

Notes on the non-marine molluscs of the island of Borneo 3. The genus *Platycochlium* (Gastropoda Pulmonata: Streptaxidae)¹

J. J. VERMEULEN

Rijksherbarium, P.O. Box 9514, 2300 RA Leiden, The Netherlands

The three species of the genus *Platycochlium* (Streptaxidae) have been revised by Dance (1970). However, *P. sarawakense* now proves to contain some variable populations, which partly obscure the differences between this species and *P. saulae*. A new account of all species is given, and the differences between the above-mentioned species are re-assessed.

Key words: Gastropoda, Pulmonata, Streptaxidae, *Platycochlium*, taxonomy, Malaysia (Sarawak), Borneo.

INTRODUCTION

The genus *Platycochlium* was established by Laidlaw (1950) to accommodate a species found in W. Sarawak. The genus is similar to the continental Asiatic, monotypic genus *Tonkinia* Mabile, 1877, but differs in having the aperture turned downwards, not upwards. Dance (1970) adds two more species to the genus, and gives an illustrated account of all three. Abundant, recently collected material shows that the comparatively widespread species *P. sarawakense* is quite variable, and that the demarcation between this species and *P. saulae* needs some re-adjustment. In this paper a new account is given of the genus.

It is likely that this genus of strict calcicoles is entirely restricted to an approximately 80 km long chain of limestone outcrops stretching S. of Kuching, in the western part of Sarawak. To the South, in adjacent Kalimantan, as well as to the East, in the interior part of Sarawak, no limestone occurrences are mapped for hundreds of kilometers. The nearest limestone outcrops are in the central part of Sarawak, along the Tatau River. So far, the genus has not been recorded there.

References to material present in the collection of the author are abbreviated as 'V', followed by a collection number. Eventually all material will be deposited at RMNH. Under the heading 'Material seen' the following abbreviations are employed: 'G' for Gunung (= mountain) and 'Kpg.' for Kampong (= village).

ACKNOWLEDGEMENTS

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¹ For no. 2 in this series see Basteria 55: 139-163, 1991.

Museum Amsterdam (ZMA) have kindly put their material at my disposal as a loan.

Dr. E.F. de Vogel (Leiden) collected some soil samples along Penrissen Road, containing the problematical specimens which made the author grab for his pen.

SYSTEMATIC PART

Genus *Platycochlium* Laidlaw, 1950

Shell colourless, translucent when fresh, later white, low conical to almost discoidal in frontal view. Whorls with 4-5 varices next to the peristome (approximately one per 1/3-1/2 whorl in the last whorls), each varix preceded by a number of ribs, the ribs crossed by a fine, concentric striation. Umbilicus wide, orbicular to elliptic. Aperture subtriangular with the parietal side concave. Peristome reflected, with a knob-like thickening on the palatal side, above which a shallow sinus. Teeth four: one angularis, a sinuous lamella starting deep inside and ending in a thick knob; one short basalis; two deeply set palatales, the upper one hidden behind the palatal swelling of the peristome.

Distribution: Borneo, endemic.

Notes. — Juveniles have the teeth in the aperture less distinct, but in the same position.

Key to the species of *Platycochlium* (check adult specimens!)

- 1 a - Peripheral keel absent *P. barnaclei* (1)
- b - Peripheral keel present, distinct 2
- 2 a - Umbilical folds either absent, or present on the last whorl; in the latter case they are very inconspicuous, not or hardly covering the umbilicus..... *P. sarawakense* (2)
- b - Umbilical folds present on the last whorl, as two distinct lamellae partly covering the umbilicus, leaving open a narrow slit only *P. saulae* (3)

1 - *Platycochlium barnaclei* Dance, 1970 fig. 1

Platycochlium barnaclei Dance, 1970: 152; holotype ("Gunong Selabor, about 16 miles SSW. of Serian") leg. Wilford, 1962, NMW 70.IZ.2.

Shell low conical in frontal view, generally distinctly elliptic in apical view. Whorls 3 1/2-4 1/8, slightly convex above and moderately convex below the periphery; periphery somewhat angular but not keeled; suture moderately impressed; top whorls smooth; next whorls with 4-5 varices next to the peristome, each varix preceded by a number of ribs, the ribs crossed by a fine, concentric striation. Umbilicus wide, elliptic, inner margin of the whorls not crenulated or only so preceding the varices; last whorl without umbilical lamellae. Aperture subtriangular with the parietal side concave. Peristome reflected, with a knob-like thickening on the palatal side, above which a shallow sinus; without a small notch in the edge between basal and parietal side. Teeth four: one angularis, a sinuous lamella starting deep inside and ending in a thick

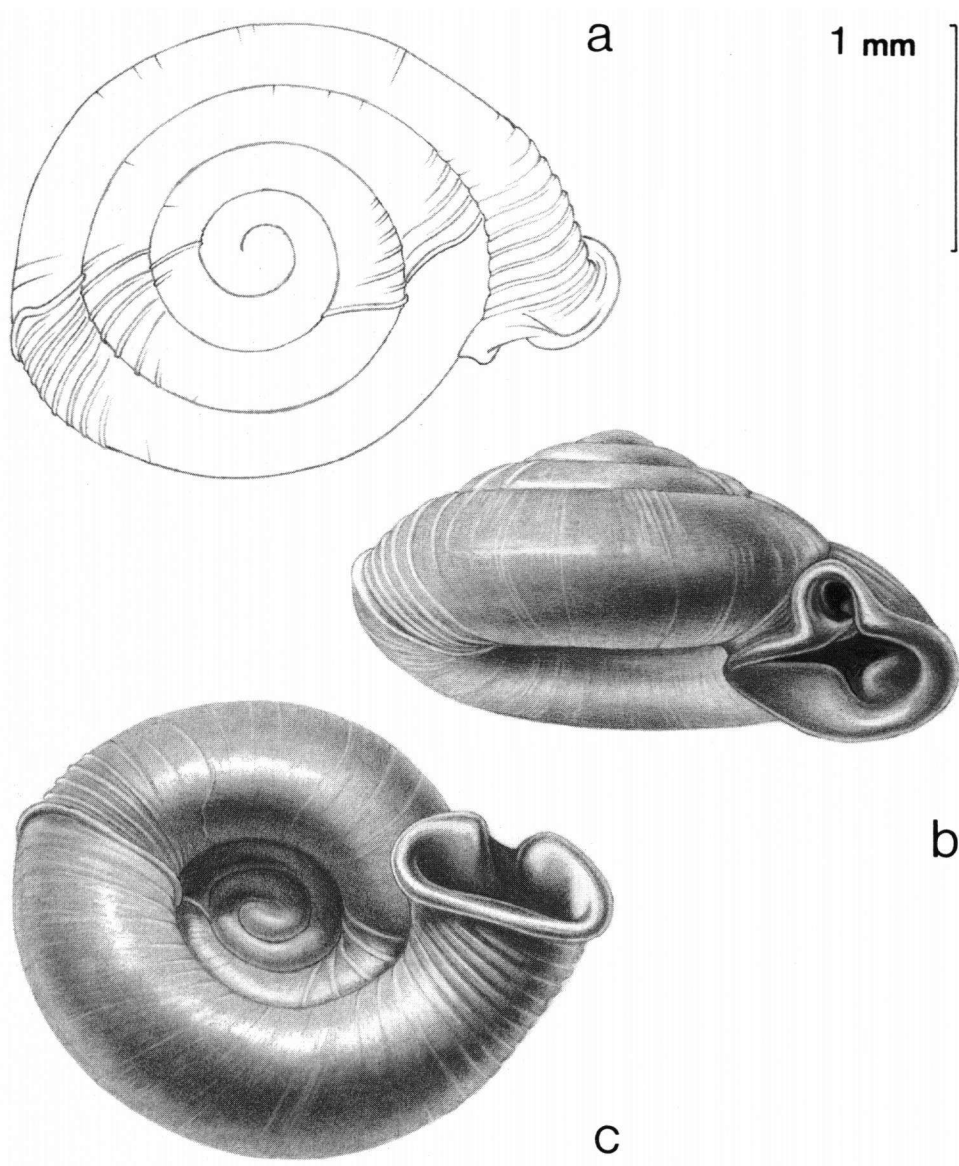


Fig. 1. a, *Platycochlium barnaclei* Dance, holotype specimen, Sarawak: G. Selabor, about 16 miles SSW. of Serian (NMW), apical view; b, do., frontal view; c, do., umbilical view.

knob; one short basalis, ending as a distinct thickening of the peristome; two deeply set palatales, the upper one hidden behind the palatal swelling of the peristome.

Measurements. — Height 1.2-1.4 mm; largest diameter 2.3-3.0 mm; smallest diameter 1.9-2.3 mm; height of aperture 0.8-1.0 mm; width of aperture 0.8-1.4 mm.

Ecology. — Callicole.

Distribution. — Borneo: Sarawak, 1st Div., limestone hills SE. of Kuching. Apparently not common, occurring locally only.

Material seen. — SARAWAK. 1st Div.: Kpg. Beratok along road Kuching-Serian (V 2022); Lobang Batu 12.5 km S. of Tebakang (leg. Wilford, 1962, see above; V 2111).

Notes. — The only species of this genus without a peripheral keel, and therefore easily recognizable. See, however, note 2 sub *P. sarawakense*.

2 - *Platycochlium sarawakense* Laidlaw, 1950
fig. 2

Platycochlium sarawakense Laidlaw, 1950: 370; holotype ("Gunong Kapur, Bau District") leg. Tweedie, 1949, BMNH; paratypes BMNH, ZMA.

Shell low conical to almost discoidal in frontal view, sometimes distinctly elliptic in apical view. Whorls $3\frac{1}{2}$ - $4\frac{3}{8}$, slightly convex above and below the periphery; periphery distinctly keeled; suture moderately impressed; top whorls smooth; next whorls with 4-5 varices next to the peristome, each varix preceded by a number of ribs, the ribs crossed by a fine, concentric striation. Umbilicus wide, approximately orbicular to elliptic, inner margin of the whorls entirely crenulated or only so near the varices; last whorl without umbilical lamellae or with two opposite, very inconspicuous ones, which not or hardly cover the umbilicus. Aperture subtriangular with the parietal side concave. Peristome reflected, with a knob-like thickening on the palatal side, above which a shallow sinus; usually with a small notch in the edge between basal and parietal side. Teeth four: one angularis, a sinuous lamella starting deep inside and ending in a thick knob; one short basalis, ending as a small thickening of the peristome; two deeply set palatales, the upper one hidden behind the palatal swelling of the peristome.

Measurements. — Height 1.1-1.5 mm; largest diameter 2.3-2.9 mm; smallest diameter 1.9-2.5 mm; height of aperture 0.6-0.8 mm; width of aperture 0.7-1.2 mm.

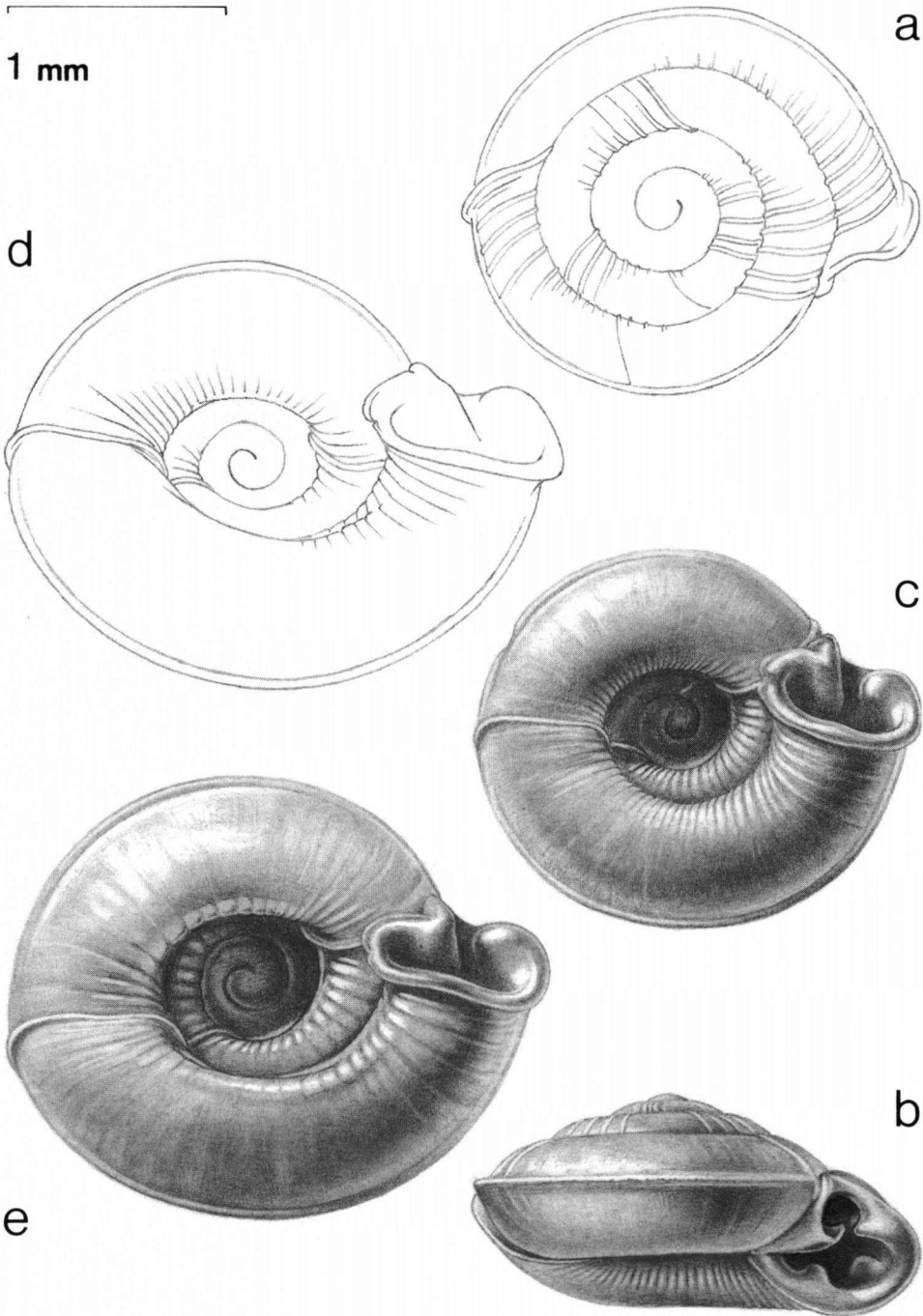
Ecology. — Callicole.

Distribution. — Borneo: Sarawak, 1st Div., limestone hills S. of Kuching. Common and widespread.

Material seen. — SARAWAK. 1st Div.: limestone hills SW. of Bau (leg. Tweedie, 1949, see above; leg. Dorman 63, FMNH; leg. Auffenberg 557, FMNH; V 2275); G. Jambusan 4 km SE. of Bau (V 2201); Kpg. Beratok along road Kuching-Serian (leg. Auffenberg 563 & 566, FMNH; V 2021 & 2023); Kpg. Tiang Bekap 10 km SSW.

Fig. 2. a, *Platycochlium sarawakense* Laidlaw, Sarawak: limestone hills SW. of Bau (V 2275), apical view; b, do., frontal view; c, do., umbilical view; d, Sarawak: road Kuching-Serian, near Kpg. Beratok (V 2021), umbilical view; e, Sarawak: Kpg. Tiang Bekap, 10 km SSW. of Kpg. Beratok (V 2563, leg. De Vogel), umbilical view.

1 mm



of Kpg. Beratok (leg. De Vogel, V 2563); Kpg. Segur Benuk, mile 21 Penrissen Road (leg. De Vogel, V 2543); 7.5 km WNW. of Kpg. Piching, near Serian (V 1939); Lobang Batu 12.5 km S. of Tebakang (V 2110).

Notes. — 1. *Platycochlium sarawakense* is variable in several characters. Particularly in the Penrissen area S. of Kuching populations occur which differ from the type specimen in the following characters: shell distinctly elliptic (not orbicular) in apical view; umbilical folds present, although very inconspicuous in all cases (never growing out into distinct lamellae as in *P. saulae*); margin of umbilicus only partly (not entirely) crenulated (see fig. 2e). Specimens which are intermediate between these populations and the type specimen are frequently found. Such specimens (see fig. 2d) show only one or two of the above mentioned characters, in all possible combinations. Distinction of subspecies is therefore impossible.

2. Juvenile specimens of *P. sarawakense* do not have a peripheral keel.

3 - *Platycochlium saulae* Dance, 1970 fig. 3

Platycochlium saulae Dance, 1970: 151; holotype ("8 miles SW of Serian") leg. Wilford, 1962, NMW 70.IZ.1; paratypes BMNH 1969110.

Shell low conical to almost discoidal in frontal view, sometimes distinctly elliptic in apical view. Whorls $3\frac{1}{2}$ - $3\frac{3}{4}$, slightly convex above and below the periphery; periphery distinctly keeled; suture moderately impressed; top whorls smooth; next whorls with 4-5 varices next to the peristome, each varix preceded by a number of ribs, the ribs crossed by a fine, concentric striation. Umbilicus wide, elliptic, inner margin of the whorls entirely crenulated or only so near the varices; last whorl with two opposite, very distinct, approximately opposite umbilical lamellae, which partly cover the umbilicus and leave open only a slit in between. Aperture subtriangular with the parietal side concave. Peristome reflected, with a knob-like thickening on the palatal side, above which a shallow sinus; usually with a small notch in the edge between basal and parietal side. Teeth four: one angularis, a sinuous lamella starting deep inside and ending in a thick knob; one short basalis, ending as a small thickening of the peristome; two deeply set palatales, the upper one hidden behind the palatal swelling of the peristome.

Measurements. — Height 1.2 mm; largest diameter 2.6-2.8 mm; smallest diameter 2.1-2.3 mm; height of aperture 0.8 mm; width of aperture 1.2 mm.

Ecology. — Calcirole.

Distribution. — Borneo: Sarawak, 1st Div., limestone hills S. of Kuching. Apparently not common, occurring locally only.

Material seen. — SARAWAK. 1st Div.: 8 miles SW. of Serian (leg. Wilford, 1962, see above).

Notes. — 1. Differs from *P. sarawakense* mainly in having two very distinct, opposite lamellae on the umbilical margins of the last whorl, partly covering the umbilicus, leaving open only a narrow slit in between.

2. Juveniles do not have a peripheral keel, nor do they have umbilical lamellae. They are very difficult to separate from juveniles of *P. sarawakense*.

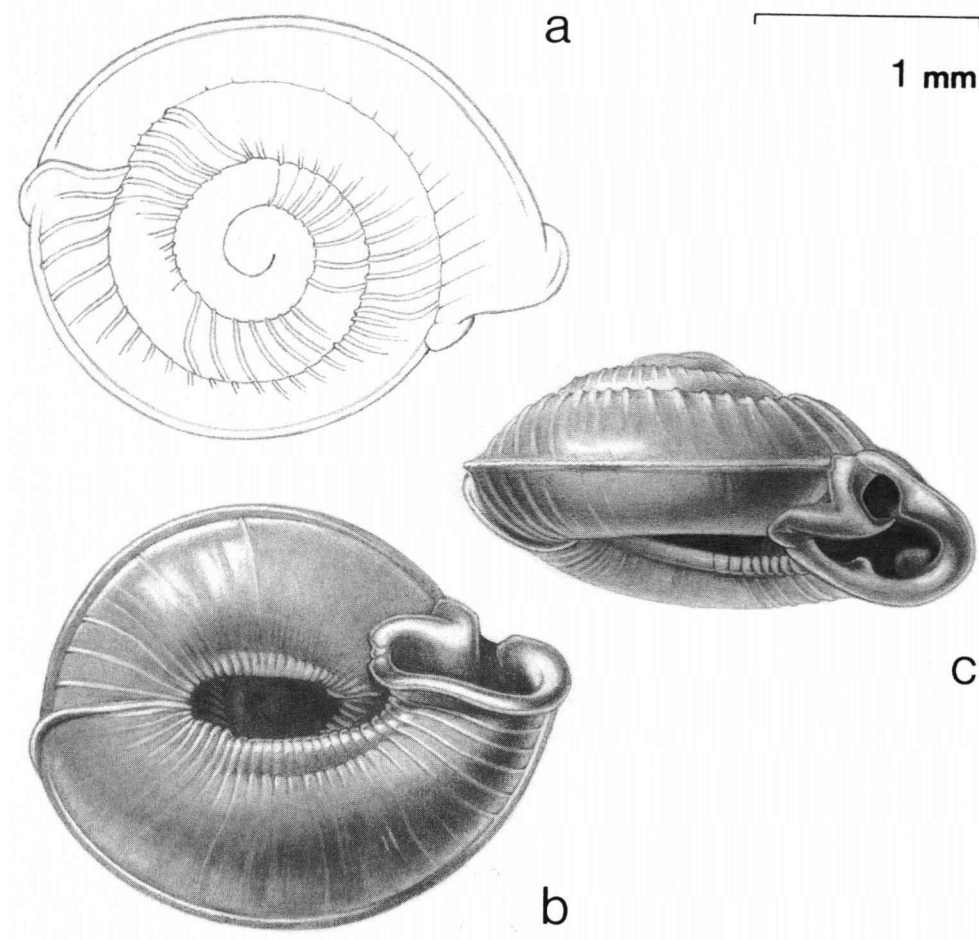


Fig. 3, a, *Platycochlium saulae* Dance, holotype specimen, Sarawak: 8 miles SW. of Serian (NMW), apical view; b, do., frontal view; c, do., umbilical view.

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