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Two new Triphora species from the West Indies (Gastropoda; Triphoridae)

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Triphora verbernei n. sp. and *T. peetersae* n. sp. are described from Curaçao and Aruba, respectively. A lectotype is designated for *Triphora novem* Nowell-Usticke, 1969.

Key words: Gastropoda, Prosobranchia, Triphoridae, *Triphora*, taxonomy, West Indies, Curaçao, Aruba.

In a sediment sample, collected from Curaçao (Lesser Antilles) on 29 March 1970 by Dr. P. Wagenaar Hummelinck, an unknown *Triphora* species was found.

In February 1985, Mrs. Ineke Peeters from Aruba (Lesser Antilles) collected coral sand samples at depths between 20-40 m during SCUBA diving activities. In cooperation with Frère Fredericus Verberne, this material was sorted and during a visit of the latter to the Netherlands, it was kindly handed to us for research. Amongst this material, we found another peculiar *Triphora* species which also proved to be undescribed. Both new taxa will be described below.

Abbreviation: ZMA for Zoölogisch Museum, University of Amsterdam.

Triphora verbernei n. sp. (figs. 6-8)

Description of holotype. — Shell sinistral, small, narrowly cyrtoconoid, length 3.20 mm, width 1.20 mm (figs. 6-8).

Protoconch of planktotrophic larval type (fig. 7), 4½ whorls, length 0.58 mm, largest diameter 0.39 mm. Nucleus smooth, diameter 0.15 mm. Other protoconch whorls sculptured with axial ribs and two spiral ribs of about equal strength; the first (lower one) appearing on the first postnuclear whorl, the second (upper one) on the second postnuclear whorl. Intersections with axial ribs nodular. Colour chestnut brown.

Teleoconch with 6¾ whorls, slightly convex, sculptured with spiral ribs and weaker, undulating axial ribs, the intersections strongly nodular, forming rounded knobs. Suture shallow. Spiral ribs numbering two, from the first teleoconch whorl to the penultimate whorl. A third spiral rib appears on the last whorl, between the other two ribs and originating from the upper one. On the base three additional ribs, which are hardly knobby, especially the lowermost two. On the outside of aperture nine ribs. A seventh rib appears between ribs three and two; an eighth between two and four; a ninth between four and five. All ribs are crossed by weak axial riblets, which weaken towards the base. Deep furrows between the lowermost ribs on the base. Lowest rib is also the rim of the anterior siphonal canal. Microsculpture consists of irregular rows of microscopic knobs, only visible between the spiral ribs. On base, between fourth and fifth spiral rib, prominent close-set axial ribs, best visible near the aperture, becoming weaker towards the outer lip, and gradually looking more like growth lines.

Aperture spade-like, outer lip slightly expanded, inner lip folded over the axis (fig. 8). Posterior siphonal canal a deep notch; anterior siphonal canal curved with deep

slit. Colour brown, the knobs of a lighter shade, on the last whorls almost white and translucent, in particular on uppermost spiral.

Type locality. — West Indies, Curaçao, Boca Labadera, Santa Catarina, beach, 29 March 1970, leg. Dr. P. Wagenaar Hummelinck.

Variability. — All 19 paratypes are more less of the same size, shape (slenderness) and colour pattern. Unfortunately, most specimens are worn.

Material studied. — Holotype (ZMA Moll. no. 3.89.013) and 19 paratypes (ZMA Moll. no. 3.89.014), all from the type locality.

Other material studied. — West Indies: Curaçao, Piscadera Bay (sta. 1459), 1 specimen; Boca Grandi (sta. 1016 a), 1 specimen, all leg. P. Wagenaar Hummelinck; Piscadera Bay, 1 specimen; Santa Cruz, 1 specimen; St. Joris Bay, 3 specimens; Wacao Playa Grandi, 5 specimens, all leg. Fr. M. Arnoldo Broeders; St. Michiels Bay, 1 specimen, leg. M. J. Faber. Bonaire, Lac Cai, 5 specimens; Playa Lechi, 9 specimens, all leg. Fr. M. Arnoldo Broeders. Puerto Rico, Mayaguez, dredged 90 m, 1 specimen, leg. P. Wagenaar Hummelinck.

Etymology. — This new triphorid is named after Frère Fredericus Verberne from Aruba, who kindly donated numerous molluscs to our museum and extended hospitality during the first author's stay at Aruba in 1982. Due to his enthusiasm, malacological research on Aruba was initiated and has been stimulated ever since.

Remarks. — This shell looks like a short, more bulbous *T. novem* Nowell-Usticke, 1969. In addition, the latter has a more uniform brown teleoconch. It differs from *T. peetersae* by having a protoconch, indicating a planktotrophic larval stage.

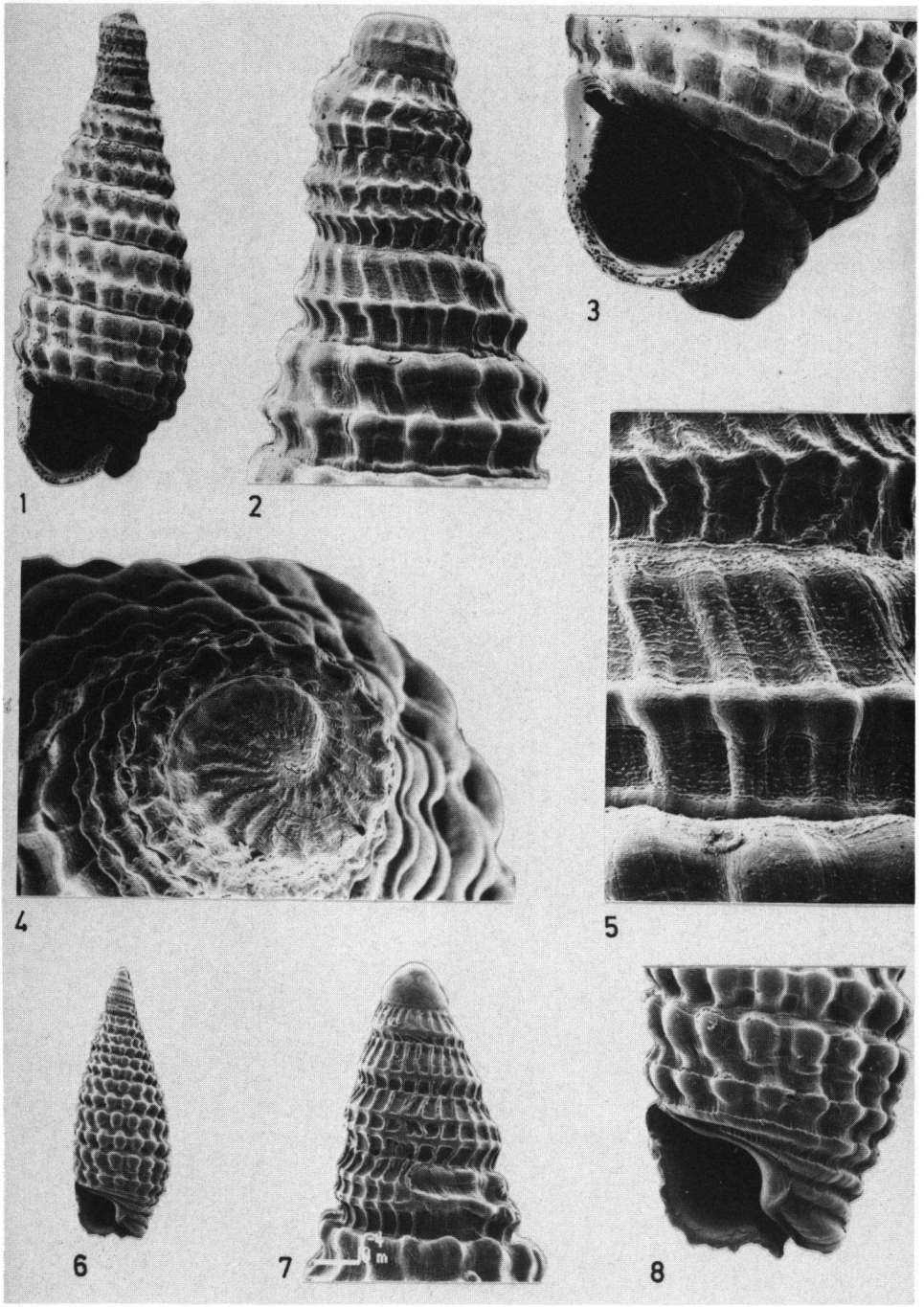
Triphora peetersae n. sp. (figs. 1-5)

Description of holotype. — Shell sinistral, small, narrowly cyrtoconoid, length 3.3 mm, width 1.4 mm (not figured).

Protoconch of lecithotrophic larval type, 3½ whorls, largest diameter 407 µm. Top of first whorl sculptured with axial riblets (fig. 4), sides of first 2½ whorls encircled by two similar, strongly angulating median spiral threads, and crossed by flexuous, crisp axial riblets, rather knobby just below suture. On last whorl the adapical spiral cord abruptly ends. Colour uniformly white.

Teleoconch whorls slightly convex, reticulately sculptured with prominent well-defined spiral cords and axial costae, intersections nodular, suture shallow, 5½ whorls. Spiral cords numbering six on body whorl, of which two on base. First postnuclear whorls with two spiral rows (cord one and three) with strong nodules. On the fourth and fifth postnuclear whorls a spiral thread becomes visible between cord one and three. This thread gradually grows stronger and develops small knobs. On the body whorl this thread becomes cord two. Spiral five (on base) weakly nodular and spiral six nearly smooth. First two postnuclear whorls white like protoconch, the third whorl gradually grows to dark brown. All other whorls dark brown. Outer lip less deep brown than body whorl.

Figs. 1-8. Shells of *Triphora* species. 1-5. *Triphora peetersae* n.sp., Aruba, Mangel Altu. 1, paratype no. 1, ventral view, length 3.4 mm; 2, paratype no. 2, detail of protoconch; 3, paratype no. 1, detail of aperture; 4, paratype no. 2, protoconch structure from above; 5, paratype no. 2, microsculpture on last whorl of protoconch. 6-8. *Triphora verbernei* n.sp., Curaçao, Boca Labadera, holotype. 6, ventral view, length 3.20 mm; 7, protoconch; 8, last whorl of teleoconch and aperture.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Aperture ovate/subquadrate, outer lip produced and flared basally, inner extremity deeply infolded to overhang base of inner lip. Posterior siphonal notch U-shaped. Anterior siphonal canal oblique, subtubular, rather short.

Type locality. — West Indies, Aruba, Mangel Altu, 20-50 m, in shell sand, leg. I. Peeters, February 1985.

Variability. — The holotype is one of the smaller full grown specimens. We have 44 paratypes of which the largest measures 4.7 by 1.7 mm. In colour pattern this new species is very constant.

Material studied. — Holotype (ZMA Moll. no. 3.89.015) and 44 paratypes (ZMA Moll. no. 3.89.016, colln. Verberne, and colln. I. Peeters). All paratypes from the type locality.

Etymology. — Named after Mrs. Ineke Peeters, who collected this material by SCUBA diving.

Remarks. — With its small size, cyrtoconoid shape, a protoconch indicating lecithotrophic larval development, and the combination of white upper whorls and deep brown lower whorls, *Triphora peetersae* is set well apart from other West Indian triphorids. Only one species superficially resembles *T. peetersae*, viz. *T. novem* Nowell-Usticke. This species has been based on both a syntype of *Triphora intermedia* (C. B. Adams, 1850), and a worn broken and discoloured specimen from St. Croix, called the "holotype" by Usticke (1971). The fragment from St. Croix (herewith selected as the lectotype of *Triphora novem* Nowell-Usticke, 1969, deposited in the American Museum of Natural History, New York no. 195419) could be identified as a dark brown species, also with white upper whorls (Faber, 1988). We know this taxon [s.n. *T. exiguum* (C.B. Adams, 1850), a nomen dubium] from several localities throughout the Caribbean, including Aruba (De Jong & Coomans, 1988). It differs from *T. peetersae* in having a dark brown protoconch, in being larger (more whorls) and in having planktotrophic larval development.

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REFERENCES

DE JONG, K. M., & H. E. COOMANS, 1988. Marine gastropods from Curaçao, Aruba and Bonaire: 1-261. Leiden.

FABER, M. J., 1988. Studies on West Indian marine mollusks 13. The malacological taxa of Gordon W. Nowell-Usticke. — Kreukel 24: 67-102.

NOWELL-USTICKE, G., 1969. A supplementary listing of new shells (illustrated) to be added to the check list of the marine shells of St. Croix: 1-32 (privately printed). Christiansted, St. Croix.

——, 1971. A supplementary listing of new shells (illustrated) revised edition to be added to the check list of the marine shells of St. Croix: 1-32 (privately printed). Christiansted, St. Croix.