

**A new species of the genus *Notharinia* Vermeulen,  
Phung & Truong, 2007 from Peninsular Malaysia  
(Mollusca, Caenogastropoda, Pupinidae)**

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A new species of the terrestrial caenogastropodan family Diplommatinidae is described from Peninsular Malaysia, viz. *Notharinia linnei*.

### Introduction

Although the malacology in West Malaysia (i.e., the Malay peninsula) has a history of about 200 years, and the malacofauna is very rich (Maassen, 2001, published a checklist of the non-marine molluscs from this area and enumerated 515 taxa), our knowledge of many genera is still very poor. The large species from genera such as *Cyclophorus*, *Dyakia*, *Hemiplecta* are known for a long time, being first collected by travellers and naturalists, but in particular among the minute and inconspicuous species a large number of new ones awaits description.

Limestone hills in the region harbour a particularly rich and endemic fauna (Clements et al., 2006). These habitats are under increasing threat, especially from quarries. A characterisation of the flora and fauna and threats of the limestone hills in the Kinta Valley (West Malaysia) was published some years ago (Davison, 1991).

In 2005, I visited several interesting localities including the Gua Charas Caves near Panching, Pahang Province, West Malaysia. Besides the endemic species already known from this locality, a small sample of a new species apparently belonging to the genus *Arinia* was collected. Recently, Vermeulen et al. (2007) published a paper in which the new genus *Notharinia* is described for three Vietnamese species. It turned out that the newly collected species from Gua Charas fits the description of this genus. Its distribution range is expanded 900 km with this new record.

### Abbreviations

For shell characters: W = width; H = height. For collections: JV = J.J. Vermeulen, Leiden (The Netherlands); MD = W.J.M. Maassen, Duivendrecht (The Netherlands) (material to be deposited in RMNH); RMNH = National Museum of Natural History Naturalis (formerly Rijksmuseum van Natuurlijke Historie), Leiden, The Netherlands; ZRC = Zoological Reference Collection, Raffles Museum of Biodiversity Research, National University of Singapore.

### Systematic part

#### Family Pupinidae L.Pfeiffer, 1853

Genus *Notharinia* Vermeulen, Phung & Truong, 2007.

Type species *N. attenuata* Vermeulen, Phung & Truong, 2007 (Vietnam).

*Notharinia linnei* spec. nov.

(figs 1-8)

Material examined (holotype and paratypes).— West Malaysia, Province Pahang, Gua Charas (Charas Caves), 26 km N of Panching, NW of Kuantan, at the foot of the hill in leaf litter among rocks near the stairs to the sanctuary; leg. W. J. M. Maassen, viii.2005; N 4°29'09.58" E 102°54'41.39" (RMNH 109057/ holotype, 109058/3 paratypes, ZRC/2, JV/2, MD MAL.31/5).

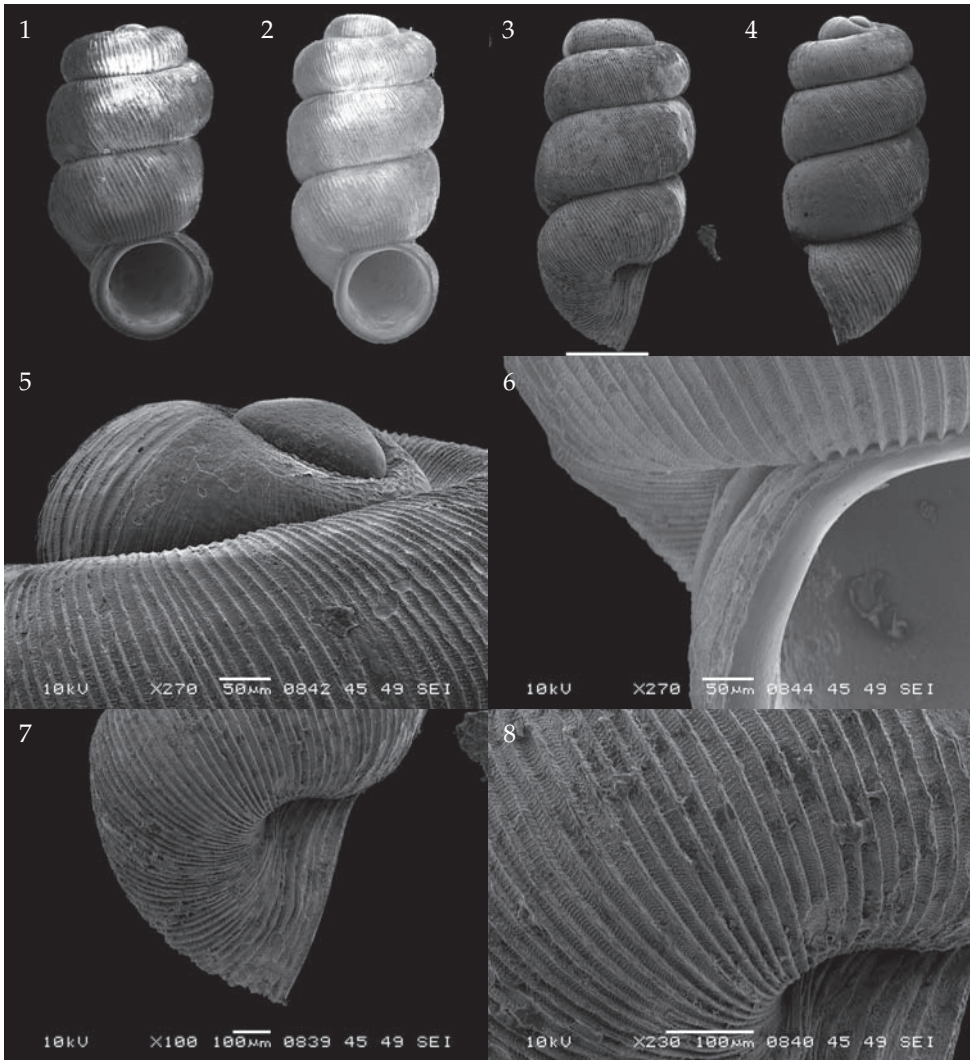
Description.— Shell very small, dextral, quite delicate, white, translucent, almost cylindrical, sometimes slightly bulging at the penultimate whorl, top widely rounded to somewhat truncated. Top whorl inclined, sculptured with very fine radial striation and some spiral ridges (just visible on fig. 5, a somewhat eroded specimen). Shell with 4.5-5.0 convex whorls. Suture well impressed. Radial ribs straight, distinct, rather low, sharp and thin, very densely placed (18-20 ribs/0.5 mm on body whorl; 21-22 ribs/0.5 mm on penultimate whorl). A very fine, distinct, spiral striation (only visible under high magnification, and not mentioned in the original description of the genus) is present except for the protoconch, which has quite a different sculpture (see above). No internal constriction could be observed. Umbilicus closed, but the last whorl loosely coiled so that an umbilicus-like depression is present. Peristome well rounded, double, somewhat thickened and somewhat reflexed only in fully mature specimens, sometimes more or less double at the columellar and palatal side; parietal side attached to the previous whorl almost at the underside of the previous whorl. In right lateral view, the aperture looks somewhat sinuous and slightly tilted with regard to the coiling axis.

Dimensions (n = 10): H 1.58 mm - 2.16 mm, 2.00 mm on average; W 0.84 mm - 0.99 mm, 0.95 mm on average (holotype: H 2.07 mm, B 0.99 mm).

Derivatio nominis.— The species is named after the father of taxonomy, Carl von Linné, at the occasion of the 250th anniversary of the publishing date of the tenth edition of his "Systema Naturae", the starting point of the binominal nomenclature.

Remarks.— The considerable differences in shell size are most probably due to sexual dimorphism, the smaller specimens probably representing males, the larger ones the females. This phenomenon is not uncommon among operculated families, as was recently documented and described in two papers (Gofas, 2001; Richling, 2004) based on anatomically investigated material of two different families.

The inclusion of the genus *Notharinia* in the family Pupinidae by Vermeulen et al. (2007) is open to debate. *Notharinia* strongly resembles *Arinia*, which is attributed to the family Diplommatinidae. I would prefer to include *Notharinia* next to *Arinia* in the family Diplommatinidae, because the two genera differ in only a single character. The *Arinia* species are characterized by a circular constriction inside the ultimate or penultimate whorl. In *Notharinia* such a constriction is missing.



Figs 1-8. *Notharinia linnei* spec. nov.; West Malaysia, Pahang Province, Gua Charas (Charas Caves), 26 km N of Panching, NW of Kuantan, at the foot of the hill in leaf litter among rocks near the stairs to the sanctuary; viii.2005; N 4°29'09.58" E 102°54'41.39". 1, paratype (RMNH 109058, shell height 1.58 mm); 2, holotype (RMNH 109057, shell height 2.07 mm); 3, left lateral view, paratype (RMNH 109058, shell height 1.98 mm); 4, right lateral view, paratype (RMNH 109058, shell height 2.16 mm); 5, detail top whorl; 6, detail columellar side aperture; 7 & 8, details umbilical region.

Because a famous Buddhist sanctuary is situated in the caves, the hill is likely to be protected against limestone mining. Although the place is surrounded by palm plantations without any substantial remains of the original flora left at the foot of the rocks, a large part of the original mollusc fauna could still be found.

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