

Four new Diplommatinidae (Gastropoda, Prosobranchia, Diplommatinidae) from southern Thailand and northern Peninsular Malaysia

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Four new species of the terrestrial, prosobranch family Diplommatinidae are described. *Opisthostoma (Plectostoma) sinyumensis* spec. nov. and *O. (P.) christae* spec. nov. are both reported from Peninsular Malaysia. *Arinia panhai* spec. nov. is described from Thailand and *A. jensi* spec. nov. from Peninsular Malaysia. These are the first records for an *Arinia* species from Thailand and Peninsular Malaysia.

Key words: Gastropoda, Prosobranchia, Diplommatinidae, *Arinia*, *Opisthostoma*, *Plectostoma*, taxonomy, Peninsular Malaysia, Thailand.

INTRODUCTION

Two samples with unidentified Diplommatinidae, collected by Mr. and Mrs. Hemmen, Wiesbaden, in southern Thailand and northern Peninsular Malaysia, were received for identification. The material proved to belong to three species.

A search for descriptions in the relevant literature, in particular Van Benthem Jutting (1952, 1961), Kobelt (1902), and Vermeulen (1996), failed and, therefore, these species are considered new to science. According to the identification keys published by Kobelt (1902: 378) and Vermeulen (1996: 90) they should be classified with the genus *Arinia*. However, Van Benthem Jutting (1952: 49), on the basis of a single sample, described a species from Peninsular Malaysia, that shares some of the conchological characters with our three new species, as *Opisthostoma (Plectostoma) umbilicatum*. According to Van Benthem Jutting (1952: 51): "The general architecture and inconspicuous deviation in the last whorl, however, place it in *Opisthostoma*". In a later publication, Van Benthem Jutting (1961: 39) mentioned an additional record from "Gunong Sinyum, Pahang" for *O. (P.) umbilicatum*. Both samples are in the Zoological Museum (Amsterdam). While comparing the specimens, it turned out that these are not conspecific. The shells from Gunong Sinyum represent an additional new species.

The generic assignment of these species is problematic. Their shells do not show the sinistroid coiling (Gittenberger, 1995: 19) of the last whorl, which is supposed to characterize *Opisthostoma*. Since in two of the new species the tuba of the shells shows a slight deviation, however, I provisionally accept for those species the generic name *Opisthostoma*, following Van Benthem Jutting. The subgenera *Opisthostoma* s.s. and *Plectostoma* are in use for species with relatively small (shells less than 2 mm broad or high) and larger shells, respectively. Two of the new species are not classified in *Opisthostoma* as they are regularly dextral and do not show any trace of deviation of the last whorl. These species are provisionally considered to belong to the genus *Arinia*. For additional data on the various, poorly defined, genus-group nominal taxa, see Vermeulen (1996).

Abbreviations for shell characters: B, shell width; H, shell height. For collections: RMNH, National Museum of Natural History (formerly Rijksmuseum van Natuurlijke Historie), Leiden; HW, J. & C. Hemmen, Wiesbaden; CUIZM, Chulalongkorn University Zoological Museum, Bangkok; ZMA, Zoölogisch Museum, Universiteit van Amsterdam, Amsterdam.

SYSTEMATIC PART

Genus *Opisthostoma* W. T. & H. Blanford, 1860. Type species: *O. nilgircum* W. T. & H. Blanford, 1860 (India)
Subgenus *Plectostoma* H. Adams, 1865. Type species: *P. decrespignyi* H. Adams, 1865 (Borneo).

Opisthostoma (*Plectostoma*) *sinyumensis* spec. nov. (figs 1, 6-7)

Material. — Pensinsular Malaysia, Pahang, Gunong Sinyum; vi.1954; M.W.F. Tweedie leg., ex. Raffles Museum, Singapore (ZMA/holotype; ZMA/58 paratypes, RMNH 81804/2 paratypes).

Description. — Shell dextral, ovoid, light brown, shining and transparent; with 5.5 distinctly convex whorls, separated by a rather deep suture, and provided with a distinct, very fine, spiral striation. Last whorl about as broad as the penultimate one. Radial ribs rather thin, increasingly higher and sharper on the lower whorls; on the penultimate whorl 7-8 ribs/mm, above the aperture 8-9 ribs/mm. The constriction consists only of a transversal thickening on the palatal side of the body-whorl. The tuba is 0.75 whorl long and turns off slightly inwards. Umbilicus very narrow. Peristome double; the inner peristome protruding distinctly from the outer one. In frontal view, the aperture touches the middle of the previous whorl and is hardly turned downwards. Operculum unknown.

Dimensions: H 1.9-2.2 mm; B 1.2-1.3 mm.

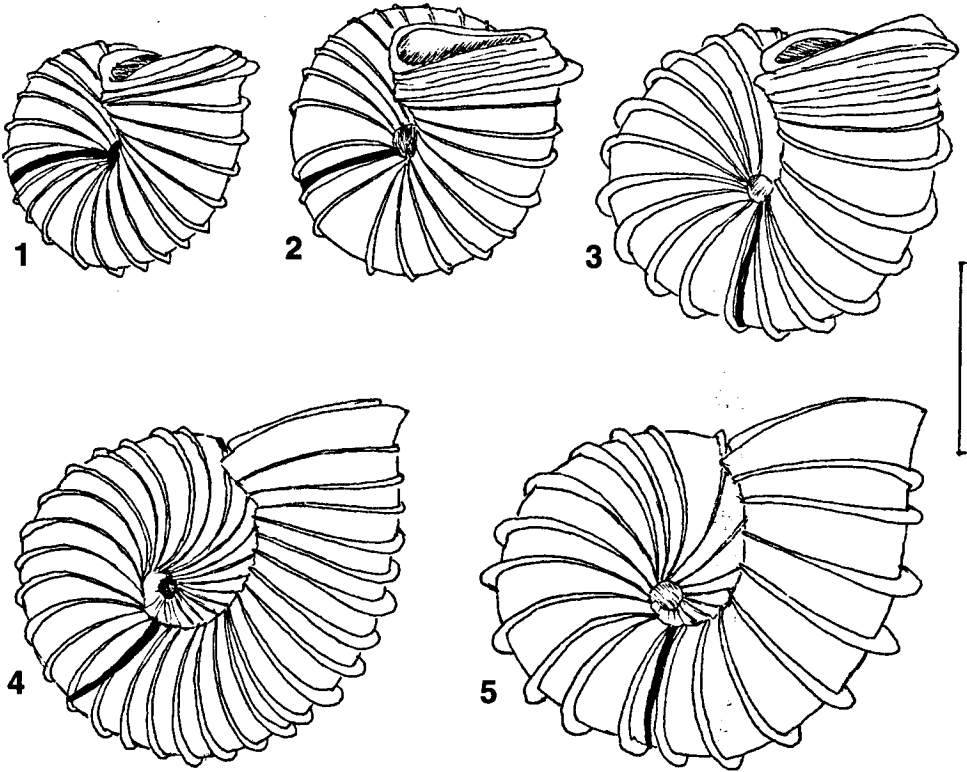
Derivatio nominis. — Named after the type locality Gunong Sinyum.

Remarks. — The species is very similar to *O. umbilicatum* Van Benthem Jutting, 1952, but its shells have one whorl less and are smaller (*O. umbilicatum*, H 2.8-3.1 mm; figs 2, 8-9) and slender ovoid instead of turreted.

Opisthostoma (*Plectostoma*) *christae* spec. nov. (figs 3, 10-11)

Material. — Pensinsular Malaysia, Kelantan, road 8 Gua Musang to Machamg, right side off km 24.9; 04°55'022"N, 102°06'934"E; J. & C. Hemmen (MAL 162/00) leg. (RMNH 81805/holotype, 81806/1 paratype; HW/20 paratypes).

Description. — Shell dextral, high conical, reddish brown, shining and transparent; with 5.75 distinctly convex whorls, separated by a rather deep suture, and without a spiral striation. The last whorl is wider than the penultimate one. Radial ribs rather thin, increasingly much higher and sharper on the lower whorls; on the penultimate whorl 5-6 ribs/mm, above the aperture with 5-6 ribs/mm. The constriction consists of a transversal thickening all around, and a small and low, longitudinal tubercle at the angular edge, just entering the transversal thickening. The tuba is 0.5 whorl long and hardly turns off inwards. Umbilicus very narrow. Peristome double; the inner peristome only slightly protruding from the outer. In frontal view, the aperture touches the previous



Figs 1-5. 1, *Opisthostoma (Plectostoma) sinyumensis* spec. nov., paratype, Peninsular Malaysia, Pahang, Gunong Sinyum. 2, *Opisthostoma (Plectostoma) umbilicatum* Van Benthem Jutting, 1952, paratype, Peninsular Malaysia, Kota Tongkat. 3, *Opisthostoma (Plectostoma) christae* spec. nov., paratype, Peninsular Malaysia, Kelantan, road 8 Gua Musang to Machang, right side off km 24.9. 4, *Arinia panhai* spec. nov., paratype, Thailand, Yala prov., Kachong Cave. 5, *Arinia jensi* spec. nov., paratype, Peninsular Malaysia, Kelantan, road 8 Gua Musang to Machang, right side off km 24.9. Scale bar 1 mm.

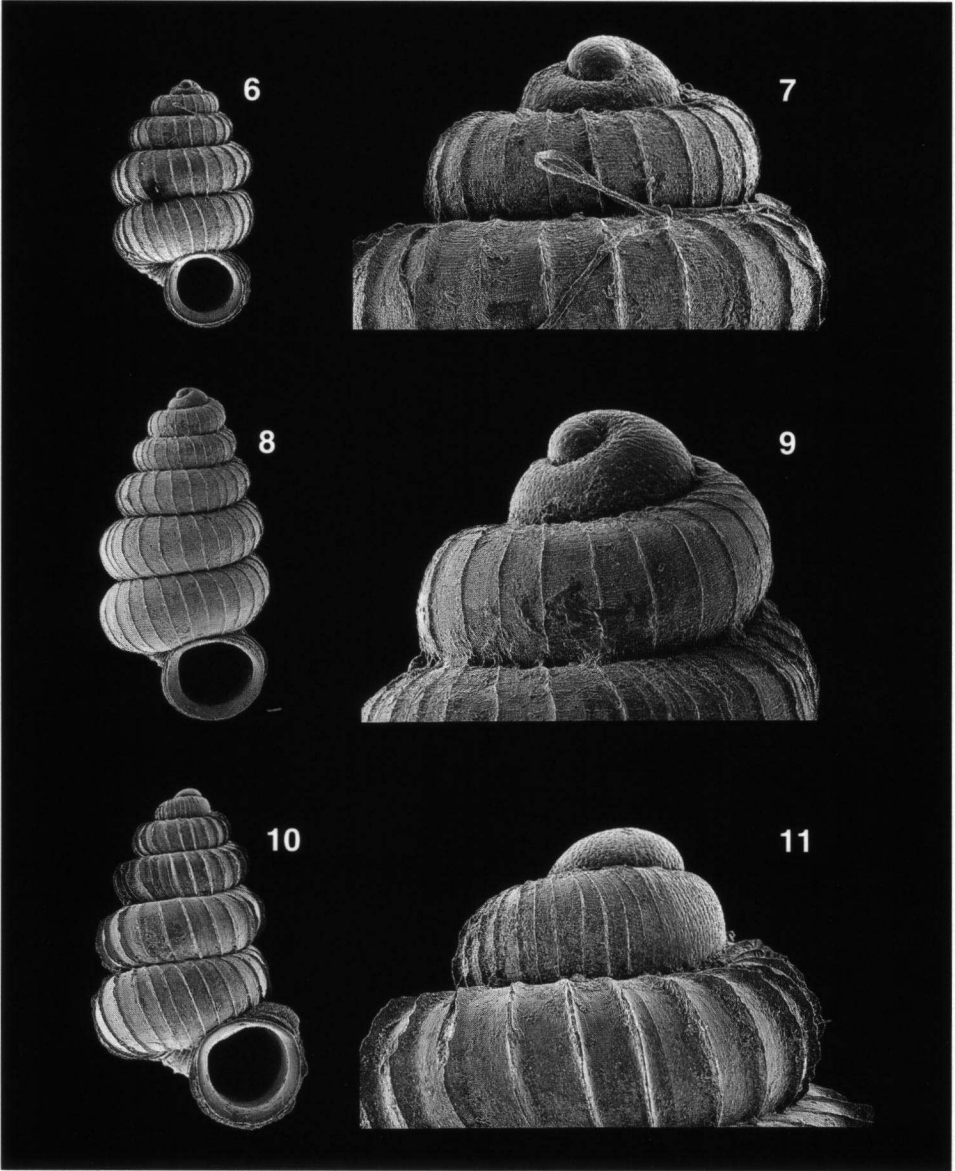
whorl at the right of the middle and is hardly turned upwards. Operculum with a distinct spiral ridge on its outer surface.

Dimensions: H 2.7-3.1 mm, B 1.7-2.5 mm.

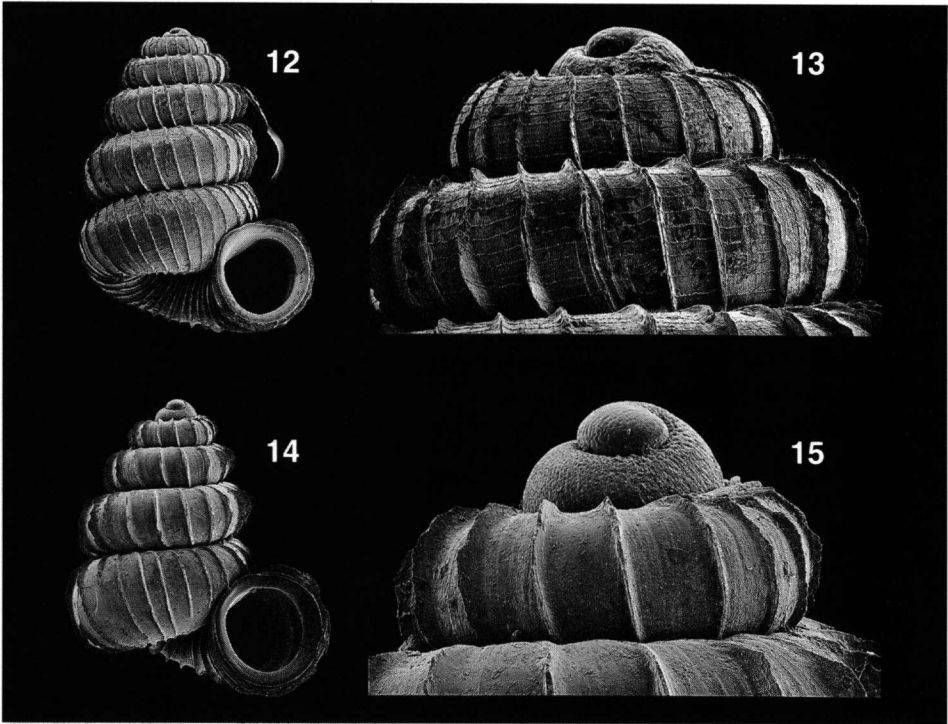
Derivatio nominis. — Named after my friend Christa Hemmen, who found this species.

Remarks. — From the conchologically most similar species *O. umbilicatum* it can be distinguished by the absence of a spiral striation, the more convex whorls, the different attachment of the aperture, and the shorter tuba.

Genus *Arinia* H. & A. Adams, 1856. Type species: *Cyclostoma minus* G. B. Sowerby, 1843 (Philippines).



Figs 6-11. *Opisthostoma (Plectostoma)* spec. 6-7, *O. (P.) sinyumensis* spec. nov., paratype, Peninsular Malaysia, Pahang, Gunung Sinyum, actual height 2.27 mm. 8-9, *O. (P.) umbilicatum* Van Benthem Jutting, 1952, paratype, Peninsular Malaysia, Kota Tongkat, actual height 3.0 mm. 10-11, *O. (P.) christae* spec. nov., paratype, Peninsular Malaysia, Kelantan, road 8 Gua Musang to Machang, right side off km 24.9, actual height 3.13 mm.



Figs 12-15. *Arinia* spec. 12-13, *A. panhai* spec. nov., paratype, Thailand, Yala prov., Kachong Cave, actual height 2.73 mm. 14-15, *A. jensi* spec. nov., paratype, Peninsular Malaysia, Kelantan, road 8 Gua Musang to Machang, right side off km 24.9, actual height 2.67 mm.

Arinia panhai spec. nov. (figs 4, 12-13)

Material. — Thailand, Yala province, Kachong Cave, 2.6 km off km 45.7 road 410 (Yala Bretong); 06°55'022"N, 101°12'160"E; 4.x.2000; J. & C. Hemmen (TH 88/00) leg. (RMNH 80809/holotype, 81810/2 paratypes; CUIZM/2 paratypes; HW/45 paratypes).

Description. — Shell dextral, conical, light brown, shining and transparent; with six moderately convex whorls, separated by a deep suture, and with a distinct spiral striation. The penultimate whorl slightly wider than the body-whorl. Radial ribs rather thin, increasingly higher and sharper on the lower whorls; on the penultimate whorl 6-8 ribs/mm, above the aperture 7-8 ribs/mm. The constriction consists of a transversal thickening all around, and of a small but distinct, longitudinal tubercle at the angular edge, just entering the transversal thickening. The tuba is 0.7 whorl long. Umbilicus widely open, eccentric, showing part of the penultimate whorl. Peristome doubled, the inner peristome only slightly protruding from the outer. The aperture is situated to the right of the middle of the previous whorl and clearly turned upwards. Operculum corneous, with a distinct spiral ridge on its outer surface

Dimensions: H 2.5-2.7 mm, B 1.9-2.2 mm.

Derivatio nominis. — Named after my friend Dr. Somsak Panha, Bangkok.

Remarks. — See the remarks with the next species.

Arinia jensi spec. nov. (figs 5, 14-15)

Material. — Peninsular Malaysia, Kelantan, along right side of road 8 from Gua Musang to Machang at rkm 24.9; 04°55'022"N, 102°06'934"E; J. & C. Hemmen (MAL 162/00) leg. (RMNH 81807/holotype, 81808/2 paratypes; HW/250 paratypes)

Description. — Shell dextral, rather low conical, light brown, shining and transparent; with 5.5 distinctly convex whorls, separated by a rather deep suture, and without a spiral striation. The body-whorl is wider than the penultimate whorl. Radial ribs rather thin, increasingly much higher and sharper on the lower whorls; on the penultimate whorl 4-6 ribs/mm, above the aperture with 4-6 ribs/mm. The constriction consists of a transversal thickening all around, and of a small and low, longitudinal tubercle at the angular edge, just entering the transversal thickening. The tuba is 0.5 whorl long. Umbilicus narrow. Peristome flaring, doubled, the inner peristome only slightly protruding from the outer. In frontal view, the aperture is situated at the right of the middle of the previous whorl and clearly turned upwards. Operculum corneous, with a distinct spiral ridge on its outer surface

Dimensions: H 2.4-2.7 mm, B 2.2-2.4 mm.

Derivatio nominis. — Named after my friend Jens Hemmen, who found this species.

Remarks. — This species lives sympatrically with *Opisthostoma (Plectostoma) christae*. It can easily be distinguished however, since in *A. jensi* the aperture is turned upwards, the umbilicus is narrower, and the peristome is flaring. Conchologically *A. jensi* differs from *A. panhai* by the lack of a spiral striation, the umbilicus which is not eccentric, the lower number of ribs per mm, and the constriction situated at 0.5 whorl from the aperture.

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