Description of *Herpetopoma eboreum* n.sp. (Gastropoda: Trochidae: Eucyclinae: Chilodontini) from New Caledonia

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ABSTRACT. *Herpetopoma eboreum* n. sp. is described and compared with similar eucyclinid species from the Indo-Pacific area. A new combination is proposed for *Agathodonta townsendiana* (Melvill & Standen, 1903).

RESUME. *Herpetopoma eboreum* n. sp. est décrite et comparée avec des espèces analogues d'Eucyclinae provenant de la zone Indo-Pacifique. Un changement de genre est également proposé pour *Agathodonta townsendiana* (Melvill & Standen, 1903).

INTRODUCTION

The present paper reports on Trochidae collected by expedition Montrouzier that took place in September 1993 around New Caledonia, more precisely in the area of Touho. In this material, among various trochids, we found species belonging to the genus *Herpetopoma* (subfamily of Eucyclinae). The usual species for this area were present : *Herpetopoma instricta* (Gould, 1849) [*H. bourcieri* Crosse, 1863 is a synonym] (Fig. 5), *H. gemmata* (Gould, 1845) (Fig. 6) and *H. fischeri* (Montrouzier in Souverbie & Montrouzier, 1866) (Fig. 7) (although several authors consider this species as a synonym of *H. gemmata*). But in the examined material occur also some other trochid shells that belong undoubtedly to the same subfamily and genus, but that seems unknown to us. After further studies, it appears that these shells doesn't belong to any known species. It is described here.

Abbreviations

Repositories

BM(NH): The Natural History Museum, London, United Kingdom.
IRSNB: Institut royal des Sciences naturelles de Belgique, Bruxelles, Belgium.
MNHN: Muséum national d'Histoire naturelle, Paris, France.
NMNZ: Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand.
SAM: South Australian Museum, Adelaide, Australia.

Other abbreviations

D: diameter
H: height
HA: height of aperture
P1, P2, P3, ...: primary cords (P1 is the most adapical)
S1, S2, S3, ...: secondary cords (S1 is the most adapical)
dd: no live-taken specimens present in sample
juv: only juvenile specimens in sample

SYSTEMATICS

Family: **TROCHIDAE** Rafinesque, 1815
Subfamily : **EUCYCLINAE** Koken, 1897
Tribe : **Chilodontini** Wenz, 1938
Genus: ***Herpetopoma*** Pilsbry, 1889
Type species: *Euchelus scabriusculus* A.Adams & Angas, 1867 (by original designation) - Recent, Australia.

Herpetopoma eboreum n. sp.
Figs 1-4

Type material. New Caledonia, Touho area, Touho Pass, muddy bottom, Montrouzier expedition, stn 1275, 20°49'S, 165°17'E, 50–62 m, holotype MNHN, 3.7 x 2.5 mm (dd); paratype MNHN, 4.0 x 2.6 mm (dd); paratype IRSNB (I.G. 29.785), 3.5 x 2.3 mm (dd); paratype, 3.8 x 2.6 (dd), C.Vilvens collection.

Other material. New Caledonia, Touho area. Montrouzier expedition, near Touho Bay, mud, sand and seaweeds, stn 1251, 20°46.0'S, 165°13-14'E, 6–15 m, 2 dd (MNHN); channel at north-east of Touho Bank, shelly sand, stn 1260, 20°44'S, 165°14'E, 49–59 m, 3 dd (MNHN); Touho Channel, rubbish sand, stn 1261, 20°46'-20°47'S, 165°15'-165°16.5'E, 45-56 m, 2 dd (MNHN); Mengalia Reef, outer slope, stn 1270, 20°45'S, 165°16.5'E,10-35 m, 2 dd juv (MNHN).

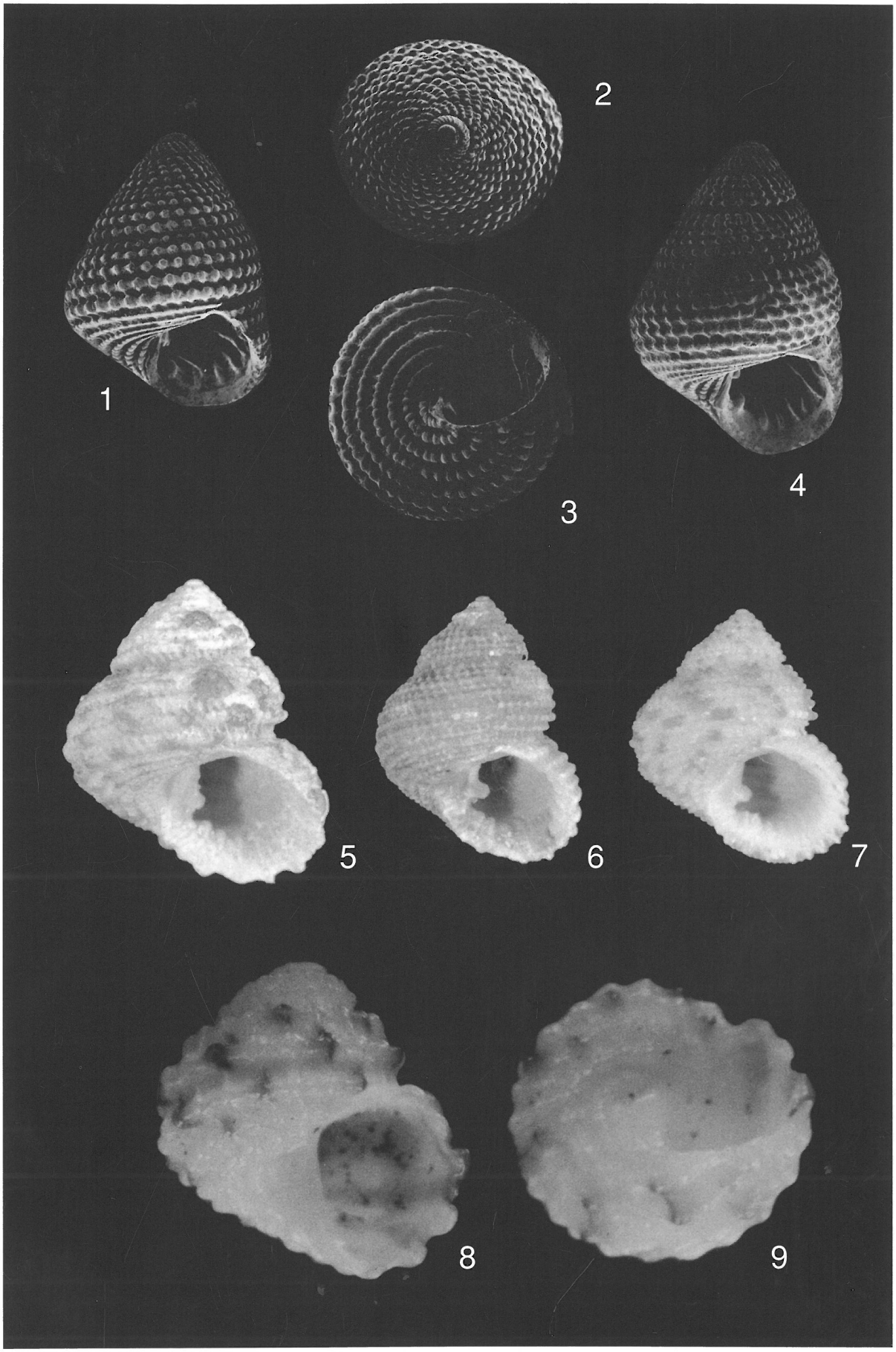
Diagnosis. A *Herpetopoma*-like species, light beige, without umbilicus, with 5 closely packed granular spiral cords on last whorl and an obvious columellar tooth.

Description. *Shell* rather small for the genus (height up to 4.2 mm, width up to 2.8 mm), higher than wide, rather thick, roundly conical; spire high, height 1.4x to 1.7x diameter, 2.8x to 3.7x aperture height; anomphalous.
Protoconch more or less 200 µm, of about 1 whorl, sculptured by fine granules; apical fold slightly rounded.
Teleoconch of 4.5 to 5 convex whorls, bearing spiral granular cords and prosocline threads; nodules from cords produced by intersections with axial folds, giving to the surface a beaded appearance. Suture visible, impressed, slightly canaliculated.
First teleoconch whorl convex, sculptured by about 25 prosocline smooth ribs, interspace between ribs slighty broader than ribs. Three primary cords appearing on second whorl, P3 appearing first; primary cords almost immediately similar in size and shape, bearing rounded nodules; P2 closer to P1 than to P3; abapical area as large as P3, depressed, showing clearly axial folds. S2 appearing between the middle of second whorl and the beginning of third whorl, quickly as strong as primary cords. On third whorl, S1 appearing close to P1, slightly weaker than P1. On two last whorls, the five cords have the same shape, P3 being slightly stronger than other cords, S1 staying occasionally weaker on a few specimens; on large specimens (see paratype 1), P1 may become thicker and split into two cords, giving a total amount of 6 cords instead of 5; interspace between cords narrower than cords.
Aperture almost circular; outer lip thickened, with 5 to 7 lirae, innermost one producing a denticle below columella.
Columella straight, slightly opisthocline; one prominent nearly basal tooth.
Base convex, sculptured with 6, sometimes 7, weakly granular spiral cords, outermost one a bit stronger than the others; axial threads between cords; interspace between cords as broad as cords.
Colour of protoconch and teleoconch light beige to ivory, with no maculation.

	station	H	D	HA	H / D	H / HA
holotype	1275	3,7	2,5	1,3	1,5	2,8
paratype MNHN	1275	4,0	2,6	1,2	1,5	3,3
paratype IRSNB	1275	3,5	2,3	1,2	1,5	2,9
paratype C. Vilvens	1275	3,8	2,6	1,3	1,5	2,9
specimen 1 (MNHN)	1275	4,2	2,8	1,4	1,5	3,0
specimen 2 (MNHN)	1275	4,1	2,6	1,3	1,6	3,2
specimen 3 (MNHN)	1275	4,1	2,5	1,1	1,6	3,7
specimen 4 (MNHN)	1260	3,5	2,4	1,1	1,5	3,2
specimen 5 (MNHN)	1260	3,4	2,3	1,0	1,5	3,4
specimen 6 (MNHN)	1260	3,7	2,7	1,1	1,4	3,4
specimen 7 (MNHN)	1261	3,7	2,3	1,3	1,6	2,8
specimen 8 (MNHN)	1261	3,8	2,3	1,1	1,7	3,5
specimen 9 (MNHN)	1251	3,9	2,6	1,2	1,5	3,3
specimen 10 (MNHN)	1251	4,0	2,7	1,3	1,5	3,1

Table 1. - *Herpetopoma eboreum* : Shells measurements in mm.

Figures 1-9
1-4. *Herpetopoma eboreum* n. sp. MEB. JEOL-JSM-840 Scanning microcope. Service commun de Microscopie du MNHN – photos by A. Le Goff; **1-3**. Holotype MNHN, New Caledonia, Touho area, 3.7 x 2.5 mm; **4.** Paratype MNHN, New Caledonia, Touho area, 4.0 x 2.6 mm.
5. *Herpetopoma instricta* (Gould, 1849), New Caledonia, Lifou area, Santal Bay, coll. MNHN, 8.1 x 7.3 mm; **6.** *Herpetopoma gemmata* (Gould, 1845), New Caledonia, Lifou area, Santal Bay, coll. MNHN, 7.7 x 6.0 mm; **7.** *Herpetopoma fischeri* (Montrouzier in Souverbie & Montrouzier, 1866), New Caledonia, Lifou area, Santal Bay, coll. MNHN, 6.9 x 6.7 mm; **8-9.** *Herpetopoma fenestrata* (Tate, 1893), holotype SAM (D13396), West Australia, 4.0 x 3.25 mm.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Discussion. Without soft parts nor radula and regarding the beaded sculpture of the shell, the columellar tooth and the circular aperture with an outer lip lirate within, the genus *Herpetopoma* seems to be the best choice for this new species.

The new species is superficially similar to *Herpetopoma pruinosa* (Marshall, 1979) from Raoul Island (Kermadec Ridge), but this species has a less elevated spire, more convex whorls, more broadly spaced spiral cords, the nodules from these cords being small and widely spaced.

Also, the description of *H. eboreum* n.sp. sounds like the one of *H. fenestrata* (Tate, 1893) (Figs 8-9) from Western Australia. The numbering of spiral cords in the original description of the latter is a bit ambiguous, even when referring to the illustration. But examinations of the holotype of *H. fenestrata* shows it to be different, the Australian species having a more depressed spire, only 2 or 3 spiral cords on the whorls and 3 cords on the base.

The short original description (without figure) of *H. annectans* (Tate, 1893) (Figs 10-11) from Western and Southern Australia mentions 5 spiral cords on the last whorls and about 5 cords on the base. But, with regard to *H. eboreum* n.sp., *H. annectans* has a more depressed and much more convex spire, a distance between cords of the whorls similar to the cords, a more rounded and a more horizontally expanded aperture.

From a superficial point of view, *Herpetopoma eboreum* n.sp. may seem to be close to *Agathodonta nortoni* McLean, 1984 (Figs 12-13) from the Philippines, but this species is larger, has more convex whorls, shows a more complex columella with two prominent teeth and has 6 more distant spiral cords with pointed nodules.

The description of the new species remembers the one of *Herpetopoma townsendiana* (Melvill & Standen, 1903) (Figs 14-15) from the Persian Gulf, but this species is bigger, has two columellar teeth and a columellar shield. Usually classified in *Herpetopoma*, this species seems to belong to the genus *Agathodonta* Cossman, 1918, regarding its columellar shield and its two columellar teeth. So, we propose here the new combination *Agathodonta townsendiana* (Melvill & Standen, 1903).

Finally, *Herpetopoma eboreum* n.sp. may be compared to *Turcica (Perrinia) concinna* A.Adams, 1863 (Figs 16-17), but this species from West Pacific area is larger with again a less elevated spire, a horizontally expanded aperture and more broadly spaced spiral cords; moreover, the granules of the subsutural cord are pointed adapically.

Etymology. The new species is named after the ivory colour of its shell.

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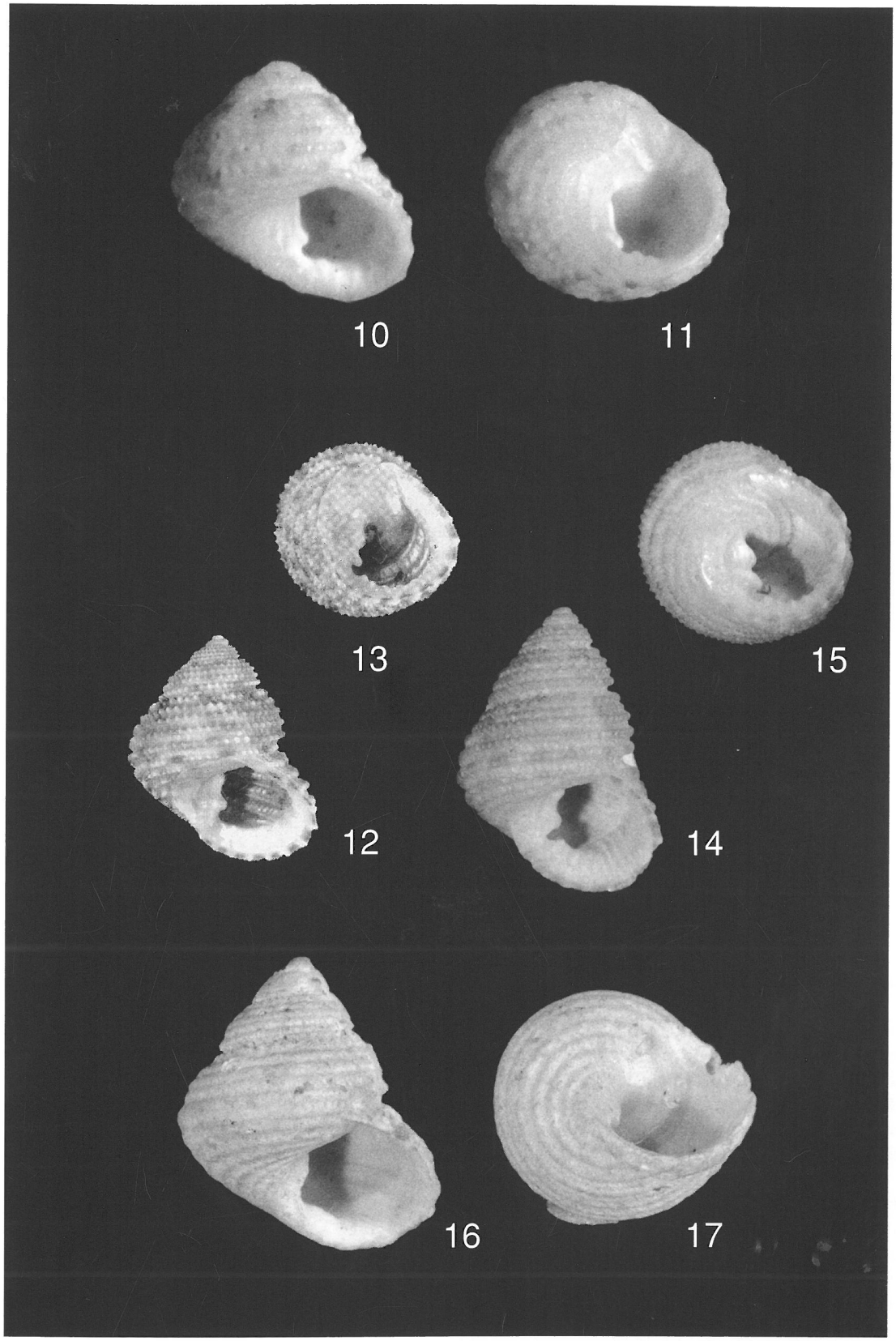

Figures 10-17
10-11. *Herpetopoma annectans* (Tate, 1893), holotype SAM (D13395), West Australia, 4.5 x 5.0 mm; **12-13.** *Agathodonta nortoni* McLean, 1984, Philippines, coll. C.Vilvens, 11.0 x 8.6 mm; **14-15.** *A. townsendiana* (Melvill & Standen, 1903), syntype BM(NH) (1903.12.15.119), Persic Gulf, 11.0 x 6.5 mm; **16-17.** *Turcica (Perrinia) concinna* A.Adams, 1863, holotype BM(NH) (1968213-3), West Pacific, 10.7 x 9.0 mm.