

**Five new *Vexillum* (*Costellaria*) species from various
Indo-Pacific locations and remarks on
Vexillum (*Costellaria*) *perrieri* (Dautzenberg, 1929)
(Neogastropoda: Muricoidea: Costellariidae)**

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ABSTRACT. Five costellarid species are described as new to science, among them *Vexillum* (*Costellaria*) *leucophryna* n. sp. and *V. (C.) vespula* n. sp. exclusively from deep water off the Philippines. *V. (C.) pyropus* n. sp. is described from South Africa, Reunion Island, Philippines and Ogasawara Islands (Japan); it is compared with *V. (C.) macandrewi* (Sowerby, 1874). *V. (C.) stossieri* n. sp. was hitherto solely found off South Africa (100–120 m) and is distinguished from *V. (C.) hilare* (Kuroda & Habe, 1971) and *V. (C.) nodai* Turner & Salisbury, 1999. *V. (C.) vicmanoui* n. sp. is recorded from the southern and central Philippines as well as from the Ogasawara and Ryukyu Islands; it is compared with *V. (C.) takakuwai* Cernohorsky & Azuma, 1974, *V. (C.) acupictum* (Reeve, 1844), *V. (C.) choslenae* Cernohorsky, 1982, *V. (C.) elliscrossi* Rosenberg & Salisbury, 1991, and *V. (P.) cithara* (Reeve, 1845). The widely neglected *V. (C.) perrieri* (Dautzenberg, 1929) is probably a valid taxon which replaces *Mitra turricula* A. Adams, 1853, a junior homonym, which was originally described from unknown locality, but has turned out to live in shallow water (1–30 m) of several Indo-West Pacific locations (Mozambique to the Fiji Islands); it is differentiated from *V. (C.) turriger* (Reeve, 1845) and *V. (C.) humile* (Hervier, 1879).

ABBREVIATIONS

AIM: Auckland Institute and Museum, Auckland, New Zealand.

ANSP: Academy of natural Sciences, Philadelphia, U. S. A.

BMNH: Natural History Museum, London, United Kingdom.

HUJ: Hebrew University Jerusalem, Israel.

IRSNB: Institut royal des Sciences naturelles de Belgique, Brussels, Belgium.

MHNG: Muséum d'Histoire naturelle, Genève, Suisse.

MNHN: Muséum national d'Histoire naturelle, Paris, France

NMSA: Natal Museum, Pietermaritzburg, S. Africa.

NSMT: National Science Museum, Tokyo, Japan.

SYSTEMATICS

Family **COSTELLARIIDAE** Macdonald, 1860

Genus *Vexillum* Röding, 1798

Subgenus *Costellaria* Swainson, 1840

Type species by monotypy: *Mitra rigida* Swainson, 1821 = *Mitra semifasciata* Lamarck, 1811 =

Vexillum (*Costellaria*) *semifasciatum* (Lamarck).
Recent. Indo-Pacific.

Vexillum (*Costellaria*) *leucophryna* n. sp.
Figures 1–2

Type material.

Holotype (Fig. 1): 16.2 x 5.6 mm, aperture length 8.2 mm; at the type locality taken alive; donated by Emmanuel G. de Suduiraut, February 1999; deposited in MHNG (#29813). Paratype #1: 16.9 x 5.9 mm, aperture 7.9 mm; from the type locality; ex coll. E. G. de Suduiraut, deposited in MNHN. Paratype #2: 16.6 x 5.9 mm, aperture 7.8 mm; from the Philippines, Bohol, off Panglao, caught by shell net, July 1991; in coll. M. P. Marrow. Paratype #3: 16.9 x 6.0 mm, aperture 8.2 mm; from the type locality, 1997; in coll. H. Turner. Paratype #4: 16.1 x 5.9 mm, aperture 7.2 mm; from the type locality; in coll. E. G. de Suduiraut (Lapu Lapu City, Cebu, Philippines). Paratype #5 (Fig. 2): 15.3 x 6.1 mm, aperture 7.8 mm; from the type locality; in coll. H. Turner. Paratype #6: 14.6 x 5.8 mm, aperture 7.2 mm; from the Philippines, Cebu, inside the canal of Mactan Island and Sta. Rosa Island, in 80 to 100 m depth, caught by tangle net on rocky sand; in coll. H. Turner. Paratype #7: 17.2 x 6.0 mm, aperture

8.5 mm; from the Philippines, Cebu, Mactan; in coll. J. C. Martin (189 rue Jean Chatel, 97400 Saint Denis, Reunion). Paratype #8: 16.1 x 5.9 mm, aperture 8.0 mm; from the Philippines, Cebu, Mactan; in coll. J. C. Martin. Paratype #9: 17.3 x 6.6 mm, aperture 8.0 mm; from the Philippines, Magellan Bay, November 1983, donated by Sabine Sommer; in coll. H. Turner. Paratype #10: 15.9 x 5.9 mm, aperture 7.0 mm; from the Philippines, N. Mindanao, Dipolog, Aliguay Island, in 275 m, trawled, in coll. M. Chino.

Type locality.

Off Balicasag Island, Bohol, Philippines, in 140 to 160 m depth, caught by tangle net, on sand.

Distribution and habitat.

Philippine Islands. Deep water 80 m to 275 m, on a sand substrate.

Etymology.

The specific name is a feminine substantive in apposition to generic names, identical with the ancient Greek proper name *λευκοφρυνα* (Latin: *leucophryna* = 'with white eyebrows', epithet of the goddess Diana), referring to few white zones on an otherwise brown shell, a typical character of this new species.

Description.

Shell of moderate size, to 18 mm in length, width 34–40% of shell-length in adult specimens, fusiform in shape. Protoconch involute-paucispiral, consisting of 2–2 ½ convex, smooth, translucent-colourless embryonic whorls. Teleoconch of 8–9 rather flat-sided and axially ribbed whorls; sutures distinct. Axial ribs slender, with elevated smooth crest, rather widely spaced, distinct on all spire whorls, becoming obsolete only on the body whorl near the outer lip; ribs number 14–16 on early spire whorls, 15–17 on the penultimate and 14+ on the body whorl. Interstices of the ribs flatly V-shaped, articulated by 6–8 distinct spiral grooves on the spire whorls. Body whorl with 21–23 spiral grooves; the lowest 4–5 spiral grooves on the base bisect the axial ribs, producing a few weak crenulated spiral cords. Aperture approximately as long as the spire (45–51% of shell-length), narrow, elongated and constricted anteriorly at the siphonal canal; outer lip simple and smooth, with 12–14 slender lirations within. Inner lip as well as columellar callus indistinct; within the posterior aperture angle a rather weak wedge-shaped callus; columella with 4 plicae decreasing in size anteriorly; siphonal canal rather long and straight, weakly dorsally recurved, with indistinct anal notch; siphonal fasciole in continuation of the columellar folds consists of four oblique rolls.

Colour pattern: Shell predominantly brown, but first 3 spire whorls are white in most specimens. The last two or three whorls show a peculiar white subsutural zone comprising 2–3 spirals. A second white spiral zone, comprising 2–4 spirals, is developed subperipherally on the lower body whorl, situated just below the posterior aperture angle; this subperipheral white zone is the most constant character of the colour pattern, even present in dark colour variants where the brown shell colour extends to the apex and the subsutural zone. A third light-coloured spiral zone is more or less distinct in most specimens just at the periphery of the body whorl and some spire whorls. (This peripheral zone is weakly expressed e.g. in the holotype and in paratypes #1 & #5, but very distinct in paratypes #4, #8, etc.). Axial ribs whitish or at least lighter brown than their interstices. Shell base and columella uniformly brown, columellar folds light brown to whitish. Outer lip brown with 2–3 white interruptions according to the mentioned white spiral zones. Aperture white within. (Paratype #7 uniformly brown except the subperipheral white zone.)

Discussion.

The typical colour pattern of the new species: white apex versus three white zones (subsutural, peripheral and subperipheral) as well as whitish axial ribs on an otherwise brown body whorl, does not have an equivalent in any known Costellariidae species. This allows an identification at first glance of most specimens. Dark colour variants where the brown colouration extends to the apex and subsutural or peripheral zone, only one subperipheral zone left white, may easily be identified when characters of size, shape and sculpture are considered as well. Especially the widely spaced axial ribs with smooth ridges and the extended shell base with stretched and notchless siphonal canal allow in any case a distinction from superficially similar species like *Vexillum* (*Costellaria*) *amandum* (Reeve, 1845), *V. (C.) collinsoni* (A. Adams, 1864), *V. (C.) virgo* (Linnaeus, 1767), or *V. (Pusia) daedalum* (Reeve, 1845). *V. (C.) amandum* is smaller, lacks the extended shell base, does not have smooth axial ribs but crenulous ones which are bisected by more numerous spiral grooves, has a very distinct siphonal notch, and differs also by a white shell with up to three rather narrow brown spiral bands on the body whorl. *V. (C.) collinsoni* is equal in size and has similar axial ribs with smooth ridges, but its shell is more slenderly shaped, its base is more truncated with distinct siphonal notch, and its colouration differs by lacking a white apex and a white subsutural band, differing also in having a broad whitish peripheral zone with a thin brown spiral thread in its centre. *V. (C.) virgo* is of similar size, shows quite often a similar brown ground colour, its axial ribs being frequently lighter coloured to whitish like in *V. (C.) leucophryna*, but its shell is much more truncated, in particular lacks an extended base, the whorls are distinctly shouldered at the sutures, the body whorl is not so evenly rounded but distinctly cylindrical. Moreover *V. virgo* does not have smooth

axial ribs but transversely grooved ones. Also the colour pattern of *V. virgo* deviates strongly as no white apices nor white subsutural bands occur, and instead of the constant subperipheral white zone of *leucophyra* most frequently only one white zone in the centre of the spire whorls, in the upper part of the body whorl respectively, is developed. *V. (P.) daedalum* resembles the new species likewise by similar size and brown/white pattern, but differs clearly through its more squat shape and the colour pattern with brown apex and only one broad (peripheral) white spiral zone.

Vexillum (Costellaria) vespula n. sp.

Figure 3

Type material.

Holotype (Fig. 3): 12.1 x 4.6 mm, aperture length 5.0 mm, last whorl of protoconch preserved; at the type locality taken fresh dead; donated by Maxwell P. Marrow; deposited in MHNG (#29814). Paratype #1: 11.5 x 4.3 mm, aperture 4.9 mm, protoconch and part of lip broken off; from the type locality; in coll. M. P. Marrow. Paratype #2: 10.4 x 4.2 mm, aperture 4.8 mm, part of protoconch preserved; from the Philippines, Cebu area, Bohol Strait, shell nets, probably deep water, July 1991; in coll. H. Turner. Paratype #3: 11.0 x 4.7 mm, aperture 5.1 mm, apex and lip broken; same collection data as paratype #2; in coll. M. P. Marrow.

Type locality.

Off Panglao Island, Bohol, Philippines, by shell nets, probably deep water (about 80/140 m).

Distribution and habitat.

Bohol Strait off Panglao and Cebu, Central Philippine Islands. Deep water, on a sand and mud substrate.

Etymology.

The specific name *vespula* is a Latin feminine substantive (in apposition to generic names) and means 'small wasp' (*deminutivum* of *vespa*), referring to the striking and unique yellow/dark-brown striped colour pattern and to conspicuous insect-like spiral indentations of the shell.

Description.

Shell relatively thin, small, to 12–13 mm in length, width 38% of shell-length in adult specimens, fusiform in shape, surface shining. Protoconch incomplete on specimens examined and consisting of 1+ convex, dull, light brown embryonic whorl; probably the protoconch is of the papillose-paucispiral type. Teleoconch of 6–7 convex and

axially ribbed whorls; sutures distinct; sculptured with strong and smooth axial ribs, distinct on all spire whorls, becoming more slender and narrowly spaced on the body whorl near the outer lip; ribs number 14–16 on early spiral whorls, 19–21 on the penultimate whorl and 25–27 on the body whorl; interstices V-shaped. On the early whorls there occurs a single distinctive spiral groove, located closely below the suture; on the lower part of the last two spiral whorls, a second spiral groove is present, located closely above the suture; five additional spiral grooves occur on the lower part of the body whorl (apart from the siphonal fasciole). All spiral grooves bisect the axial ribs; the lowest 2–3 spiral grooves are very deep and wide, intersection with the axial ribs produce 2–3 strongly nodulous spiral cords. Besides the mentioned (comparatively few) spiral grooves, the ribs as well as their interstices are smooth, showing only very faint axial growth lines. Aperture shorter than the spire (41–42% of shell-length in adult specimens), narrow, only slightly constricted anteriorly; outer lip simple and smooth, with 12–14 nodulous slender lirations within; outer lip distinctly recurved at the posterior end; parietal side of aperture slightly glazed with a thin translucent callus, and a distinctive elevated wedge-shaped callus just adjoining the posterior aperture angle, this callus tapering off and becoming pointed more inside the aperture; inner lip thin as is the whole parietal callus; columella with 4 plicae decreasing in size anteriorly; siphonal canal short and slightly recurved to the dorsal side, anal notch distinct and moderately deep and wide; siphonal fasciole in continuation of the three lower columellar folds consists of two oblique rolls separated by a groove.

Colour pattern: Shell ground yellow; spire whorls with two broad yellow spiral zones where the interstices of the axial ribs are accentuated by dark brown, both zones separated by a distinctive white peripheral zone throughout; lower half of body whorl with a second white band just below the level of the posterior aperture angle; two broad grooves of the siphonal fasciole and interstices of the columellar folds also flared with dark brown; outer lip and aperture within the outer lip predominantly dark brown, with two white interruptions reflecting the two white spiral zones of the body whorl.

Discussion.

There is no known costellarid species which closely resembles *V. (C.) vespula*. Slightly similar in colour pattern is *Vexillum (Pusia) discolorium* (Reeve, 1845) (Fig. 4), but this Indo-Pacific species, occurring also in the Philippines, is more globose in shape, has fewer and broader axial ribs, which are crenelated by more numerous spiral grooves. In addition, the blotches between the axial ribs on the upper parts of the whorls of *V. (P.) discolorium* are black and extend onto the suture, whereas in *V. (C.) vespula* the relevant spots are brown and constantly keep distant from the suture. In some aspects of colour pattern, *V. (C.) vespula* resembles *V. (C.) malcolmense* (Melvill & Standen, 1901); the latter Indo-Pacific species, ranging from the

Red Sea to Samoa, not known from the Philippines, is however quite different in sculpture, showing a distinctly subangulate and nodulous shoulder of the whorls, the ribs and their interspaces on the spire whorls being articulated by deep spiral grooves, resulting in a rough and crispy shell, contrasting distinctly to the almost smooth spire ribs of *V. (C.) vespula*. In addition, both species differ in colour pattern: in *V. (C.) malcolmense* the upper spiral band of brown blotches in the interspaces of the axial ribs is situated just at the suture (not distant from the suture like in *V. vespula*), whereas the lowest of the three spiral bands of intercostate blotches on the body whorl is quite narrow, leaving the shell base whitish (no brown shell base like in *V. vespula*).

V. (C.) vespula may not be confused with *Mitra armillata* Recve, 1845, a synonym of *Vexillum (Costellaria) virgo* (Linnaeus, 1767). The lectotype of *M. armillata*, illustrated by Turner (1994: 104-105, T. 2, F. 7; 1997, 30, pl. 6, fig. 7), resembles *V. (C.) vespula* remotely in colour pattern, but shows a brown shell ground (in contrast to the yellow shell ground of *vespula*) and lacks a second white spiral band on the lower half of the body-whorl. *M. armillata* differs also clearly in details of shape and sculpture, the spire being distinctly stepped with protruding shoulder of the whorls, showing more numerous spiral grooves on all parts of the whorls.

***Vexillum (Costellaria) pyropus* n. sp.**

Figures 5–6

Vexillum (Costellaria) cf. *macandrewi* (Sowerby):
Turner, 1993: 94, Taf. 2, Fig. 15.

Type material.

Holotype (Fig. 5): 23.3 x 8.2 mm, aperture length 10.4 mm; at the type locality collected alive; ex coll. E. G. de Suduiraut (#1164); deposited in MHNG (#29815). Paratype #1: 23.7 x 8.2 mm, aperture 10.6 mm; Philippines, Bohol, off Panglao, shell nets, July 1991; ex coll. M. P. Marrow;

deposited in NMSA (L5230/T1763). Paratype #2 (Fig. 6): 18.7 x 6.7 mm, aperture 8.2 mm; South Africa, N. Zululand, off Boteler Point (27°01.2'S, 32°54.2'E), dredged by R. V. Meiring Naudé, 6 June 1987; NMSA (D7745). Paratype #3: 22.6 x 7.9 mm, aperture 9.4 mm; type locality; in coll. H. Turner. Paratype #4: 18.9 x 6.8 mm, aperture 8.6 mm; type locality; in coll. H. Turner. Paratype #5: 18.5 x 6.8 mm, aperture 8.3 mm, apex broken; type locality; in coll. H. Turner. Paratype #6: 19.5 x 7.0 mm, aperture 8.7 mm; Réunion (?), no exact locality; in coll. T. W. Baer (CH-1602 La Croix, Switzerland). Paratype #7: 18.7 x 6.8 mm, aperture 8.2 mm; Philippines, Bohol, deep water, 1989; in coll. T. W. Baer. Paratype #8: 21.2 x 7.2 mm, aperture 9.4 mm; Philippines (no exact locality); in coll. H.-H. Heinicke (Paul-Singer-Str. 46, D-28329 Bremen, Germany). Paratype #9: 21.6 x 7.7 mm, aperture 9.1 mm; Philippines, Cebu, Punta Engano, in 180–190 m, fishnets, June 1978; in coll. R. Salisbury (8807 Craydon Drive, Boise, Idaho 83704, USA). Paratype #10: 19.5 x 7.2 mm, aperture 8.5 mm; type locality; in coll. E. G. de Suduiraut. Paratype #11: 20.2 x 7.3 mm, aperture 8.9 mm; type locality; in coll. E. G. de Suduiraut. Paratype #12: 20.1 x 7.2 mm, aperture 8.9 mm; type locality; in coll. E. G. de Suduiraut. Paratype #13: 20.0 x 7.0 mm, aperture 8.8 mm; type locality; in coll. E. G. de Suduiraut. Paratype #14: 18.0 x 6.6 mm, aperture 7.8 mm; Philippines, Bohol, off Panglao, shell nets, July 1991; in coll. M. P. Marrow. Paratype #15: 19.6 x 6.9 mm, aperture 8.1 mm (illustrated specimen Turner, 1993: Taf. 2, Fig. 15); Philippines, Cebu, Punta Engano; in coll. J. C. Martin. Paratype #16: 19.5 x 7.3 mm, aperture 8.5 mm; Philippines, Cebu, Punta Engano; in coll. J. C. Martin. Paratype #17: 20.1 x 7.2 mm, aperture 8.5 mm; Philippines, Bohol, deep water; in coll. J. Bertard (7 rue Jean Jaures, 94340 Joinville le Pont, France). Paratype #18: 20.5 x 7.6 mm, aperture 9.2 mm; Philippines, Bohol Strait, off Balicasag Island, shell nets, deep water, Sept. 1994; in coll. M. P. Marrow. Paratype #19: 17.7 x 6.3 mm, aperture 7.9 mm; Ogasawara Islands, Okino-Tori-Shima, Douglas Reef, 100/150 m; in coll. M. Chino (6-23-18-202 Arima, Miyamae-ku, Kawasaki, 216 Japan).

Figures 1-6

1–2. *Vexillum (Costellaria) leucophryna* n. sp. 1. Holotype (MHNG 29813) 16.2 x 5.6 mm; off Balicasag Island, Bohol, Philippines, in 140–160 m. 2. Paratype # 5 (coll. H. Turner) 15.3 x 6.1 mm, dark colour variant; type locality.

3. *Vexillum (Costellaria) vespula* n. sp. Holotype (MHNG 29814) 12.1 x 4.6 mm; off Panglao Island, Bohol, Philippines, probably deep water.

4. *Vexillum (Pusia) discolorium* (Reeve, 1845), specimen (coll. H. Turner) 12.8 x 5.5 mm; Linggatu Cove, Mbanika Island, Russell group, Solomon Islands, 6–9 m.

5–6. *Vexillum (Costellaria) pyropus* n. sp. 5. Holotype (MHNG 29815) 23.3 x 8.2 mm; off Balicasag Island, Bohol, Philippines, in 140–240 m. 6. Paratype #2 (NMSA D7745) 18.7 x 6.7 mm; off Boteler Point, northern Zululand, S. Africa, dredged, 6 June 1987.



Type locality.

Off Balicasag Island, Bohol, Philippines, in 140–240 m.

Distribution and habitat.

South Africa, Reunion (?), Philippines, and Ogasawara Islands (Japan). In South Africa the species was dredged dead on a coral rubble substrate in 50 m depth. In the Philippines the species was collected both alive and dead on a sand and broken coral substrate in deep water (about 100–240 m). In the Ogasawara Islands the species was dead collected in 100/150 m on a coral sand bottom, together with *V. (C.) vicmanoui* n. sp., *V. (C.)* n. sp. (not yet described) and *V. (C.) delicatum* (A. Adams, 1853).

Etymology.

Latin masculine substantive *pyropus* (gold-bronze), according to a distinctive character of shell colour pattern.

Description.

Shell solid, of medium size to 24 mm in length. Fusiform-elongate; spire moderately acuminate; width 34–36% of length in adult specimens. Protoconch incomplete on specimens examined and consisting of 2+ convex, smooth and colourless or amber-transparent embryonic whorls. Teleoconch consists of 9 or 10 whorls, spire whorls slightly convex in outline, sutures distinct and canaliculate beneath rounded ledges, giving the spire a stepped appearance. Early whorls with 14–19 ribs, penultimate whorl with 18–25 slightly curved longitudinal ribs; interspaces V-shaped, with 7–11 spiral grooves which slightly bisect the ribs; the spiral threads override the axials, giving the shell surface a pustulate-gridlike appearance, shape of axial ribs somewhat vertebrate. Body whorl with 20–42 longitudinal ribs, especially on the anterior half bisected distinctly by 20–24 spiral grooves producing a distinctive nodulous shell surface. Aperture shorter than spire (41–46% of shell length), narrow, strongly lirate within; outer lip thin, crenulated along margin, outline of margin gently curved; columella with 5 folds decreasing in size anteriorly, largest folds may have groove along top; siphonal canal slightly recurved to the dorsal side, siphonal notch distinct. Colour pattern: Shell white; whorls with a subsutural zone of irregular gold-bronze to brown blotches and dashes, distinctly restricted to the zone from the sutures to the fifth spiral groove; the seventh spiral groove marked with a fine golden-brown line (invisible on only a few faded specimens); body whorl with 2 additional zones of gold-bronze to brown dashes, one just below the periphery from the 10th to the 15th spiral groove, the other on the shell base covering the siphonal fasciole and a few of the most anterior spiral cords; aperture in general white

within, however the mentioned three gold-bronze zones are apparent through outer lip.

Discussion.

In some respects, *V. (C.) pyropus* resembles *V. (C.) macandrewi* (G. B. Sowerby II & III, 1874), though it must be admitted that the latter has been a doubtful species since its publication. No type specimen could be found and the original description is scarce: "*Testa gracilis tenuis fulva, costis tenuibus eleganta curvis, et striis spiralibus sculpta.* – A pretty graceful, thin, fawn-coloured shell, with spiral striae and elegantly curved longitudinal thin ribs." (SOWERBY 1874: 31, pl. 20, fig. 421). Type locality of *V. (C.) macandrewi* is the Red Sea. The type figure (Fig. 7) and a probably conspecific specimen from the Red Sea (Fig. 8) show that *V. (C.) macandrewi* is more slender in shape (width 31 % of length), especially the shell base is more stretched and attenuated; it has also a different sculpture, with less numerous and almost smooth axial ribs, without nodulous shell surface; the colouration is concentrated to more uniform brown subsutural and subperipheral bands (not zones of blotches and dashes like in *V. pyropus*). If and when more specimens of both forms will be available, they may possibly turn out to represent two subspecies of the same species.

***Vexillum (Costellaria) stossieri* n. sp.**

Figures 9–10

Type material.

Holotype (Fig. 9): 28.0 x 9.6 mm, aperture length 11.4 mm; dredged live at the type locality, March 1998; ex Brian Hayes, ex coll. Günter Stossier, deposited in NMSA (V8609/T1762). Paratype #1: 24.2 x 8.1 mm, aperture 9.5 mm; from South Natal, South Africa, 1997; ex Bruno de Bruin; in coll. Günter Stossier (Scheidereye 9 B, D-22359 Hamburg, Germany). Paratype #2 (Fig. 10): 22.9 x 7.6 mm, aperture 8.8 mm, immature specimen; from South Natal, South Africa, 1997; ex Bruno de Bruin; in coll. H. Turner.

Type locality.

North Transkei, South Africa, depth ±100 m.

Distribution and habitat.

South Africa (North Transkei, South Natal). Dredged at approximately 100 to 120 m depth on a sandy reef.

Etymology.

The name honours Mr. Günter Stossier (Hamburg, Germany) for his contributions to the study of mitriform shells; he brought this species to our attention and he donated the holotype and a paratype.

Description.

Shell moderately large for the subspecies, to 28 mm in length, width 33–35% of length. Spire elongate-fusiform, shell base truncated. Conoidal protoconch of 3½ convex, smooth and amber-transparent embryonic whorls. Teleoconch whorls 9–10 in number; spire outline nearly straight; sutures well defined. Spire whorls sculptured with strong longitudinal ribs, 13 in number on the first whorl, 19 in number on the penultimate whorl; ribs triangular in cross-section (at least on later whorls); ribs smooth on early spire whorls, bisected only laterally by 6 or 7 equally spaced shallow spiral grooves; on later whorls the spiral grooves are also cut into the tops of the ribs, but not as deep and wide as in their V-shaped interspaces. Body whorl with 17 longitudinal ribs and in addition several weakened rib sets close to the outer lip; body whorl ribs extend to rostrum where they are interrupted by 4 rows of strong nodulose cords which are separated by wide and deep trenches. Columella with 4 strong folds, anteriorly decreasing in height but increasing in obliquity, the larger folds with groove along top; an additional, wedge-shaped fold (or callus-tooth) within the posterior aperture angle. Aperture distinctly shorter than spire (39–41% of total shell length), narrow, anteriorly distinctly contracted at the beginning of the siphonal canal; interior of aperture strongly lirated (14 spiral lirae); outer lip thin, simple, but anteriorly wavy due to the strong nodulous cords at the base of the body whorl; inner lip thin, but prominent and bipartite, posterior part very short, anterior part comprises two thirds of the aperture length, strongly curved at the beginning of the siphonal canal which is about 4 mm long and scarcely recurved; siphonal notch moderately wide and deep.

Colour pattern: Reddish-brown shell colour subdivided into a typical arrangement of lighter coloured to white spiral bands: on each spire whorl one distinct white zone positioned at the level of the 5th (to 6th) spiral groove; body whorl with one additional, but narrower white band emerging just at the white callus-tooth within the posterior aperture angle at the level of the 11th spiral groove; the four nodulose cords at base of body whorl have white nodules and reddish-brown interspaces; interspaces of axial ribs on some whorls sporadically darker brown shaded. Outer lip light brown with two white interruptions according to the two spiral bands; interior of aperture, lirae and columella white.

Discussion.

The new species resembles *V. (C.) hilare* (Kuroda & Habe, 1971) (Fig. 11) in sculpture and tone, but this species (known from Japan and the Philippines) differs from *V. (C.) stossieri* through smaller size (up to 21 mm), less truncated shell base and through a predominantly white shell with three brown zones of approximately equal width: one just below a white

sutural border, another brown zone peripheral at the level of the posterior aperture angle, the third brown zone below the periphery of the body whorl emerging above the largest columellar fold. On the other hand, *V. (C.) nodai* Turner & Salisbury, 1999, known from Japan, Hawaii, the Philippines and South Africa, has roughly the same size and is similar in sculpture and tone, but differs from *V. (C.) stossieri* through a regular conical, not truncated shell base, and through a dark-brown shell, on each whorl with a white band which is divided by a dark-brown spiral line lying in posterior 1/3 of band.

Vexillum (Costellaria) vicmanoui n. sp.

Figures 12–13

Vexillum (Costellaria) n. sp.: Turner, 1993: 96, Taf. 3, Fig. 5.

Type material.

Holotype (Fig. 12): 50.3 x 14.4 mm, aperture length 24.9 mm; collected by Victor Pagobo fresh dead at the type locality; donated by Emmanuel G. de Suduiraut, 1993; deposited in MHNG (#29816). Paratype #1: 48.6 x 13.6 mm, aperture 24.5 mm; same collection data as holotype; in coll. H. Turner. Paratype #2: 48.4 x 14.1 mm, aperture 24.7 mm; Philippines, 1998; in coll. Günter Stossier (Scheidereye 9 B, D-22359 Hamburg, Germany). Paratypes #3 and 4: 46.6 x 13.4 mm, aperture 24.6 mm; 26.2 x 9.0 mm, aperture 13.0 mm; Philippines, Bohol, off Balicasag Isld, in fisherman's tangle net, probably deep water; in coll. Al Deynzer (1614 Periwinkle Way, Sanibel, FL 33957, USA). Paratype #5: 26.1 x 8.8 mm, aperture 12.3 mm; Philippines, Bohol Strait, Punta Engano, shell net at 60–200 m, Nov. 1987; in coll. M. Marrow. Paratype #6: 24.1 x 8.6 mm, aperture 11.7 mm; Philippines, Cebu, Punta Engano, in fisherman's tangle net, probably deep water; in coll. Al Deynzer. Paratype #7: 21.2 x 8.2 mm, aperture 10.7 mm; Philippines, Bohol, off Balicasag Island, in tangle net at 140 m depth, 1986; in coll. H. Turner. Paratypes #8, #9 and #10: 26.4 x 9.5 mm, aperture 14.5 mm; 26.2 x 9.5 mm, aperture 14.0 mm; 20.2 x 7.8 mm, aperture 10.5 mm; Philippines, Bohol, off Balicasag Isld., tangle net, deep water; in coll. Gianluigi Pellifroni (Via Roma 64, I-21050 Porto Ceresio, Italia). Paratype #11: 26.6 x 10.4 mm, aperture 13.5 mm; Philippines, Cebu, Bogo Island, tangle net, c. 150 m; in coll. J. P. Lefort (Maeva, Huahine, French Polynesia). Paratype #12 (Fig. 13): 25.6 x 9.3 mm, aperture 12.1 mm; Japan, Ogasawara-Gunto, Okino-Tori-Shima (Parece Vela), Douglas Reef, in 100/150 m, coral sand bottom, April 2000; in coll. M. Chino (6-23-18-202 Arima, Miyamae-ku, Kawasaki, 216 Japan). Paratypes #13 to #18: 24.0 x 9.9 mm, aperture 10.8 mm; 22.6 x 9.0 mm, aperture 10.6 mm; 20.0 x 8.1 mm, aperture 9.4 mm; 19.8 x 8.7 mm, aperture 9.7 mm; 20.6 x 8.7 mm, aperture 10.6 mm, apex broken off; 21.1 x 8.6 mm, aperture 10.3 mm, worn and faded; same collection data as paratype #12. Paratypes #19 (25.2

x 9.3 mm, aperture 11.9 mm) and #20 (25.0 x 9.7 mm, aperture 13.0 mm); reportedly by local Japanese fishermen the locality is Japan, Ryukyu Islands, Okinawa-Shoto, Sakishima-Gunto, off Miyako-jima, in 100 m, August 2000; in coll. H. T. (#19) and coll. J. P. Lefort (#20).

Other material studied.

One juvenile specimen (ca. 25 x 8 mm) from the Philippines, western Bohol reef, off Coamen Island, dredged from 240 m depth, Febr. 1987, studied only from a photograph donated by Roger Martin. A second immature specimen (25.4 x 8.7 mm, aperture 11.1 mm) from the Philippines, Cebu, studied from a photograph donated by Jean Claude Martin. A third immature specimen (25.4 x 9.1 mm, aperture 11.7 mm) from the Philippines, Bohol, off Balicasag Id., in 160 m caught in tangle net; in coll. E. G. de Suduiraut, studied from photographs (#091) taken by P. Bail. Several other juvenile specimens, all from deep water off the Philippines, are known to the author only from photographs, donated from various collectors.

Type locality.

Off Talikud Island, Davao Bay, Mindanao, Philippines, depth 130/150 m.

Distribution and habitat.

Philippines, Ryukyu, and Ogasawara Islands. Deep water approximately 100 m to 240 m, on sand and mud substrates. In the Bohol Strait off Coamen Island the species lives sympatric with *Vexillum (Costellaria) martinorum* Cernohorsky, 1986, still a quite uncommon species. About 2000 km to the northeast at the Ogasawara Islands the species lives sympatric with *V. (C.) pyropus* n. sp. (also described in the present paper), another new (not yet described) *V. (C.)* species, and *V. (C.) delicatum* (A. Adams, 1853).

Etymology.

The specific name refers to "Vicmanou" which is a

composition of "Vic" (nickname of Victor Pagobo, the collector of the holotype) and "Manou" (nickname of Emmanuel G. de Suduiraut, the donator of the holotype).

Description.

Shell large, to 50 mm in length, width 28–29% of shell-length in adult specimens, elongate fusiform in shape, surface shining. Protoconch consisting of 3 strongly convex, smooth and colourless-transparent to light yellow embryonic whorls. Teleoconch of 10–11 convex and axially ribbed whorls; sutures shallowly canaliculate beneath narrow ledges, giving the spire a slightly stepped appearance; sculptured with moderately strong, rather slender, rounded axial ribs, distinct on all spire whorls, becoming obsolete only on parts of last half of body whorl; ribs number 18–23 on early spire whorls, 24–25 on the penultimate and approximately 30 on the body whorl; interstices somewhat wider than the ribs; spiral grooves between axial ribs number 7–9 on early spire whorls, 9–11 on the penultimate and 20–22 on the body whorl, bisecting the axial ribs only on the lower half of the body whorl; siphonal fasciole with 7–8 flat oblique cords, separated by very narrow and shallow grooves. Aperture equal in height to the spire (49–51% of shell-length in adult specimens), narrow, channel-like constricted anteriorly; outer lip simple and smooth, with 11–12 lirations within, at the posterior end distinctly recurved, anal notch sharp and narrow, with a callus on the parietal side on mature specimens; inner lip indistinct, columella only slightly glazed, with 4 plicae decreasing in size anteriorly; siphonal canal distinctly recurved to the dorsal side, spout-shaped, without siphonal notch. Colour pattern: The first 3 to 4 spire whorls are white. Later spire whorls chiefly brown with a distinctive white band, bordered on either side by irregularly arranged white and brown blotches; lower half of body whorl with a distinctive second and an indistinct third white band; axial ribs frequently flared white, especially on either side of the first white spiral band; aperture in general white within; brown shell colourations shining through on outer lip and between columellar plicae.

Figures 7-13

7–8. *Vexillum (Costellaria) macandrewi* (Sowerby, 1874). 7. Type figure Sowerby, 1874, pl. 20, fig. 421. 8. Specimen (HUI 37916) 15.7 x 4.9 mm; Gulf of Aqaba, Red Sea, dredged in 280–300 m. 9–10. *Vexillum (Costellaria) stossieri* n. sp. 9. Holotype (NMSA V8609/T1762) 28.0 x 9.6 mm; North Transkei, S. Africa, in 100–120 m. 10. Paratype 2 (coll. H. Turner) 22.9 x 7.6 mm; South Natal, S. Africa, 1997. 11. *Vexillum (Costellaria) hilare* (Kuroda & Habe, 1971), holotype (NSMT-MoR 9607) 21.2 x 6.9 mm; Sagami Bay, Honshu, Japan (possibly off Hayama, Amadaiba bank, in c. 100 m). 12–13. *Vexillum (Costellaria) vicmanoui* n. sp. 12. Holotype (MHNG 29816) 50.3 x 14.4 mm; off Talikud Island, Davao, Mindanao, Philippines, in 130/140 m. 13. Paratype #12 (coll. M. Chino) 25.6 x 9.3 mm, juvenile specimen; Douglas Reef, Okino-Tori-Shima, Ogasawara-Gunto, Japan, in 100/150 m.



Discussion.

V. (C.) vicmanoui grows to a larger size than most species of the subgenus *Costellaria*. In general appearance it resembles slightly *V. (C.) takakuwai* Cernohorsky & Azuma, 1974 (Fig. 14), but this species is smaller, has a relatively shorter aperture, less shining surface, distinctly nodulous axial ribs and a different colour pattern: white shell with light-brown colouration restricted mainly to the interspaces of the axial ribs. *V. (C.) vicmanoui* slightly resembles also *V. (C.) acupictum* (Reeve, 1844) (Fig. 15), but this species has a shorter aperture, is differently sculptured with much more numerous axial riblets which are crossed by equally as numerous spiral grooves, and shows also a different colour pattern: white shell with randomly distributed brown blotches. Young specimens of *V. (C.) vicmanoui* resemble *V. (C.) choslenae* Cernohorsky, 1982 (Fig. 16) in colouring, however this species is smaller (to 33 mm in length), the last 2–3 whorls being almost smooth, with less numerous spiral grooves, short and straight siphonal canal, and differs even in colour pattern, in having a light coloured subsutural band besides 3 further white bands. *V. (C.) vicmanoui* could also be confused with *V. (C.) elliscrossi* Rosenberg & Salisbury, 1991 (see Turner, 1993, pl. 2, fig. 11), however this species is smaller in size (up to 30 mm shell length) and shows a more regular colour pattern: first spire whorls not white but equally coloured as later whorls, each whorl with a light brown subsutural zone and a dark brown subperipheral zone, without the typical irregular white flares and brown blotches evident in *vicmanoui*. Juvenile and subadult specimens of *V. (C.) vicmanoui* n. sp. have been confused with *V. (Pusia) cithara* (Reeve, 1845) (Fig. 17) by collectors and dealers, but the latter species is more obese in shape, has less numerous and narrower axial ribs, shallower spiral grooves, shorter and straight siphonal canal, distinct siphonal notch, and lacks white bands on the lower half of the body whorl.

Vexillum (Costellaria) perrieri (Dautzenberg, 1929)

Figures 18–21

1853. *Mitra turricula* A. Adams: 139 (locality unknown) (non *V. turricula* Gmelin, 1791 nec *M. turricula* Cristofori & Jan, 1832).
 1929. *Mitra (Turricula) perrieri* Dautzenberg: 393, pl. 4, figs. 1, 2.
 1967. *Vexillum armigera* (Reeve): Maes: 140, pl. 13, fig. T (non *Mitra armiger* Reeve, 1845).
 1970. *Vexillum (Costellaria) turrigerum* (Reeve): Cernohorsky: 55 (*turricula* A. Adams, 1853 in synonymy).
 1974. *Costellaria turrigerum* (Reeve): Kaicher: card 292 (non *Mitra turriger* Reeve, 1845).

1993. *Vexillum (Costellaria) humile* (Hervier): Turner: 94, Taf. 2, Fig. 13 (non *Mitra humilis* Hervier, 1897).
 1997. *Vexillum (Costellaria)* n. sp. Turner: 10, pl. 2, fig. 13.
 2001. *Vexillum (Costellaria) perrieri* (Dautzenberg): Turner: status nomen validum.

Type material.

Three worn syntypes of *M. turricula* A. Adams (with broken apices): BMNH #43667 (14.0 x 4.9 mm, aperture 6.8 mm), #43668 (13.3 x 4.8 mm, aperture 6.6 mm) (Fig. 18), and #43669 (13.2 x 4.7 mm, aperture 6.3 mm). No type specimen of *M. perrieri* Dautzenberg could be found neither in the Dautzenberg collection IRSNB (Dr. J. van Goethem, in litt. 20 Dec. 2000) nor in the MNHN (Dr. P. Bouchet, in litt. 17 Jan. 2001).

Type locality.

No locality was given for *M. turricula* A. Adams. The type locality of *M. perrieri* Dautzenberg is Nosy Bé, Madagascar.

Distribution and habitat.

Mozambique, Madagascar, Maldives, Cocos-Keeling Islands, New Caledonia, Fiji Islands. Shallow water (1–8 m), partially collected live on clear sand with some coral; in Mozambique dredged dead from 16–30 m.

Records.

- Northern Mozambique, off Pemba, dredged 16–18 m, sandy bottom: 2 specimens: 14.2 x 5.1 mm, aperture 6.3 mm, protoconch broken, in coll. J. P. Lefort; 13.2 x 5.0 mm, aperture 6.2 mm, apex broken, in coll. H. Turner.
 Madagascar, Ifaty Lagoon: 2 specimens: 15.3 x 5.3 mm, aperture 7.3 mm, in coll. M. Marrow #3546L (Fig. 21); 15.5 x 5.1 mm, aperture 6.7 mm, leg. J. Drivas, August 1985, in coll. R. Salisbury.
 Maldives, Ari atoll, leg. Mr. Russo: 1 specimen: 12.7 x 4.2 mm, aperture 6.3 mm, immature specimen; in coll. G. Pellifroni.
 Cocos-Keeling Islands (Indian Ocean), Direction Island, very fine coral sand, 13–20 m, February 19, 1963: 2 specimens: 18.5 x 6.2 mm, aperture 8.9 mm; 17.0 x 6.2 mm, aperture 8.2 mm; ANSP 289122.
 New Caledonia, Ile des Pins east coast, Oro, shallow water: 3 specimens: 13.9 x 5.0 mm, aperture 6.8 mm, apex broken (Fig. 20); 12.1 x 4.7 mm, aperture 5.5 mm, immature specimen; 10.8 x 4.1 mm, aperture 5.3 mm, immature specimen; leg. G. Pellifroni, February 1998; in coll. G. Pellifroni.
 Fiji Islands, Taveuni, Toberua Island (21 km east of Nausori), shallow water: specimen 15.7 x 5.0 mm, aperture length 6.6 mm, live taken by G. Pellifroni,

December 1992; donated to MHNG (#29817) (Fig. 19).

Original description.

Mitra turricula A. Adams, 1853 (: 139, no. 40). "*M. testa fusi-formi-turrita, alba, carneo sparsim picta, anfractibus superne angulatis; longitudinaliter costata, costis crassis, laevibus, distantibus, supra nodosis, interstitiis sulcato-clathratis; apertura spiram aequante; columella plicis quatuor, supremis duabus duplicatis; basi vix recurva. Hab. ?* — A small, elegant, turreted species, with smooth, thick ribs, and the interstices punctate-clathrate."

Mitra (Turricula) perrieri Dautzenberg, 1929 (: 393–394). "*Testa cylindraco-subfusiformis, parum nitens, in imo debiliter emarginata. Spira acuminata; anfr. 9 convexiusculi: primus laevi, ceteri costis longitudinalibus compressis, rectis, prope testae basin antrorsum modo leviter arcuatis (15 in anfr. ultimo) et striis transversis incisus (14 in anfr. ultimo), sculpti. Apertura angusta, inferne haud contracta; labrum arcuatum et intus laevis; columella quaduplicata: plicae inferae debilis simae. Color sordide lutescens; anfr. ultimus in medio cinereo late taeniatus. Altit. 18, latit. 6 millim.; apertura 8 millim. alta, 2 1/2 millim. lata.* — Coquille cylindrique-subfusiforme, peu luisante. Echancrure basale peu profonde, entourée d'un bourrelet externe très peu développé. Spire acuminée au sommet, composée de 9 tours à peine convexes, faiblement étagés: le premier lisse, les autres garnis de côtes axiales (15 sur le dernier tour), aplaties, perpendiculaires, mais légèrement arquées sur la base de la face antérieure de la coquille; Ces côtes et leurs intervalles sont coupés par des stries décurrentes espacées (14 sur le dernier tour). Ouverture étroite, non contractée dans le bas. Labre arqué, lisse du côté interne. Columelle pourvue de quatre plis dont les deux inférieurs sont très peu développés. Coloration gris-jaunâtre clair avec une large bande gris-cendré entourant le milieu du dernier tour et dont la partie supérieure est prolongée sur la base des tours précédents."

Redescription.

Shell moderate in size for the subgenus, length 15 to approximately 19 mm in adult and undamaged specimens, solid. Subfusiform, spire stepped and turreted, ratio of shell height to width variable (width 32–35.5–39% of length). Conoidal protoconch of 3 convex, smooth and colourless or light brown glassy embryonic whorls. Teleoconch whorls 7–8 in number, later spire whorls angular due to oblique subsutural ramps and straight vertical sides, resulting in a polygonal spire outline; sutures distinct and slightly canaliculate. Early whorls with 17–18 rounded axial ribs, penultimate whorl with 15–17 ribs triangular in cross-section; interspaces V-shaped; ribs and their interspaces with 5–6 weak and regularly spaced spiral grooves; the ribs bear weak nodules at the shoulder of later whorls. Body whorl

with 16–20 longitudinal ribs which increase in irregularity towards the outer lip, in some specimens becoming almost obsolete; shallow spiral grooves 15–16 in number and slightly punctate. Columella with 4–5 folds, anteriorly decreasing in size but increasing in obliquity, larger folds with shallow groove along top; columella hollowed posterior to the largest fold, followed by a moderately thick callus in the posterior angle of the aperture; siphonal fasciole roll-like, separated from the anterior part of the inner lip by a deep slit; siphonal canal very short and scarcely recurved to the dorsal side; siphonal notch wide and deep. Aperture shorter than spire to almost equal in length (42–49% of shell length), narrow, sculptured by up to 15 strong and slightly nodulous spiral lirae within; outer lip smooth; outline of margin straight, anteriorly gently curved.

Colour pattern: Shell white with several characteristic grey and brown markings. Anterior part of the spire whorls with a distinct golden-brown spiral line; in most specimens the narrow zone between this line and the suture show a tender greyish or brown tint. On the body whorl two further brown spiral lines are visible, one close below the aperture angle, the other above the level of the first posterior columellar fold, both spiral lines separated by two flat spiral threads. A second greyish or brown zone occurs at the level below the aperture angle, being usually more intense in colour than the first zone above the suture. In addition to these spiral colour markings the interstices between the axial ribs show frequently some vague longitudinal brown markings. Columella, siphonal fasciole and depth of aperture tinted brown in most specimens, whereas these parts tend to be white in specimens from clear coralline sand habitats (e. g. specimens ANSP 289122 from the Cocos-Keeling Islands).

Discussion.

An older name for this species, *Mitra turricula* A. Adams, 1853, must be rejected because it is a junior secondary homonym of *Voluta turricula* Gmelin, 1791 and a junior primary homonym of *Mitra turricula* Cristofori & Jan, 1832, all three being different nominal species.

V. (C.) perrieri was confused with *V. (C.) turriger* (Reeve, 1845) (Figs. 22–23) (synonyms: *M. armiger* Reeve, 1845; *M. rufobalteata* Hervier, 1897; *M. quaesita* Melvill, 1925) by Virginia Orr Maes (1967) and Sally Diana Kaicher (1974). *V. (C.) perrieri* is similar in size and shape, but differs from *V. (C.) turriger* in sculpture and colour pattern; the latter species has stronger and smooth axial ribs with distinct nodules at the shoulder of the whorls, tops of the spire ribs being not bisected by spiral grooves; it lacks the golden-brown thin spiral lines of *perrieri*, but shows a broad reddishbrown peripheral zone which may in some specimens extend over almost the whole shell, leaving white only the strong nodules at the shoulder.

V. (C.) perrieri was also confused with *V. (C.) humile* (Hervier, 1897) (Fig. 24). The latter species

has smaller shells (7 to 11 mm in length, 2.7 to 3.3 mm in width), rounded whorls without oblique subsutural ramp, fewer axial ribs (10 on the penultimate whorl), and only subordinate colour markings of few very fine brown dots in the interspaces of the axial ribs on an otherwise overall white shell.

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Figures 14-24.

14. *Vexillum (Costellaria) takakuwai* Cernohorsky & Azuma, 1974, holotype (AIM TM-1341) 38.4 x 10.2 mm; off Okinoshima, Kochi prefecture, southern Shikoku, Japan, in 37–55 m.

15. *Vexillum (Costellaria) acupictum* (Reeve, 1844), syntype (BMNH 1966658) 32.8 x 10.7 mm; Zanzibar, east coast of Africa.

16. *Vexillum (Costellaria) choslenae* Cernohorsky, 1982, paratype #2 (AIM C-133281) 32.4 x 10.5 mm; south of Ile des Pins, New Caledonia, in 370 m.

17. *Vexillum (Pusia) cithara* (Reeve, 1845), lectotype (BMNH 1967717) 19.1 x 7.8 mm; locality unknown.

18–21. *Vexillum (Costellaria) perrieri* (Dautzenberg, 1929). 18. Syntype *Mitra turricula* A. Adams, 1853 (BMNH 43668) 13.3 x 4.8 mm, apex broken; locality unknown. 19. Specimen (MHNG 29817) 15.7 x 5.0 mm; Toberua Island (21 km east of Nausori), Taveuni, Fiji Islands, shallow water. 20. Specimen (coll. G. Pellifroni) 13.9 x 5.0 mm, apex broken; Oro, east coast of Île des Pins, New Caledonia, shallow water. 21. Specimen (coll. M. P. Marrow) 15.3 x 5.3 mm; Ifaty Lagoon, Madagascar.

22–23. *Vexillum (Costellaria) turriger* (Reeve, 1845). 22. Lectotype (BMNH 1967902) 13.9 x 5.0 mm; Island of Ticao, Philippines, in sandy mud at a depth of 6 fms. (11 m). 23. Specimen (ANSP 289123) 16.0 x 5.9 mm, dark colour form; Direction Island, Cocos-Keeling Islands, in 13–20 m, in very fine coral sand.

Fig. 24. *Vexillum (Costellaria) humile* (Hervier, 1897), specimen (coll. M. P. Marrow) 6.4 x 2.6 mm, juvenile with intact pink protoconch; Dalaguete, Cebu, Philippines.

