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THREE NEW PECTINACEAN SPECIES FROM THE INDONESIAN ARCHIPELAGO COLLECTED DURING THE SIBOGA EXPEDITION (1899-1900)

with

additional information and corrections on the previous report
(Mollusca: Propeamussiidae, Pectinidae)

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ABSTRACT

Material from the Siboga Expedition, not mentioned in the report by Dautzenberg & Bavay (1912), is studied. It contains three new species: *Propeamussium dautzenbergi*, *Cyclopecten bavayi* and *Palliolum tydemani*, which are described here. The Propeamussiidae and Pectinidae, discussed in the original report, are critically reexamined.

INTRODUCTION

Dautzenberg & Bavay (1912) published on the Propeamussiidae and Pectinidae of the SIBOGA Expedition (1899-1900), however, not all the material was identified. According to the handwritten labels and notes the unidentified samples were seen by Bavay, but probably due to the small size of the shells, they were not identified to species level.

In their report those authors described 11 Propeamussiidae, of which 8 were new to science. In the family Pectinidae they recognized 33 species of which two were new species, and two new varieties of *Chlamys senatoria* (Gmelin, 1791).

Amongst the unidentified samples seven more species of the Propeamussiidae were found including two new species, which are des-

cribed here. In the Pectinidae nine more species were found of which one new to science.

Also new samples could be added to the species described by Dautzenberg and Bavay.

A combined list of all Pectinacean species from the Siboga Expedition, mentioned in the original report and studied by the present author, is given in Table I. The taxa are placed here in the system proposed by Hertlein (1969).

All material is deposited in the Zoological Museum Amsterdam, unless otherwise stated.

Abbreviations

- KBIN: Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel.
MCZ: Museum of Comparative Zoology, Cambridge (U.S.A.).
RMNH: Rijksmuseum van Natuurlijke Historie, Leiden.
ZMA: Zoologisch Museum Amsterdam.

TAXONOMY

Family Propeamussiidae Abbott, 1954.

Propeamussium (Propeamussium) meridionale (E. A. Smith, 1885)
(figs. 1-2)

Amussium meridionale E. A. Smith, 1885: 316-317, pl. XXIV, figs. 1-1a.

Amussium (Propeamussium) malpelsonium Dall, 1908: 405, pl. 6, fig. 9.

Material examined. SIBOGA stat. 211. Indonesia, Flores Sea, 5°40'.7 S, 120°45'.5 E. Deep sea trawl. 1158 m. Coarse grey mud, superficial layer more liquid and brown. 25.IX.1899. One left valve.

Distribution and ecology. The species has been recorded throughout the Indo-Pacific, and Subantarctic region. Live specimens are known from bathyal and abyssal depths on muddy bottoms. Hicks & Marshall (1985: 228) stated that gut samples of this carnivorous species usually contain harpacticoid copepods. Knudsen (1970: 96) also found crustaceans in the stomach.

Remarks. Powell (1960: 175) placed this species in *Variamussium* Sacco, 1875 (misspelled as "Varlamussium"), considered by Hertlein (1969: N350) as a junior synonym of *Parvamussium* Sacco, 1897. However, most morphological features of *P. meridionale* are similar to *Propeamussium* De Gregorio, 1884. *Propeamussium zoniferum* (Dautzenberg & Bavay, 1912) is closely related, and perhaps only a junior synonym. In young specimens of *P. zoniferum* the left valve is smooth and the internal surface bears nine lirae.

Propeamussium (Propeamussium) siratama (Oyama in Kuroda, 1951)
(figs. 3-4)

Ctenamussium (Micramussium) siratama Oyama in Kuroda, 1951: 80, pl. 13, figs. 5-7.

Material examined. SIBOGA stat. 159. Indonesia, Halmahera Sea, 0°59'.1 S, 129°48'.8 E. Dredge. 411 m. Coarse sand bottom. 16.VII.1899. One left valve.

Distribution and ecology. Currently only known from the western Pacific region, living from sublittoral to bathyal depths on a coarse sandy and coral rubble bottom.

Remarks. *P. siratama* is the type species of *Micramussium* Oyama (in Kuroda, 1951: 80). Hertlein (1969: N350) treated it as a junior synonym of *Parvamussium* Sacco, 1897. The SIBOGA specimen has 9 internal lirae with one rudimental interstitial lira.

Propeamussium (Parvamussium) dautzenbergi n. sp.
(figs. 5-8)

Type material. Holotype: one left valve. Measurements: Height 8.8 mm, length 9 mm (ZMA Moll. no. 3.89.005). Paratypes: SIBOGA stat. 90, one left valve (ZMA Moll. no. 3.89.006), and SIBOGA stat. 95, one left valve (ZMA Moll. no. 3.89.007).

Locus typicus. SIBOGA stat. 90. Indonesia, Makassar Strait, 1°17'.5 N, 118°53' E. Dredge. 281 m. Bottom coral sand and stones. 21.VI.1899.

Description. Shell small, approximately 9 mm in height and length, convex and circular. Anterior and posterior auricles unequal, umbonal angle about 90°. The surface of the left valve is cancellated, produced by irregular radial costae and small concentric lamellae. The radial costae are somewhat more pronounced than the concentric lamellae. Near the umbonal area only concentric lamellae are present, 1.5 mm from the umbonal top radial riblets start. Towards the sides the radial costae are squamose caused by overrunning concentric lamellae. Near the central part of the disc, and also near the ventral margin intermediate radial costae are present. On the anterior auricle the concentric lamellae are more pronounced than on the external surface, and near the dorsal edge undulated. Some radial riblets are very weak. The sculpture of the posterior auricle is more smoothish, and also produced by un-

dulated concentric lamellae and smooth radial riblets.

On the internal surface 11 radial lirae are visible, almost running to the edge of the shell, and near the ventral margin the external sculpture is visible. Hinge line straight with crashed crurae and a triangular resilial pit. Above the resilial pit the top of prodissoconch and dissoconch is also visible.

Etymology. The new species is named after Philippe Dautzenberg (1849-1935), the famous Belgian malacologist, who published in 1912 with Arthur Bavay on the Propeamussiidae and Pectinidae of the SIBOGA Expedition.

Distribution and ecology. This species is only known from Indonesia, with a bathymetric range of 281 to 522 m. Dead specimens are dredged from a stony bottom, or a coral sand bottom with stones.

Discussion. A related species is *P. cristatellum* (Dautzenberg & Bavay, 1912), which lives sympatric with the new species. It has less but more pronounced radial costae, which do not suggest the character of a cancellated structure of the external surface of the left valve. The concentric lamellae are somewhat closer arranged. *P. thetidis* (Hedley, 1902) (= *Ctenamysium salacon* Iredale, 1929) from eastern Australia has the same conchological characters as *P. cristatellum*, but is less sculptured. *P. scitulum* (E. A. Smith, 1885) and *P. torresi* (E. A. Smith, 1885) are smaller and smoothly sculptured with fine radiations (*P. scitulum*) or concentric striae (*P. torresi*) without a cancellated structure.

Propeamussium (Parvamussium) scitulum (E. A. Smith, 1885)

Amussium scitulum E. A. Smith, 1885: 312, pl. XXIII, figs. 4-4b.

Amysium (Propeamysium) scitulum Smith var.? *cmadoritinctum* Kuroda, 1931: 77, figs. 81-82.

Propeamussium (Parvamussium) gracilis Wang, 1984: 601, 603-604, pl. 1, figs. 5-10, fig. 4.

Material examined. SIBOGA stat. 2. Indonesia, Madura Strait, 7°25' S, 113°16' E. Trawl. 56

m. Grey muddy bottom with some radiolaria. 8.III.1899. One left valve.

Distribution and ecology. Throughout the western Pacific region. Living specimens are recorded from littoral to bathyal depths between coral rubble and sediments on a sandy or muddy sand bottom.

Remarks. The sculpture of this species seems to be very variable. The left valve is sometimes smooth to finely radiated. *P. torresi* (E. A. Smith, 1885) may be synonymous, because the morphological characters are very close to *P. scitulum*. *P. cmadoritinctum* and *P. gracilis* are somewhat larger of proportion, but the syntypes of *P. scitulum* are juvenile specimens, as was already suggested by Smith (1885: 312).

Some authors assigned this species to *Ctenamysium*, but the conchological features are very close to *Parvamussium*.

Propeamussium (Parvamussium) torresi (E. A. Smith, 1885)

Amussium torresi E. A. Smith, 1885: 311-312, pl. XXIII, figs. 3-3b.

Material examined. SIBOGA stat. 98. Philippines, Sulu Archipelago, 6°9' N, 120°21' E. Dredge. 350 m. Fine sand bottom. 28 June 1899. One complete specimen.

Distribution and ecology. Known from the western Pacific region. Live specimens are recorded from sublittoral to bathyal depths on a sandy or coral sand bottom.

Remarks. Iredale (1939: 370) mentioned *P. torresi* as the type species of *Glyptamysium*, which genus was considered by Hertlein (1969: N350) as a junior synonym of *Parvamussium*. Oyama (Venus, XIII (5-8), 1944: 242, 244) misspelled the name as "Graptamussium". *P. torresi* might be a synonym of *P. scitulum*, because intermediate forms are known, and the sculpture of *P. scitulum* is variable (Dijkstra, pers. observation).

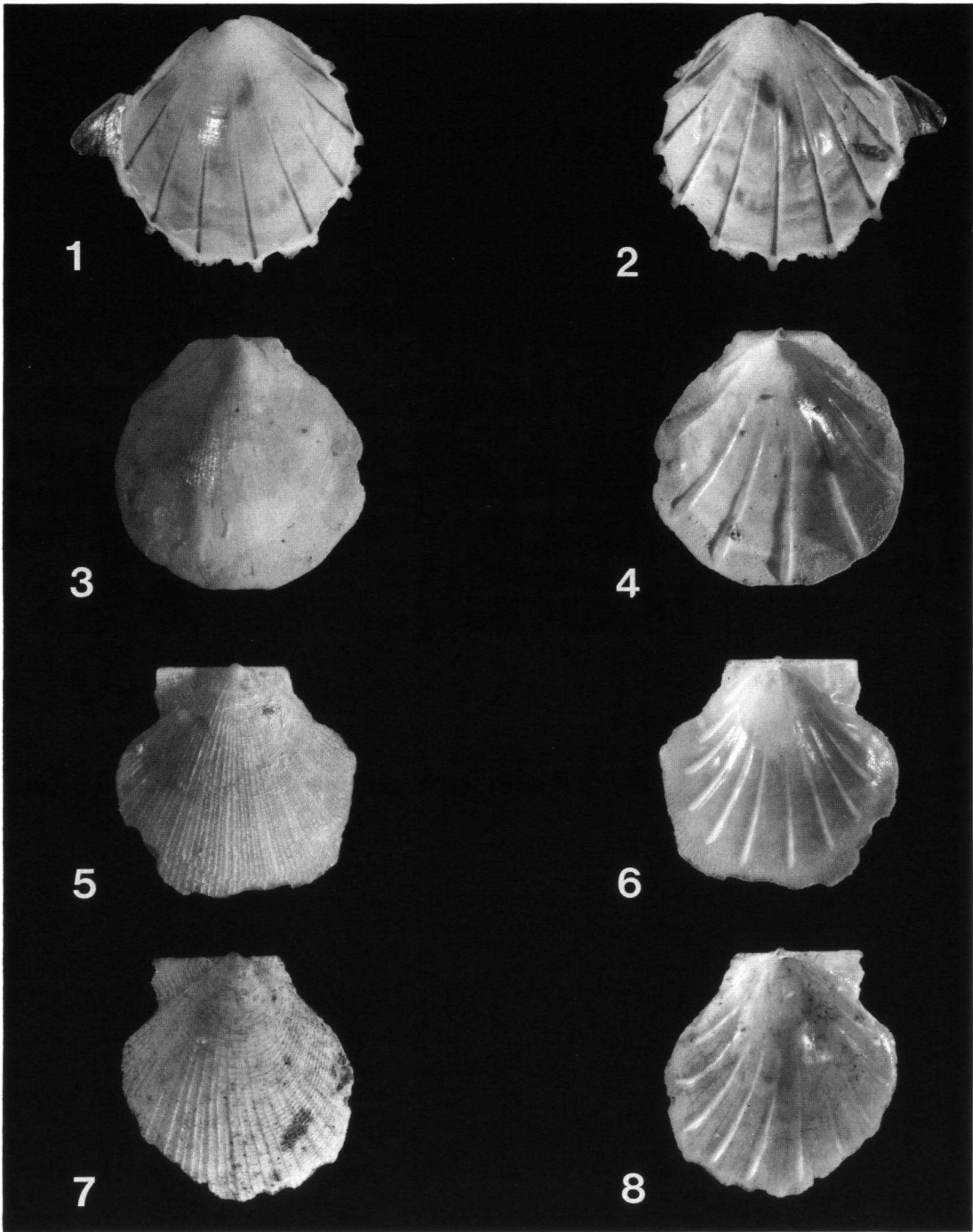


Plate I. Figs. 1-2; *Propeamussium (Propeamussium) meridionale* (E. A. Smith, 1885), SIBOGA stat. 211. Left valve, exterior and interior (6.5 ×). Figs. 3-4 *Propeamussium (Propeamussium) siratama* (Oyama in Kuroda, 1951), SIBOGA stat. 159. Left valve, exterior and interior (4.9 ×). Figs. 5-6. *Propeamussium (Parvamussium) dautzenbergi* sp. nov., holotype. SIBOGA stat. 90. Left valve, exterior and interior (3.9 ×). Figs. 7-8. Idem, paratype. SIBOGA stat. 95. Left valve, exterior and interior (7 ×).

Cyclopecten (Cyclopecten) bavayi n. sp.
(fig. 9)

Material examined. Holotype: one specimen, without soft parts (right valve broken). Measurements of left valve: height 6.8 mm, length 7 mm (ZMA Moll. no. 3.89.008).

Locus typicus. SIBOGA stat. 178. Indonesia, Ceram Sea, 2°40' S, 128°37'.5 E. Deep sea trawl. 835 m. Blue muddy bottom. 2.IX.1899.

Description. Shell small, fragile, of approximately 7 mm, subcircular and inaequivalve; left valve more convex than the right one. Anterior and posterior auricles unequal, umbonal angle about 90°. The left valve has concentric lamellae on the entire external surface. Near the umbonal top only small concentric lamellae, with wider interstices near the central part of the disc, and smaller near the ventral margin. The lamellae are spiny near the posterior side and ventral margin.

Small radial riblets between the concentric lamellae, which lack on the auricles. The auricles bear only concentric lamellae, which continue on the disc. The right valve is smoothly sculptured with concentric lamellae and microscopic interstitial radial striae. Near the ventral margin a microscopic fine granular interstitial structure can be observed (60×). The concentric lamellae on the anterior auricle are irregularly arranged, separated from the disc by a rising suture.

The internal surface of the left valve is composed of fine radial grooves, and near the ventral margin crossed by some concentric grooves. The small hinge line is straight with an inclined rounded resilial insertion. The internal surface of the right valve is smooth, glossy and translucent with visible external concentric striae. The anterodorsal hinge line is spiny, caused by concentric external lamellae.

Etymology. The new species is named after Arthur Bavay (1840-1923), a French pharmacist, who published with Dautzenberg (1912) on the Pectinacean Mollusca of the SIBOGA Expedition.

Distribution and ecology. The new species is so far only known from the type locality, and trawled from a blue muddy bottom.

Discussion. Another species with the same conchological characters of the left valve is *Cyclopecten vidalensis* Barnard, 1964, from off Zululand, South-Africa. This species has a finer sculpture with more concentric lamellae on the central part of the disc, and some rudimental internal lirae.

Cyclopecten (Cyclopecten) cf. incubans Barnard, 1964
(fig. 10)

Cyclopecten incubans Barnard, 1964: 432-433.

Cyclopecten incubans Barnard, 1969: 656, figs. 29a-c.

Material examined. SIBOGA stat. 133. Indonesia, Salibabu Island. Trawl, dredge and reef exploration. Towntet. 36 m. Muddy and hard sand bottom. 25-27.VII.1899. One left valve.

Distribution and ecology. *C. incubans* is known from the eastcoast of South-Africa (Indian Ocean), living on a muddy sand bottom from sublittoral to bathyal depth.

Remarks. *C. incubans* has almost the same morphological characters as the SIBOGA specimen, but subcircular and more coarsely sculptured, caused by some radial riblets. *C. cf. incubans* bears a cancellated structure near the ventral margin, caused by fine radiation and concentric lamellae.

Family Pectinidae Rafinesque, 1815

Hemipecten forbesianus A. Adams & Reeve, 1849
(figs. 11-12)

Hemipecten forbesianus A. Adams & Reeve, 1849: 133-134, pl. 1, fig. 2.

Material examined. SIBOGA stat. 144. Indonesia, Damar Island. Dredge, townet and reef exploration. 45 m. Coral bottom with

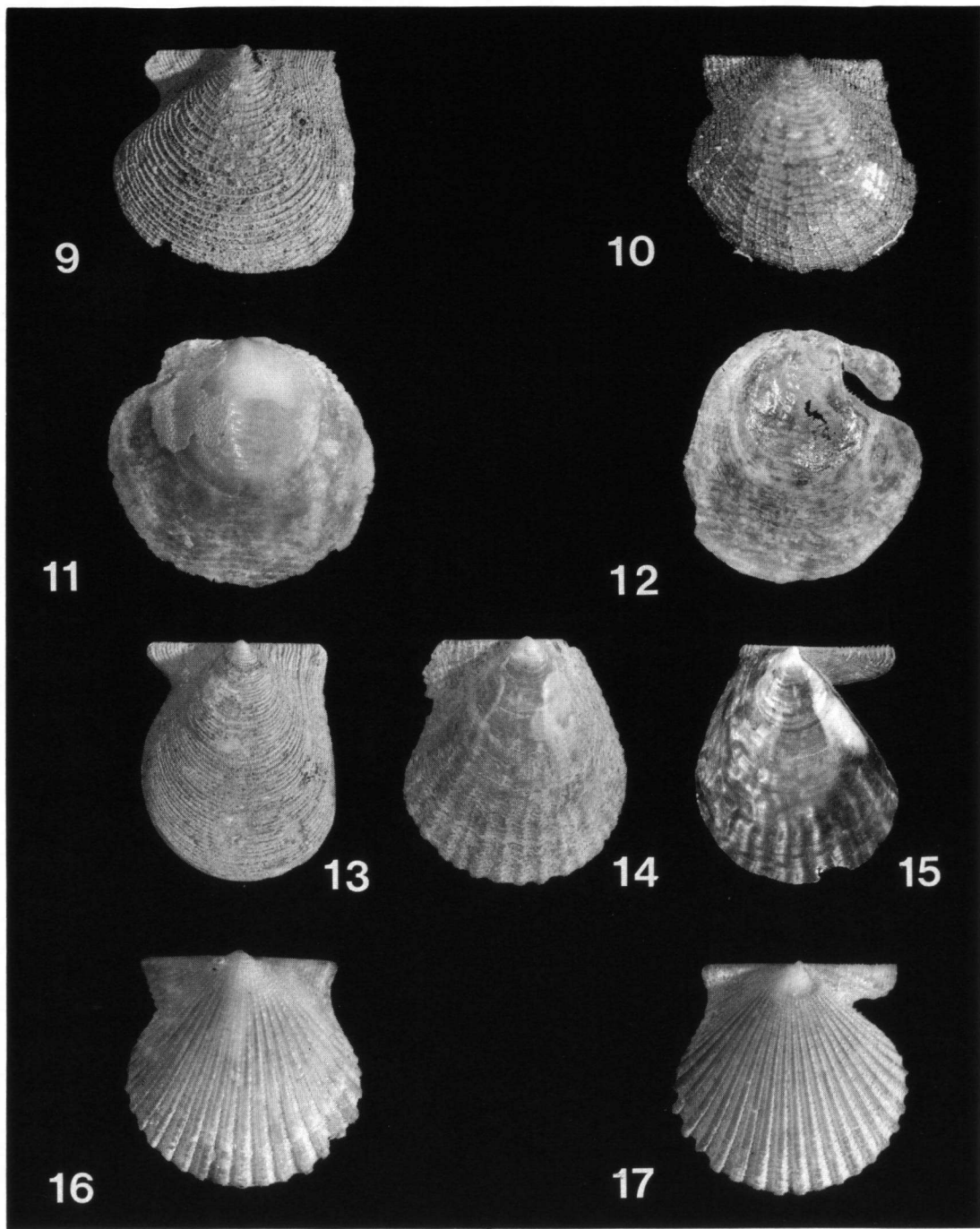


Plate II. Fig. 9. *Cyclopecten* (*Cyclopecten*) *bavayi* sp. nov., holotype. SIBOGA stat. 178. Left valve, exterior (5.1 \times). Fig. 10. *Cyclopecten* (*Cyclopecten*) cf. *incubans* Barnard, 1964, SIBOGA stat. 133. Left valve, exterior (11 \times). Figs. 11-12. *Hemipecten forbesianus* A. Adams & Reeve, 1849, SIBOGA stat. 144. Left valve, exterior (2.2 \times), and right valve, exterior (2.2 \times). Fig. 13. *Palliolum* (*Hyalopecten*) *tydemani* sp. nov., holotype. SIBOGA stat. 178. Left valve, exterior (4 \times). Figs. 14-15 *Pseudohinnites levii* Dijkstra, 1989, juvenile. SIBOGA stat. 300. Left valve, exterior (3.5 \times), and right valve, exterior (3.5 \times). Figs. 16-17. *Chlamys* (*Argopecten*) *rehderi* Grau, 1960, SIBOGA stat. 240. Left valve, exterior (7.8 \times), and right valve, exterior (7.8 \times).

Lithothamnion. 7-9.VIII.1899. One complete specimen, without soft parts (probably used by Pelseneer, 1911).

Distribution and ecology. Throughout the Indo-Pacific region. Live specimens are bysally attached to scleractinian corals, and usually covered by epiphytic growths on the left valve. Recorded from sublittoral depth.

Remarks. Dautzenberg & Bavay (1912) did not discuss this species, although Pelseneer (1911: 31) mentioned it: "Un seule espèce, *H. forbesianus*, représentée par un seul exemplaire, se trouvait dans les collections du SIBOGA" in his anatomical report.

Waller (1972: 256) stated that the only species of *Hemipecten* is morphologically distinct from other representatives of Pectinidae. Habe (1977: 88) placed the genus *Hemipecten* in a new subfamily Hemipectinae. *Semipecten* Fischer, 1886 (in Man. Conch., X: 945) is an invalid emendation for *Hemipecten* A. Adams & Reeve, 1849, with the same type species.

***Palliolum (Hyalopecten) tydemani* n. sp.**
(fig. 13)

Material examined. Holotype: one left valve. Measurements: height 9.1 mm, length 7.5 mm (ZMA Moll. no. 3.89.09).

Locus typicus. SIBOGA stat. 178. Indonesia, Ceram Sea, 2°40' S, 128°37'.5 E. Deep sea trawl. 835 m. Blue muddy bottom. 2.IX.1899.

Description. Shell small, approximately 10 mm in height, and 8 mm in length, somewhat convex and elongate of proportion. Anterior and posterior auricles subequal, umbonal angle about 85°. The valve has strongly developed irregular concentric lamellae on the entire external surface, curved on the auricles and near the anterior and posterior margin. Anterior auricle more curved than posterior, especially near the byssal sinus. Internal surface is opaque up to the pallial area, but near the ventral margin translucent, making the external concentric

lamellae visible. Hinge line straight with broad triangled resilial pit. No cardinal crurae are exposed.

Etymology. The species is named after Rear Admiral G. F. Tydeman (1858-1939), commander of H. M. SIBOGA.

Discussion. *Palliolum (Hyalopecten) graui* (Knudsen, 1970) from the east Pacific is more circular. It has a finer sculpture of concentric lamellae, which are less pronounced and not strongly curved, and there is a delicate radiating striation on the external surface of the left valve.

***Pseudohinnites levii* Dijkstra, 1989**
(figs. 14-15)

Pseudohinnites levii Dijkstra, 1989: 29-33, figs. 1-3.

Material examined. SIBOGA stat. 300. Indonesia, Savu Sea, 10°48'.6 S, 123°23'.1 E. Deep sea trawl. 918 m. Fine grey muddy bottom with some stones. 30.I.1900. One complete juvenile specimen, without soft parts.

Distribution and ecology. So far only known from New Caledonia and Indonesia. Material was collected from bathyal depth on a fine muddy and sandy bottom with gravel.

***Chlamys (Chlamys) aliae* Dijkstra, 1988**

Chlamys aliae Dijkstra, 1988: 16-18, ill.

Material examined. SIBOGA stat. 98. Philippines, Sulu Archipelago, 6°9' N, 120°21' E. Dredge. 350 m. Fine sandy bottom. 28.VI.1899. One left and one right valve.

Distribution and ecology. Currently only known from the Philippines and Indonesia. Material collected from 100-350 m depth on a sandy bottom with coral rubble.

Remarks. The species is distinct from *Chlamys deliciosa* (Iredale, 1939), the latter is smaller with more pronounced irregular radial costae.

Chlamys (Chlamys) deliciosa (Iredale, 1939)

Mimachlamys deliciosa Iredale, 1939: 350-351, pl. V, figs 22-22a.

Chlamys (Chlamys) princessae Kuroda, Habe & Oyama, 1971: 364, pl. 79, figs. 16-17.

Material examined. SIBOGA stat. 116. Indonesia, Minahassa Peninsula, west of Kuan-dang Bay entrance, 0°58'.5 N, 122°42'.5 E. Dredge, 72 m. Fine muddy sand bottom. 12.XI.1899. One left valve.

Distribution and ecology. Throughout the western Pacific. Material collected from sublittoral depth on a sandy bottom with coral rubble and sediments.

Chlamys (Chlamys) elsae Wagner, 1988

Chlamys (Chlamys) elsae Wagner, 1988: 37-39, 6 figs.

Material examined. SIBOGA stat. 204. Indonesia, northern entrance of Butung Strait, between islands of Wowoni and Butung, 4°20' S, 122°58' E. 20.IX.1899. One right valve.

Distribution and ecology. Known from Indonesia and Philippines. Material collected from sublittoral depth on a sandy bottom with coral rubble and sediments.

Chlamys (Chlamys) livida (Lamarck, 1819)

Pecten lividus Lamarck, 1819: 178.

Ostrea tegula Wood, 1828: 7, pl. 2, fig. 3.

Pecten foliaceus Quoy & Gaimard, 1835: 445, pl. LXXXI, figs. 4-6.

Scaechlamys livida peroniana Iredale, 1939: 354-355.

Material examined. SIBOGA stat. 59. Indonesia, Timor, western entrance Semau Strait, 10°22'.7 S, 123°16'.5 E. Dredge. 390 m. Coarse coral and bottom with small stones. 26.IV.1899. One left valve.

SIBOGA stat. 98. Philippines, Sulu Archipelago, 6°9' N, 120°21' E. Dredge. 350 m. Sandy bottom. 28.VI.1899. One left valve.

SIBOGA stat. 310. Indonesia, north of Sum-bawa, 8°30' S, 119°7'.5 E. Dredge. 73 m. Sandy bottom with few pieces of dead coral. 12.II.1900. One specimen.

Distribution and ecology. Throughout the western Pacific to New Caledonia. Live collected material from littoral depth on sandy or muddy sand bottom, and bysally attached on coral boulders.

Remarks. Dead collected SIBOGA material from rather deep water has the conchological structure finer than typical material from eastern Australia. Related species are *C. lemniscata* (Reeve, 1853) from the western Indian Ocean, which lacks the shagreen micro-structure, and *C. squamata* (Gmelin, 1791) from the western Pacific.

Iredale (1939: 162) described *Scaechlamys*, type species *Pecten lividus* Lamarck, but Hertlein (1969: N355) considered it a synonym of *Chlamys* s.s.

Chlamys (Argopecten) singaporina (Sowerby II, 1842)

Pecten singaporinus Sowerby II, 1842: 74, pl. XIII, fig. 55; pl. XIV, fig. 71.

Material examined. SIBOGA stat. 64. Indonesia, Kamaragi Bay, Tanah Djampeah. Trawl, dredge and shore exploration, up to 32 m. Coral sand bottom with corals. 4-5.V.1899. One right valve.

Distribution and ecology. Throughout southwest Pacific to northern region of Australia. Living in the intertidal zone and shallow water on muddy or muddy sand bottoms.

Semipallium (Semipallium) oweni (Gregorio, 1884)

Pecten pictus Sowerby II, 1842: 62, pl. 20, fig. 233 (non *P. pictus* Da Costa, *P. pictus* Bolten, *P. pictus* Deshayes in Labordes, *P. pictus* Goldfuss).

Pecten (Chlamys) oweni Gregorio, 1884: 133 (nom. nov.).

Material examined. SIBOGA stat. 248. Indonesia, anchorage off Rumah Lusi, northpoint of Tiur Island. Dredge, townet and reef exploration, to 54 m. 4-5.XII.1899. One left valve.

Distribution and ecology. Throughout the western Pacific. Living in shallow water on a sandy bottom between coral rubble.

TABLE I. Summary of mentioned and described taxa according to the system proposed by Hertlein (1969).

Family Propeamussiidae	<i>Chlamys</i> (<i>Chlamys</i>) <i>cruentata</i> (Reeve, 1853)
<i>Propeamussium</i> (<i>Propeamussium</i>) <i>caducum</i> (E. A. Smith, 1885)	<i>Chlamys</i> (<i>Chlamys</i>) <i>deliciosa</i> (Iredale, 1939)
<i>Propeamussium</i> (<i>Propeamussium</i>) <i>meridionale</i> (E. A. Smith, 1885)	<i>Chlamys</i> (<i>Chlamys</i>) <i>elsae</i> Wagner, 1988
<i>Propeamussium</i> (<i>Propeamussium</i>) <i>sibogai</i> (Dautzenberg & Bavay, 1904)	? <i>Chlamys</i> (<i>Chlamys</i>) <i>hindsii</i> (Carpenter, 1864) = <i>livida</i> (Lam.)
<i>Propeamussium</i> (<i>Propeamussium</i>) <i>siratama</i> (Oyama, 1951)	<i>Chlamys</i> (<i>Chlamys</i>) <i>irregularis</i> (Sowerby II, 1842)
<i>Propeamussium</i> (<i>Propeamussium</i>) <i>weberi</i> (Dautzenberg & Bavay, 1912)	<i>Chlamys</i> (<i>Chlamys</i>) <i>jousseumei</i> Bavay, 1904
= <i>caducum</i> (Smith)	<i>Chlamys</i> (<i>Chlamys</i>) <i>lemniscata</i> (Reeve, 1853)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>dautzenbergi</i> n.sp.	<i>Chlamys</i> (<i>Chlamys</i>) <i>lentiginosa</i> (Reeve, 1853)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>crisatellum</i> (Dautzenberg & Bavay, 1912)	<i>Chlamys</i> (<i>Chlamys</i>) <i>limatula</i> (Reeve, 1853)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>ina</i> (Dautzenberg & Bavay, 1912)	<i>Chlamys</i> (<i>Chlamys</i>) <i>livida</i> (Lamarck, 1819)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>lacteam</i> (Dautzenberg & Bavay, 1912)	<i>Chlamys</i> (<i>Chlamys</i>) <i>pelseneeri</i> (Dautzenberg & Bavay, 1912)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>margaritiferum</i> (Dautzenberg & Bavay, 1912)	= <i>cloacata</i> (Rve)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>scitulum</i> (E. A. Smith, 1885)	<i>Chlamys</i> (<i>Chlamys</i>) <i>pseudolima</i> (Sowerby II, 1842)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>texturatum</i> (Dautzenberg & Bavay, 1912)	<i>Chlamys</i> (<i>Chlamys</i>) <i>quadrilirata</i> (Lischke, 1870)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>torresi</i> (E. A. Smith, 1885)	? <i>Chlamys</i> (<i>Chlamys</i>) <i>saniosa</i> (Reeve, 1853) = ? <i>lentiginosa</i> (Rve)
<i>Propeamussium</i> (<i>Parvamussium</i>) <i>zoniferum</i> (Dautzenberg & Bavay, 1912)	<i>Chlamys</i> (<i>Chlamys</i>) <i>senatoria</i> (Gmelin, 1791)
<i>Cyclopecten</i> (<i>Cyclopecten</i>) <i>bavayi</i> n.sp.	<i>Chlamys</i> (<i>Chlamys</i>) <i>squamata</i> (Gmelin, 1791)
<i>Cyclopecten</i> (<i>Cyclopecten</i>) cf. <i>incubans</i> Barnard, 1964	<i>Chlamys</i> (<i>Chlamys</i>) <i>squamosa</i> (Gmelin, 1791)
Family Pectinidae	<i>Chlamys</i> (<i>Chlamys</i>) <i>wilhelminae</i> Bavay, 1904
<i>Amusium pleuronectes</i> (Linnaeus, 1758)	<i>Chlamys</i> (<i>Annachlamys</i>) <i>macassarensis</i> (Chenu, 1845)
<i>Hemipecten forbesianus</i> A. Adams & Reeve, 1849	<i>Chlamys</i> (<i>Annachlamys</i>) <i>reevei</i> (A. Adams & Reeve, 1850)
<i>Palliolium</i> (<i>Delectopecten</i>) <i>micaceum</i> (Dautzenberg & Bavay, 1912)	? <i>Chlamys</i> (<i>Argopecten</i>) <i>aquisulcata</i> (Carpenter, 1864) = <i>rehderi</i> Grau
<i>Palliolium</i> (<i>Delectopecten</i>) <i>musorstomi</i> (Poutiers, 1981)	<i>Chlamys</i> (<i>Argopecten</i>) <i>inaequivalvis</i> (Sowerby II, 1842)
<i>Palliolium</i> (<i>Delectopecten</i>) <i>translucens</i> (Dautzenberg & Bavay, 1912)	<i>Chlamys</i> (<i>Argopecten</i>) <i>rehderi</i> Grau, 1960
<i>Palliolium</i> (<i>Delectopecten</i>) <i>vitreus</i> (Schröter, 1788)	<i>Chlamys</i> (<i>Argopecten</i>) <i>singaporina</i> (Sowerby II, 1842)
= <i>musorstomi</i> (Poutiers)	<i>Chlamys</i> (<i>Cryptopecten</i>) <i>nux</i> (Reeve, 1853)
<i>Palliolium</i> (<i>Hyalopecten</i>) <i>tydmani</i> n.sp.	<i>Chlamys</i> (<i>Cryptopecten</i>) <i>bullata</i> (Dautzenberg & Bavay, 1912)
<i>Pseudohinnites levii</i> Dijkstra, 1989	<i>Chlamys</i> (<i>Cryptopecten</i>) <i>pallium</i> (Linnaeus, 1758)
<i>Chlamys</i> (<i>Chlamys</i>) <i>albolineata</i> (Sowerby II, 1842)	<i>Chlamys</i> (<i>Cryptopecten</i>) "vesiculosa" (Dunker, 1877) = <i>nux</i> (Rve)
<i>Chlamys</i> (<i>Chlamys</i>) <i>aliae</i> Dijkstra, 1988	<i>Chlamys</i> (<i>Juxtamussium</i>) <i>coudeini</i> (Bavay, 1903)
<i>Chlamys</i> (<i>Chlamys</i>) <i>asperulata</i> (A. Adams & Reeve, 1850)	<i>Decatopecten</i> (<i>Decatopecten</i>) <i>subplicatus</i> (Sowerby II, 1842)
<i>Chlamys</i> (<i>Chlamys</i>) <i>blanda</i> (Reeve, 1853) = <i>pseudolima</i> (Sow. II)	<i>Semipallium</i> (<i>Semipallium</i>) <i>dringi</i> (Reeve, 1853) (pro parte)
<i>Chlamys</i> (<i>Chlamys</i>) <i>cloacata</i> (Reeve, 1853)	<i>Semipallium</i> (<i>Semipallium</i>) <i>fulvicostatum</i> (A. Adams & Reeve, 1850)
	<i>Semipallium</i> (<i>Semipallium</i>) <i>oweni</i> (Gregorio, 1884)
	<i>Semipallium</i> (<i>Semipallium</i>) <i>radula</i> (Linnaeus, 1758)
	<i>Semipallium</i> (<i>Semipallium</i>) <i>vexillum</i> (Reeve, 1853)
	<i>Semipallium</i> (<i>Semipallium</i>) <i>wardiana</i> (Iredale, 1939)
	<i>Semipallium</i> (<i>Excellichlamys</i>) <i>histrionicum</i> (Gmelin, 1791)
	<i>Semipallium</i> (<i>Excellichlamys</i>) <i>spectabile</i> (Reeve, 1853)
	<i>Pecten</i> (<i>Pecten</i>) <i>tricarinatus</i> Anton, 1839
	<i>Pecten</i> (<i>Minnivola</i>) <i>pyxidatus</i> (Born, 1778)

Remarks. A related species is *Bractechlamys vexillum* (Reeve, 1853) from the Philippines. Hertlein (1969: N366) treated this genus as a synonym of *Semipallium* Jousseaume in Lamy, 1928.

ADDITIONS AND CORRECTIONS

Here are discussed the additional material and the corrections to the previous report by Dautzenberg & Bavay (1912).

Family Propeamussiidae

Propeamussium (Propeamussium) caducum (E. A. Smith, 1885)

Amussium Weberi Dautzenberg & Bavay, 1912: 32-33.

Material from station 314 is now present in KBIN (one specimen, four valves), and in MCZ (two valves). Two paratypes (two valves) are present in RMNH.

Knudsen (1967: 274-276) studied *P. caducum*, and concluded that *P. weberi* is a junior synonym.

Propeamussium (Parvamussium) ina (Dautzenberg & Bavay, 1912)

Amussium Ina Dautzenberg & Bavay, 1912: 32.

Stat. 312. Instead of four valves, three specimens are present in ZMA.

Family Pectinidae

Amusium pleuronectes (Linnaeus, 1758)

Amussium pleuronectes; Dautzenberg & Bavay (1912: 34-35).

Stat. 1. Two specimens and seven valves, of which two valves were sent to MCZ.

Stat. 2. Three valves instead of two are present in ZMA.

Stat. 33. One specimen present in ZMA (alcohol).

Stat. 206. Four valves instead of two are present in ZMA.

Stat. 213. Four valves of which one in RMNH.

Stat. 294. One specimen, and 37 in alcohol preserved specimens, of which 5 were sent to MCZ.

Stat. 296. Three specimens are present in ZMA (alcohol).

Stat. 299. Three specimens in ZMA (alcohol).

Stat. 311. Two specimens in ZMA (alcohol).

Stat. 318. One valve and one alcohol specimen in ZMA.

Material of the stations 33, 294, 296, 299, 311 and 318 was identified by Dr. W. S. S. van Benthem Jutting (IX.1938).

Palliolum (Delectopecten) musorstomi (Poutiers, 1981)

Pecten (Cyclopecten) vitreus (Chemnitz) Schröter; Dautzenberg & Bavay (1912: 27-29).

The species of stat. 262 is recently described by Poutiers (1981), thus *P. vitreus* was a misidentification. *P. musorstomi* is less sculptured with a different microstructure.

The indication, mentioned by station 262 in the previous report (Dautzenberg & Bavay, 1912), is wrong and belongs to station 261.

Chlamys (Chlamys) cloacata (Reeve, 1853)

Pecten cloacatus Reeve, 1853: pl. 34, spec. 166.

Pecten (Chlamys) pelseneeri Dautzenberg & Bavay, 1912: 8.

Stat. 2. One left valve and two right valves.

Stat. 19. One right valve.

Stat. 47. One right valve.

Stat. 53. One right valve.

Stat. 71. One left valve and one right valve.

Stat. 98. One juvenile specimen and one right valve.

Stat. 116. One right valve.

All additional material present in ZMA.

Remarks. Dautzenberg & Bavay overlooked *Chlamys cloacata*, which is in all aspects similar to

Pecten rugosus Sowerby II, 1842. The interstitial reticulated microscopic sculpture is characteristic for this species.

***Chlamys (Chlamys) deliciosa* (Iredale, 1939)**

Pecten (Chlamys) asperulatus; Dautzenberg & Bavay (1912: 11). The material of station numbers 80, 125 and 305 is *Chlamys deliciosa*.

Chlamys asperulata is closely related to *Chlamys cloacata* (Reeve, 1853), but larger of dimension and with a different sculpture and micro-sculpture.

***Chlamys (Chlamys) irregularis* (Sowerby II, 1842)**

Pecten (Chlamys) irregularis; Dautzenberg & Bavay (1912: 13).

Stat. 240. One specimen in RMNH.

***Chlamys (Chlamys) lentiginosa* (Reeve, 1853)**

Pecten (Chlamys) cruentatus var. *lentiginosa*; Dautzenberg & Bavay (1912: 9-10).

Stat. 71. One right valve (ZMA).

Pecten saniosus Reeve, 1853, is very similar to *Pecten lentiginosus* Reeve, 1853, and perhaps only a synonym.

***Chlamys (Chlamys) livida* (Lamarck, 1819)**

?*Pecten (Chlamys) Hindsii*; Dautzenberg & Bavay (1912: 12).

The identification of *P. hindsii* was indeed doubtful, because this species from the westcoast of America is not living in the Indo-Pacific region.

The specimen of stat. 37 is a juvenile *Chlamys livida* (Lamarck). The specimen of stat. 105 may represent a new species of *Chlamys*.

***Chlamys (Chlamys) quadrilirata* (Lischke, 1870)**

Pecten (Chlamys) quadriliratus; Dautzenberg & Bavay (1912: 4).

Stat. 116. Four left valves and three right valves are present in ZMA.

***Chlamys (Chlamys) senatoria* (Gmelin, 1791)**

Pecten (Chlamys) senatorius; Dautzenberg & Bavay (1912: 4-8).

Stat. 59. One left valve (ZMA).

Stat. 164. One juvenile specimen (RMNH), and two valves in MCZ. One additional juvenile left valve in ZMA.

Remarks. *Pecten pseudolima* Sowerby, 1842, and *Pecten blandus* Reeve, 1853, are synonyms, and belong to the "senatoria-complex", which is still under study.

***Chlamys (Chlamys) squamosa* (Gmelin, 1791)**

Pecten (Chlamys) squamosus; Dautzenberg & Bavay (1912: 14-16).

Stat. 240. One specimen in RMNH.

Stat. ? One specimen without a station number is also present in ZMA, with the locality "Banda".

***Chlamys (Annachlamys) macassarensis* (Chenu, 1845)**

Pecten (Aequipecten) macassarensis; Dautzenberg & Bavay (1912: 21-22).

Stat. 51. One valve (ZMA).

***Chlamys (Argopecten) rehderi* Grau, 1960 (figs. 16-17)**

?*Pecten (Aequipecten) aequisulcatus*; Dautzenberg & Bavay (1912: 19).

Material from both stations are *Chlamys rehderi*, which species was described from the Indo-Pacific region after publication of the Siboga Report. Dautzenberg & Bavay compared their material with the westamerican *Chlamys (Argopecten) circularis aequisulcata* (Carpenter, 1864). Juveniles of the latter subspecies are indeed very similar to *Chlamys rehderi*.

Chlamys (Cryptopecten) nux (Reeve, 1853)

Pecten (Aequipecten) nux; Dautzenberg & Bavay (1912: 23-24).

Stat. 93. One valve in ZMA.

Stat. 98. Eight valves, of which four valves were sent to RMNH, and four are present in ZMA.

Remarks. The material from all stations mentioned under *Pecten (Aequipecten) vesiculosus* by Dautzenberg & Bavay (1912: 22) is now identified as *Chlamys nux*.

Hayami (1984: 11) observed many specimens of *C. vesiculosa* (Dunker, 1877) and concluded that the southern limit of distribution is about 20° N.

Stat. 49. Two right valves instead of one specimen are present in ZMA.

Chlamys (Cryptopecten) pallium (Linnaeus, 1758)

Pecten (Aequipecten) pallium; Dautzenberg & Bavay (1912: 19-20).

Stat. 66. Three valves (ZMA).

Semipallium (Semipallium) fulvicostatum (A. Adams & Reeve, 1850).

Pecten (Chlamys) fulvicostatus; Dautzenberg & Bavay (1912: 16-17).

Stat. 164. An additional valve is present in ZMA, and another valve sent to RMNH.

Semipallium (Semipallium) radula (Linnaeus, 1758)

Pecten (Pallium) radula; Dautzenberg & Bavay (1912: 24-26).

Stat. 64. Only one valve instead of one specimen is present in ZMA.

Semipallium (Semipallium) vexillum (Reeve, 1853)

Pecten (Pallium) vexillum; Dautzenberg & Bavay (1912: 26).

Stat. 43. One specimen in RMNH.

Semipallium (Semipallium) wardiana (Iredale, 1939)

Pecten dringi Reeve, 1853, pro parte.

Material of *Semipallium fulvicostatum* from stations 50 and 164 in Dautzenberg & Bavay (1912: 16-17) are presently identified as *S. wardiana*, which species lacks the shagreen microsculpture. It was placed by Iredale in *Complicachlamys*, of which *S. wardiana* is the type species.

Semipallium (Excellichlamys) spectabile (Reeve, 1853)

Pecten (Aequipecten) histrionicus Gmelin var. *parva*; Dautzenberg & Bavay (1912: 23).

The two left valves are typical *S. spectabile*. The binomen *Pecten parvus* Sowerby, 1835, is preoccupied by *Pecten parvus* Da Costa, 1778.

Pecten (Pecten) tricarinatus Anton, 1839

Pecten tricarinatus; Dautzenberg & Bavay (1912: 3).

Stat. 116. One left valve (RMNH).

Stat. 318. Two left valves (ZMA).

Pecten (Minnivola) pyxidatus Born, 1778

Pecten pyxidatus; Dautzenberg & Bavay (1912: 3-4).

Stat. 71. Four valves (RMNH), and two valves (MCZ).

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