malac.* **12** (1): 2-10, pls. 1-2. London.
- Reeve, L. A., 1856. Monograph of the genus *Cancellaria*. *Conchologia Iconica*, 10. pls 1-10, textpages unnumbered. London.
- Rumphius, G. E., 1705. D'Amboinsche Rariteitskamer. 38 + 340 + 43 pp., pls. 1-59. Amsterdam.
- Sacco, F., 1894. I molluschi dei terreni terziarii del Piemonte e della Liguria. 16. *Cancellariidae*: 4-81, pls. 1-3. Torino.
- , 1904. *Ibid.*, Parte 30. Aggiunte e Correzioni. 1-203, i-xxxvi, pls. 1-31. Torino.
- Schepman, M. M., 1907. Mollusken aus posttertiäre Schichten von Celebes. *Beitraege zur Geologie Ost-Asiens und Australiens*. Band 8: 153-203, pls. 10-13.
- , 1911. The Prosobranchia of the Siboga expedition. Pt. 4. Result. *Siboga-Expeditie*, Mon. 49-1: 274-363, pls. 18-24.
- Schremp, L., 1983. Taxonomic problems of "*Cancellaria io*" Dall. - *Western Soc. Malacologists*, Ann. Rep. **15**: 17.
- Schremp, L. & Richmond, R., 1983. The cancellariid *radula*. - *Ibid.* **15**: 16.
- Seba, A., 1758. *Locupletissimi rerum naturalium thesauri*. Tomus 3. 1-212, pls. 1-116. Amsterdam.
- Semper, J. D., 1861. Notiz ueber die Gattung *Cancellaria*. - *Archiv. Ver. Freund. Naturgesch. Mecklenburg*. **15**: 244-266.
- Sharabati, D., 1984. *Red Sea Shells*. 1-128, pls. 1-49. Routledge & Kegan Paul, London etc.
- Sowerby, G. B. (I), 1822. The genera of recent and fossil shells. Part 1. Textpages and plates unnumbered. (N. 5, *Cancellaria*, dated 1822).
- (I), 1825. A catalogue of the shells contained in the collection of the late Earl of Tankerville... i-vii, 1-92, Appendix i-xxxiv, 9 pls. London.
- (I) & Broderip, W. J., 1832. Characters of new species of mollusca and conchifera, collected by Hugh Cuming. - *Proc. zool. Soc. Lond.*: 50-61.
- (II), 1833. The conchological illustrations. A catalogue of the recent species of *Cancellaria*. 1-8, pls. 9-13. London.
- (II), 1848. Descriptions of some new species of *Cancellaria* in the collections of Mr. H. Cuming. - *Proc. zool. Soc. Lond.*: 136-137.
- (II), 1849. *Thesaurus Conchyliorum* or monographs of genera of shells. Vol. 2. Monograph of the genus *Cancellaria*. 439-461, pls. 92-96. London.
- (II), 1881. Description of eight new species of shells. - *Proc. zool. Soc. Lond.*: 635-639, pl. 56.
- (III), 1893. Description of a new species of *Cancellaria* from Penang. - *Proc. malac. Soc. Lond.* **1**: 27.
- (III), 1903. *Mollusca of South Africa*. - *Mar. Invest. S. Afr.* **2** (3): 213-232, pls. 3-4. Cape Town.
- Spry, J. F., 1968. The sea shells of Dar es Salaam. Part 1. *Gastropods*. Second revision with supplement. 1-40, pls. 1-8. Dar es Salaam.
- Squires, R. L., 1984. *Megapaleontology of the Eocene Lajas formation, Simi Valley, California*. - *Contrib. Sci. No. 350*: 1-76. Los Angeles.
- Tantanasiriwong, R., 1978. An illustrated checklist of marine shelled gastropods from Phuket island, adjacent mainland and offshore islands, western peninsular Thailand. - *Phuket mar. Biol. Center, Res. Bull. Nr 21*: 1-22, 259 figs. Phuket.
- Tate, R., 1889. The gastropods of the older Tertiary of Australia. Part 2. - *Trans. Proc. Rep. Roy. Soc. S. Australia*. **11**: 116-174, pls. 2-10. Adelaide.
- Tesch, P., 1915. *Jungertiaere und Quartaere Mollusken von Timor*. 1. *in*: Wanner, J., *Palaeontologie von Timor*. 5 Lief.: 3-70, pls. 73-83. Stuttgart.
- Troschel, F. H., 1866-1893. *Das Gebiss der Schnecken zur Begrueundung einer natuerlichen Classification*. Band 2. i-viii, 1-409, pls. 1-32. Berlin. (Lief. 1: 1-48 dates from 1866).
- Tryon, G. W., 1885. *Manual of Conchology*, Vol. 7. Family *Cancellariidae*. 65-98, pls. 1-7. Philadelphia.
- Valentijn, F., 1726. *Omstanding verhaal ... Amboina .... Deel 3*. 1-586, 16 pls., 527 figs. Dordrecht, Amsterdam.

- Way, K. & Purchon, R. D., 1981. The marine shelled mollusca of West Malaysia and Singapore. Pt. 2. Polyplacophora and Gastropoda. - *J. Moll. Stud.* **47**: 313-321.
- Wenz, W., 1938-43. Gastropoda. in O. H. Schindewolf (Ed.). *Handbuch der Palaeozoologie*. Band 6 Teil 1. v-xii, 1-1639, figs. 1-4211. (Lief. 6: dated 1943). Berlin.
- Woodward, S. P., 1870. *Manuel de conchyliologie, ou histoire naturelle des mollusques vivants et fossiles.* (Traduit de l'Anglais sur la deuxième édition par A. Humbert) i-iii, 1-634, pls. 1-23. 297 text-figs. Paris.
- , 1901. Dates of publication of Forbes & Hanley's "History of British Mollusca". - *J. Conch. Lond.*, **10**: 47.
- Wrigley, A., 1935. English Eocene and Oligocene Cancellariidae. - *Proc. malac. Soc. Lond.* **21**: 356-381, pls. 32-35.
- Yen, T. C., 1935. Notes on protoconch and early conch stages of some marine gastropods of Japan. *Venus* **5** (5): 255-264, pl. 11. Kyoto.





Een linksgewonden exemplaar van  
**SCAPHELLA LAMBERTI** (SOWERBY, 1816)  
 uit de Lillo Formatie van Kallo (Volutidae, Gastropoda).  
 R. MARQUET\*

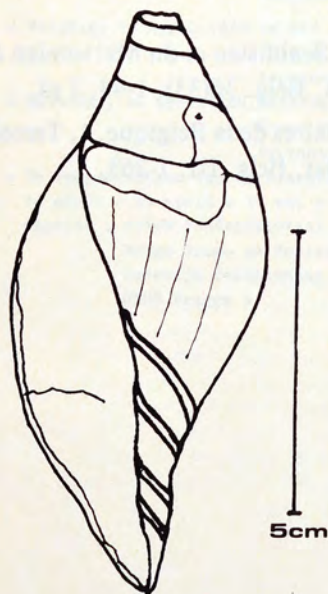
### Abstract

A sinistral specimen of *Scaphella lamberti* (SOWERBY, 1816) was collected in the Oorderen Sands (Lillo Fo., Middle Pliocene) at Kallo (Oost-Vlaanderen, Belgium). A frequency of 1/30.000 is estimated for sinistrality in this species.

### Beschrijving

Op 2.9.1984 vond ik een linksgewonden exemplaar van de soort *Scaphella lamberti* (SOWERBY, 1816) in zandopspuitingen naast het Vrasenedok te Kallo. Hoewel zij niet in situ verzameld werd bewijst het sediment in de schelp dat zij afkomstig is uit de Zanden van Oorderen, waarschijnlijk uit het deel met *Atrina pectinata* (LINNAEUS, 1758).

De schelp is subadult; zij is 104 mm hoog, maar de jongste en de oudste windingen ontbreken (fig.)



### Frequentie

De frequentie van het voorkomen van deze afwijking bij *S. lamberti* kon als volgt geschat worden. In mijn verzameling bevinden zich ongeveer 300 volledige exemplaren van *S. lamberti*. Tijdens 10 excursies werd het totale aantal volledige exemplaren en herkenbare fragmenten van deze soort geteld. Daarbij bleek dat iets minder dan 1 op 100 exemplaren volledig genoeg was om mee te nemen, zodat de 300 exemplaren in mijn verzameling uit minstens 30.000 schelpen geselecteerd moeten zijn. Dit geeft een frequentie van 1/30.000 voor het linksgewonden exemplaar. Dit is natuurlijk een zeer grove schatting.

*Scaphella lamberti* (Sowerby, 1816).  
 Linksgewonden exemplaar:  
 Vrasenedok, Kallo (Zanden van  
 Oorderen, P. Plioceen).

### Bespreking

In de literatuur wordt nergens melding gemaakt van een vondst van een linksgewonden *S. lamberti* in het Belgische Pliocen (GLIBERT, 1970; NYST, 1885). Ook in het Britse Pliocen schijnt nog geen linksgewonden exemplaar gevonden te zijn, wel in Nederland (Westerschelde) (P. CAMBRIDGE, pers. meded.).

Ook van andere *Scaphella*-soorten zijn linksgewonden exemplaren bekend. DUBAR & DUBAR (1982) vermelden een exemplaar van *S. floridana brennmortoni* OLSSON & PETIT, 1964 uit het Onder Pleistoceen van Z. Carolina en ABBOTT (1974) beschrijft drie recente linksgewonden vondsten van *S. juniona* (LAMARCK, 1844).

### LITERATUUR

- ABBOTT, R.T. 1974. *American Seashells*, 2nd ed. Van Nostrand Reinbold Co., N.Y. 663 blz.
- DUBAR, J.R. & DUBAR, S.S. 1982. A sinistral specimen of *Scaphella* from the Waccamaw Formation (Early Pleistocene), South Carolina. - *The Nautilus* 96(4): 125-127, fig. 1-4.
- GLIBERT, M. 1960. Gastropodes du Diestien, du Scaldisien et du Merxemien de la Belgique. 4e Note. - *Bull. Inst. roy. Sc. Nat. Belg.* 36(33): 1-44, 2 pl.
- NYST, P.H. 1881. Conchyliologie des terrains tertiaires de la Belgique. 1. Terrain Pliocene Scaldisien. - *Ann. Mus. roy. Hist. Nat. Belg.* III: 1-263.



belgische vereniging voor conchylologie v.z.w.

antwerpen

BIJLAGE BIJ GLORIA MARIS VOLUME 25/2

Activiteiten van onze vereniging

- Zondag, 2 maart 1986 in Stella Maris Italiëlei 72 Antwerpen om 10 uur.  
Contactdag in samenwerking met de Strandwerkgroep  
en de Nederlandse Strandwerkgemeenschap.
- Vrijdag, 14 maart 1986 in het lokaal Koolkaaf 9 Antwerpen om 20 uur.  
Vergadering van de studiegroep.
- Vrijdag, 21 maart 1986 in het lokaal Ommeganckstraat 26 Antwerpen om  
20 uur.  
Vergadering van de Raad van Beheer.
- Zondag, 6 april 1986 in Stella Maris Italiëlei 72 Antwerpen om 10 uur.  
Maandvergadering met gevarieerde onderwerpen.
- Vrijdag, 11 april 1986 in het lokaal Koolkaaf 9 Antwerpen om 20 uur.  
Vergadering van de Studiegroep.
- Vrijdag, 18 april 1986 in het lokaal Ommeganckstraat 26 Antwerpen om  
20 uur.  
Vergadering van de Raad van Beheer.
- Zaterdag, 26 april 1986 Lentebal in zaal " DE BREM "  
Frans Van Heymbeecklaan 7 2100 Deurne  
Inlichtingen en kaarten bij de bestuursleden.
- De vergaderingen van de afdeling West-Vlaanderen gaan door op  
16 maart - 20 april - 11 mei - 15 juni .

Opgelet : NIEUW VERGADERLOKAAL

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Samenvatting van het jaarverslag over de werking van de vereniging, voor-  
gebracht door de heer Delsaerd op de statutaire vergadering van 050186.

Het past om bij het begin van ons zilveren jubileum even achteruit te  
kijken en te zien wat we in het voorbije jaar hebben verwezenlijkt.

Op onze maandvergaderingen kwamen gemiddeld 55 leden opdagen.

Als sprekers hadden we :

Dhr. Wils ( Conidae); Dhr.Kruyniers (Mitridae); Dhr. Van Pel (Geschiedenis  
van het Zoölogisch Museum in Amsterdam); Dhr.Delsaerd (Fasciolariidae);  
Dhr.Pickery (auteurswerken); Dhr.Delsaerd (de Franse naturalist Buffon);  
Dhr.Van Nieulande (Doosjes maken voor verzamelingen); Dr.Ziderman uit  
Israël ( Het bijbels purper); Dr.Gillis (Conus croceus herontdekt); Dhr.  
Anseeuw (Pleurotomaria); Dhr.Wils (Conidae); Dhr.Wuyts (Genus Chicomareus).  
Verder hadden we ons bal op 20 april; de jaarlijkse schelpenbeurs in mei;  
een determinatievergadering met medewerking van verschillende mensen en  
een ideeënvergadering in december.

Meerdere sprekers verzorgden een kleine tentoonstelling in natura.

Verschillende leden leverden bijdragen voor ons maandblad :

Dhr.Pickery (Crassostrea gigis en C.angulata); de heren De Wilde - Van  
Goethem en Godderis ( albino Lehmannia marginata in België); Dhr.Bossuyt  
(het geslacht Venerupis in de Keltische provincie);Dhr.Delsaerd (Vasum  
crosseanum); Dhr.Van Belle ( Polyplacophora van Madeira en aanvulling bij  
de Europese Polyplacophora); Dr.Van Moer (Malacofauna aan de Ligurische  
kust); Dhr.Vencken ( Het experiment Istrië); Dhr.Swinen ( Vakantiereis  
naar Mallorca); Dhr.Verstraeten (Schelpen zoeken onder vissersboten);  
de heren De Roover en Steppe (Strombus decorus raybaudi in de Middellandse  
Zee); Dhr. Van den Bruele (Shell dump van Cape Canaveral gedumpt).

Het februarinummer werd volledig verzorgd door onze afdeling uit West-  
Vlaanderen met artikels van Dhr.Nolf (Evaluatie van eigen werking); Dhr.  
Gilbert (De Conventie van Washington); Dhr.Haelters ( reisverslag naar  
Griekenland); Dhr.Gilbert (Het biotoop ; de kust).

Tevens verschenen de teksten van de voordracht vande heren Van Pel,  
Van Nieulande en Ziderman.

Boekbesprekingen waren er van de heren Verhecken en Backeljau.

Het lijkt geen twijfel dat de heer Kruyniers de sterkste auteur was met  
zijn overzicht van de Mitridae.

In de studiegroep werd onder leiding van de heer Wils verder gewerkt aan  
de Cassidae, waarvan de resultaten in 1987 zullen worden gepubliceerd.

Het echtpaar Vereycken werd in de bloemen gezet : mevrouw voor 20 jaar  
leiden van de jeugd afdeling; meneer voor 20 jaar maken van ons maandblad.

Tenslotte dient de heer Van Nieulande vermeld die met de werkgroep Geologie  
in samenwerking met het Zeeuws Biologisch Museum een tentoonstelling opzette  
van fossiel materiaal die een heel jaar te bezichtigen was.

Statutaire vergadering van 5 januari 1986 : verkiezing van de raad van beheer.

---

Aanwezig : 52                      Uitgebrachte stemmen : 48

De samenstelling van het bestuur ziet er nu als volgt uit :

Erevoorzitter        : de heer PELLEGRONS  
Voorzitter            : de heer DELSAERDT  
Ondervoorzitter     : de heer PICKERY  
Sekretaris            : de heer WUYTS  
Hulpsekretaris      : de heer DE ROOVER  
Penningmeester      : de heer KRUYNIERS  
Bibliotheecaris     : mevrouw MILANS e/ STEPPE  
                              de heer NOTELTEIRS  
Patrimoniumbeheer-  
                              der        : de heer STEPPE  
Raadsleden            : de heer BACKELJAU  
                              de heer VEREYCKEN  
                              mevrouw HENDRIX e/VEREYCKEN  
Gecoöpteerd          : mevrouw VERDULT e/ DELSAERDT  
                              de heer BOONE  
                              de heer VANDERVLOET

#### MEDEDELING

Nautilus-Gent, Vereniging voor mineralogie en paleontologie richt op 23 maart 1986 een internationale mineralen-en fossielenbeurs in te Gent in de Rijksnormaalschool, Ledeganckstraat 8 .  
Parallel met de beurs loopt een tentoonstelling met als thema " Fossielen en mineralen van Cap Blanc Nez ". De organisatoren zijn erin geslaagd om bijna alle fossielen die op deze plaats kunnen worden gevonden, bijeen te brengen.

#### ANNONCE

Wegens een reorganisatie van mijn collectie wens ik mijn Conussoorten ( ongeveer 90 ) en Volutasoorten ( ongeveer 30 ) van de hand te doen, hetzij door verkoop, hetzij door ruiling.  
Geïnteresseerden kunnen een lijst bekomen bij :  
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## BEURZEN

Voor leden die geïnteresseerd zijn in fossielen zijn wellicht volgende fossielen-en mineralenbeurzen interessant :

- zondag, 2 maart 1986 in de feestzaal Kielpark St.-Bernardsesteenweg  
2020 Antwerpen.  
Ingericht door de Academie voor Mineralogie.
- zondag, 23 maart 1986 in de Rijksnormaalschool te Gent.  
Ingericht door Nautilus-Gent ( zie hiervoor ) .
- zaterdag, 5 en zondag  
6 april 1986 in de Handelsbeurs Twaalfmaandenstraat te  
Antwerpen.  
Ingericht door de Mineralogische Kring Antwerpen
- zondag, 26 oktober 1986 in het Alpheusdal Williotstraat 22 2600 Berchem  
Ingericht door de Belgische Vereniging voor  
Paleontologie.

## RETROSPECTIEF IN TELEGRAMSTIJL

Ongetwijfeld veegt dit nummer de laatste kruimels heimwee van tafel, wat onze vroegere Gloria Maris betreft. Met onverdeeld genoegen denken we terug aan de statutaire vergadering: Veel volk, een film-kink in de kabel, maar met K. Fraussen (*Trochus dentatus* van Italië), A. Verhecken (wat iemand lijden kan bij een revisie van Cancellariidae), L. Steppe (oude schelpen-etsen op de kop getikt in een antiekwariaat). Nog bedankt aan de dokters Gillis en Wellens (kasverslag boekjaar 85). Het JUBILEUMFONDS broodnodig, groeit (het kan nog altijd)... een riem onder het hart van het hele bestuur maar vooral van de penningmeester. Retrospectief met nog meer plezier aan 2 februari met P. Van Pel (Tweede Australisch Avontuur): Vertelkunst en boeiende dia's. Het aantal aanwezigen vertolkte de hoge verwachtingen - terecht! Er kon 'geschelpt' worden dank zij leden-verkopers en de clubtafel. Twee onderonsjes staken van wal: *Conus betulinus*-complex (bedankt E. Wils) en *Scisurella*'s onder de binoculair - nieuw in onze 25 jaar (bedankt J. Verstraeten). - Onderonsjes = interessegroepjes, of hoe leden elkaar vinden... hoe meer, hoe liever! Maar vooral talrijke reacties op het initiatief van dhr. Boone: Postzegels over molusken. Zie meteen ons april-programma.

Wat een vereniging! Plezierig om van jullie voorzitter te mogen zijn!

A. Delsaerdt

MEMO: 26 april BAL - 26 april BAL - 26 april BAL - 26 april Bal - 26 april BAL

## ERRATA in the paper on the genus SCUTUS (Gloria Maris: 25 (1)-)

§1, line 7: in a number of species (not series); §2, [sp.1]: *Patella unguis* (not *Patelle*); [sp.2]: *Scutum Dacicum* p. 86 (not 88); [21]: *P. unguis* (not *P. ungius*); [32]: *P. + elongatus* p. 13, pl. 1 (not p. 1); [sp.18]: *Parm. imbricatus* (not *inbricatus*); [86]: *elongatus* Lam. (not *elogantus*); [86]: *angustatus* Ad. (not *augustatus*); [109]: 33:210 (not 40), nor *Scutum*; [sp.45]: type is with *clypeatum* (noy wit); [sp.57]: p. 112, pl. 17 (not p. 117); [180]: *Avisc. veitchi* p. 55, f. 19 (not p. 55, 19); [184]: p. I 230 (not 1230); [186]: *Auvers* (not *Anvers*); [192]: *S. antipodes* p. 25, p. 7 (not p. 17); [205]: 1982 (not 1983); [220]: *sinensis* (not *sinesis*); §3 [sp.11]: include n° 53; §3: add the line: [sp.15] *fragilis* Blainv. 1825 [35]; §3: go on a new line with *sinensis* Blv. and *tumidus* Q.G.; [sp.31]: + *terminalis* (not *terminal*); §4: *S. unguis*: some of them are only a subspec. (not subgen.) of *unguis*.; *S. rueppeli* = *unguis* Auct. (not *Aucht.*); §5 [f.7]: *P. ambigua* [17] (not [1]).



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## ONZE SPEURPUZZEL: GENUSNAMEN VAN SCHELLEN

Onderstaande 84 genusnamen zitten kriskras in het letterdiagram verborgen.

Met kriskras bedoelen we dat de woorden van links naar rechts; van rechts naar links; van boven naar onder; van onder naar boven of schuin (diagonaal) van boven naar beneden en van beneden naar boven, kunnen gelezen worden.

Zie het doorstreepte voorbeeld.

De letters kunnen soms meer dan één keer gebruikt worden.

Als u de 84 geslachten hebt gevonden, resten nog een aantal letters die niet werden weggestreept. Deze vormen, van links naar rechts gelezen, een hulde aan onze B. V. C.

Aan allen die mee willen speurpuzzelen VEEL SUCCES!

ACANTHOCARDIA	HALIOTIS	RANELLA
ACTEON	HARPA	RAPA
✕ ANCILLA	IRUS	RAPANA
ARCA	JUNONIA	RISSOA
ARCHITECTONICA	✕ LATIAXIS	SCAPHANDER
ARGONAUTA	LIMA	SCROBICULARIA
ASPRELLA	LYRIA	SEPIA
ASTRAEA	MACOMA	SINUM
AULICA	MACTRA	SPONDYLUS
BASSINA	MELO	STROMBUS
BARBATIA	MITRA	STRUTHIOLARIA
BUCCINUM	✕ MUREX	✕ TAPES
✕ BULLA	MYA	THAIS
BUSYCON	MYTILUS	THALOTIA
CARDITA	✕ NATICA	✕ TIBIA
✕ CASSIS	NEPTUNEA	TONNA
CHAMA	NUCULA	TRIVIA
CHITON	OLIVA	TROCHUS
CONUS	OLIVELLA	TURBO
CORCULUM	OVULA	TURRIS
COSTELLARIA	PECTEN	TURRITELLA
CYMATIUM	PHARUS	UMBONIUM
CYPRAEA	PHOS	VASUM
DRUPA	PITAR	VEXILLUM
EPITONIUM	PLEUROTOMARIA	✕ VOLUTA
FICUS	POLINICES	VOLUTOMITRA
<del>GART</del>	PUPA	VOLVA
GLOSSUS	PYRAMIDELLA	XENOPHORA



B A R O H P O N E X R E D N A H P A C S  
B A R B A T I A A L L E D I M A R Y P S  
E E I S U R I U N A T I C A L G I L O A  
S A C D H P E L I R C A S S I S E H L I  
V R E R R H N I S G E N A A P U P I I R  
G T I B I A O C S O I P A I R Y L N N A  
G S V U O R C A A N R A M O C A M N I L  
M A O C R U Y O B A N E T C E P U C C L  
U R S C O S S N H U C O H S U C I F E E  
I T U I Y A U L I T M O L M U R E X S T  
T I H N O I B G I A N S U L Y D N O P S  
A M C U E V = V R Y F A A L L E V I L O  
M O O M A I E I O L E M C A E A R P Y C  
Y T R N I R A N C I L L A A A V I L O C  
C U T C N T A P E S S U S S O L G R H O  
A L A O O T W R I I A R T C A M C A N B  
I O E N N O E T C A M R V A S U M P G R  
R V N U U V T I G H U A M I L A J A A U  
A A U S J E A N O T I H C U S I R R U T  
L A T I A X I S H M N T M Y T I L U S U  
U R P J O I N I A U O T E G A N A P A R  
C A E A V L O V L I B H D C A N L K T R  
I P N A R L V O I N M A A M T A L A I I  
B U L L A U U L O O U L I U N O E R D T  
O R O R T M L U T T A O P N N Z N T R E  
R D I A I E A T I I C T E I L E A I A L  
C A D Y P E N A S P R I S S O A R M C L  
S U B M O R T S I E A A A L L E R P S A

## PROGRAMMA

---

### CONGRES DAG TER GELEGENHEID VAN HET VIJFJARIG BESTAAN VAN DE STRANDWERK GROEP.

Op zondag, 2 maart 1986 gaat in de Seamans' Club (Stella Maris), Italiëlei 72, Antwerpen, een congresdag door met medewerking van:

- de Belgische Vereniging voor Conchyliologie,
- de Strandwerkgroep (België).
- de Nederlandse Strandwerkgemeenschap (Nederland).

### P R O G R A M M A

- 10.00 voorstelling van de drie verenigingen door de respectievelijke voorzitters.
- 10.30 De Boulonnais  
voordracht door M.J. Otten van de Nederlandse Strandwerkgemeenschap.
- 11.15 Borende bivalven in Westeuropese wateren  
voordracht door R. Vanwalleghem van de Strandwerkgroep.
- 14.00 Vissen van de Belgische kust  
voordracht door G. Rappé van de Strandwerkgroep.
- 14.15 Gruisonderzoek  
voordracht door D.F. Hoeksema van de Nederlandse Strandwerkgemeenschap.
- 15.20 De fossielen van Whitby  
voordracht door M. Wagenaar van de Belgische Vereniging voor Conchyliologie.
- 16.30 Slotwoord door de drie voorzitters.

Op deze congresdag zal een uitgebreide boekenstand worden opgezet over diverse mariene onderwerpen.

Tijdens de middagpauze kan in Stella Maris een meegebracht lunchpakket worden genuttigd. Drank is verkrijgbaar ter plaatse.

Er zijn in de buurt ook heel wat eetgelegenheden (info op de dag zelf).

### Zondag 6 april

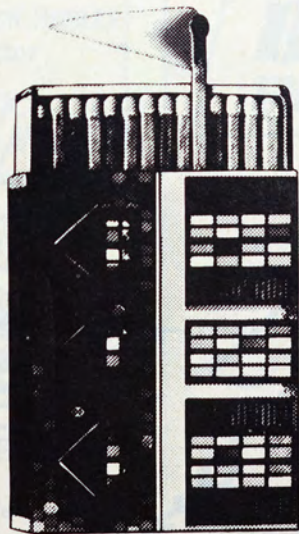
De entoesiaste reacties van vele aanwezigen op de postzegelverzameling van dhr. Boone (thema: mollusken) tijdens de maandvergadering van februari, leerden ons dat heelwat leden ook filatelisten zijn.

Daarom deze uitnodiging: Laat de anderen eens mee genieten van uw postzegelverzameling 'mollusken'... Dat wordt ongetwijfeld een geanimeerd deel van de vergadering.

We voorzien bovendien nog enkele sprekers die een stukje gespecialiseerde informatie zullen overbrengen (cfr. de januari-vergadering).

Het belooft weer!

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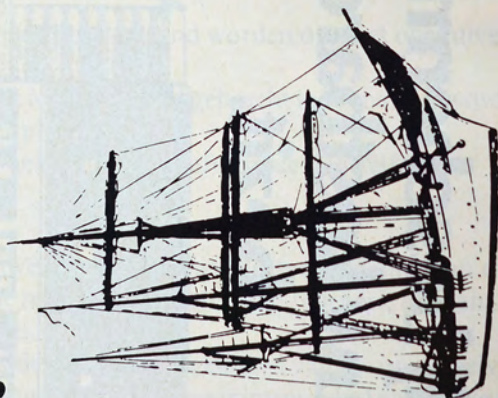
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