

Three new species of clausiliids (Gastropoda, Pulmonata, Clausiliidae) from Indonesia

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Three new species of *Oospira* Blanford, 1872, namely *O. dancei* Dharma & Szekeres spec. nov. (Lampung Province, Batukeramat), *O. butoti* Grego & Szekeres spec. nov. (Aceh Province, Ratawali), and *O. acehensis* Dharma & Szekeres spec. nov. (Aceh Province, Pantansile), are described from Sumatera, Indonesia. The zoogeographical affinities of these taxa are discussed, and new locality data of other, little-known Indonesian clausiliids are presented.

Key words: Gastropoda, Pulmonata, Clausiliidae, *Oospira*, taxonomy, Indonesia, Sumatera.

INTRODUCTION

Recent improvements of travel conditions and better access to remote parts of South American and Asian countries resulted in a renewed interest in non-European groups of the Clausiliidae family. Whereas in certain countries, such as China, a large number of new species have been discovered, the Indo-Malayan region was little affected by this trend. Loosjes's (1953) fundamental monograph of the Indo-Australian clausiliids was followed by only a few important publications (Loosjes, 1963; Loosjes, 1965; Dharma, 1992 and 2005; Thompson & Dance, 1983) and, despite a recent taxonomic rearrangement of the species (Nordsieck, 2002), their knowledge is not much better than it was half a century ago.

Our study is based on material that was obtained by the first author during the past three decades. In addition to some important novel distribution data, we describe three new species of the genus *Oospira* Blanford, 1872, two of which are from the hitherto little-studied Aceh Province. According to current interpretations (Nordsieck, 2002 and 2007), all these new species belong to the nominate subgenus of *Oospira*. Here we follow this classification but, as we pointed out earlier (Grego & Szekeres, 2008), we feel that this taxon of 50 highly diverse species may need to be re-assessed as an independent genus, and divided to several subgenera.

The type material of the new species can be found in the Field Museum of Natural History, Chicago (FMNH), Florida Museum of Natural History, Gainesville (UF), Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main (SMF), Hungarian Natural History Museum, Budapest (HNHM), Muséum d'Histoire Naturelle, Genève (MHNG), Muséum National d'Histoire Naturelle, Paris (MNHN), Museum Zoologicum Bogoriense, Bogor (MZB), Nationaal Natuurhistorisch Museum, Leiden (RMNH), National Museum of Natural History, Washington (USNM), Natural History Museum, London (BMNH), Zoologische Staatssammlung, München (ZSM), and in the pri-

vate collections of S. Peter Dance (DA, Carlisle), Bunjamin Dharma (DH, Jakarta), Jozef Grego (GR, Banská Bystrica), and Miklos Szekeres (SZ, Szeged).

SYSTEMATIC PART

Family Clausiliidae J.E. Gray, 1855

Subfamily Phaedusinae A.J. Wagner, 1922

Oospira dancei Dharma & Szekeres spec. nov. (fig. 1a-d)

Material. – Indonesia, Lampung Province, Batukeramat (5°27' S, 104°43' E), 700 m, lg. Sukri, August, 1986. Holotype MZB Gst 13819; paratypes BMNH 20090076/2, FMNH 312452/2, HNHM 97040/2, MHNG 63171/2, MNHN 21400/2, MZB Gst 13820, RMNH 113659/2, SMF 332857/2, UF 426896/2, USNM 1124193/2, ZSM Mol 20090228/2, DA/2, DH/4, GR/3, SZ/3.

Diagnosis. – Medium-sized *Oospira* species with marginal lamella subcolumellaris and only two, ventrolateral palatal plicae. It differs from *O. thrausta* (Loosjes, 1953) by its larger size, more elongated shell and deeper positioned clausiliar structure, whereas from *O. scalariformis* (Loosjes, 1953) by the less elongated shell.

Description: – The glossy, transparent shell of light yellowish-corneous colour consists of 9 ½ to 10 ⅓ whorls. Except the protoconch, its surface is covered by very fine and dense striae. Below the deep suture the sculpture becomes somewhat stronger, forming densely spaced papillae. The outline of the last whorl is somewhat flattened on the sides, but becomes fully rounded at the basis.

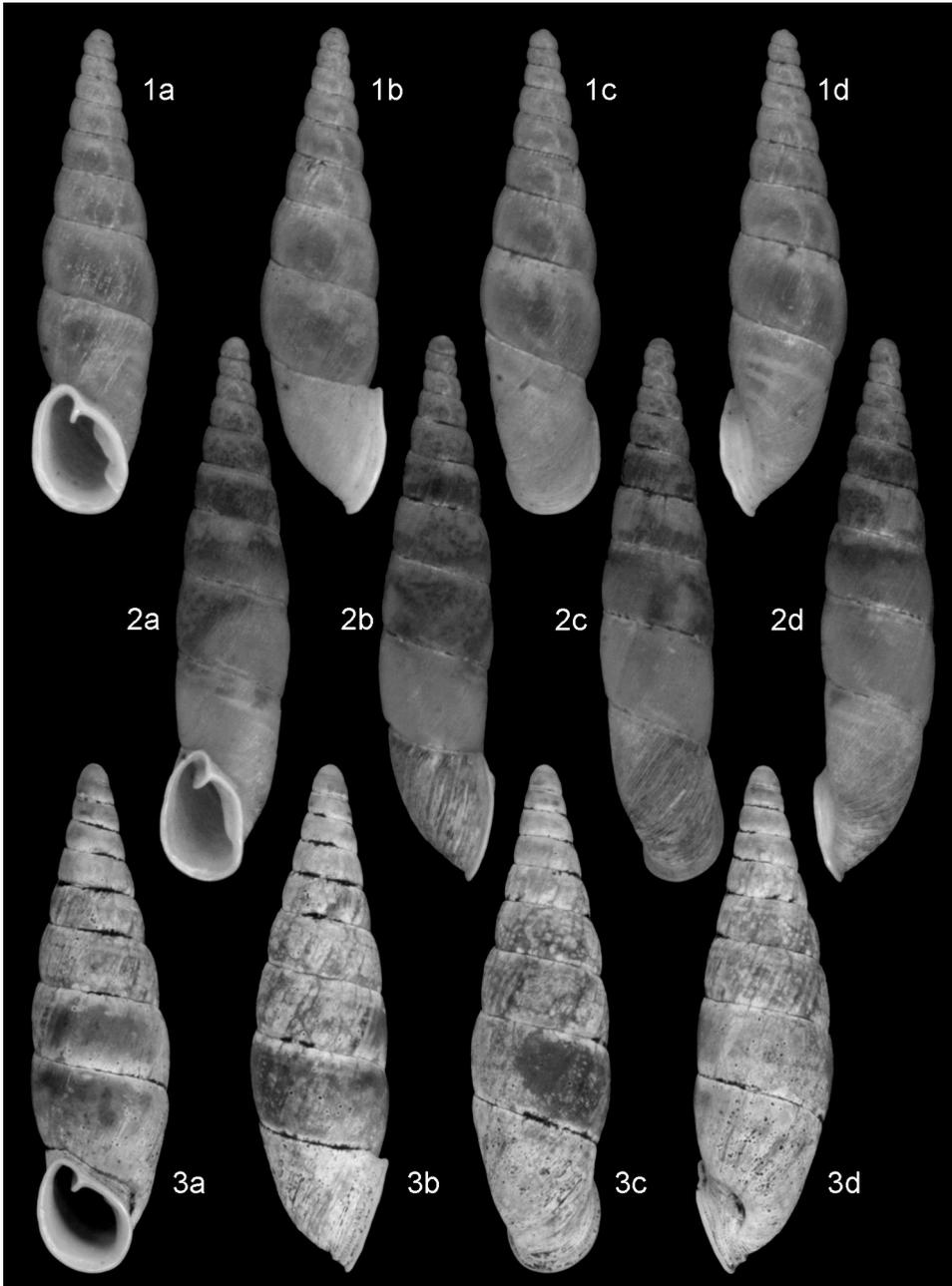
The pear-shaped aperture is large, its height is about one-fourth of that of the entire shell. The peristome is protracted, with swollen, whitish margin that stands well apart from the adjacent whorl on the columellar side. At the upper corner of the peristome a wide sinulus is formed by the lamella superior. This lamella is highest behind the peristome margin. Inward it makes a smooth transition to the lamella spiralis. The spiralis gradually heightens till it reaches the ventral side, then ends at the beginning of the last whorl, as deep as the lamella inferior. The steeply descending lamella inferior does not reach the peristome margin. Its lower end is near to that of the more emerged, marginal lamella subcolumellaris. The plica principalis starts ventrally and runs to the dorsal side. Ventrolaterally there are two strong palatal plicae of equal length. The strongly bent clausilium plate has almost parallel sides and an abruptly pointed tip.

Shell height 15.1-18.9 mm, shell width 3.7-4.3 mm, aperture height 4.3-5.1 mm, aperture width 2.9-3.5 mm.

Biotope: – The type material was collected live, together with specimens of *Juttingia schlueteri* (O. Boettger, 1879), from under leaf litter.

Etymology: – The new species is dedicated to and named after S. Peter Dance, former curator of the National Museum of Wales (Cardiff) and the Natural History Museum (London), who inspired the research of Indonesian land snails.

Remarks: – *O. dancei* spec. nov. resembles the larger, more slender *O. scalariformis* (Loosjes, 1953), which occurs in Malaysia, Sarawak State, approximately 1000 km north-east of the type locality of the new species across the Karimata Strait. Among the species of Sumatera it is closest to *Oospira thrausta* (Loosjes, 1953), known from Mt. Kerinci of the Padang Highlands. That species, however, has smaller, more compact shell with conspicuously papillate suture and less deeply positioned, lateral palatal plicae.



Figs 1-3. Three new *Oospira* species from Indonesia. 1a-d, *Oospira dancei* Dharma & Szekeres spec. nov., holotype (MZB Gst 13819), H = 16.7 mm. 2a-d, *Oospira butoti* Grego & Szekeres spec. nov., holotype (MZB Gst 13821), H = 19.8 mm. 3a-d, *Oospira acehensis* Dharma & Szekeres spec. nov., holotype (MZB Gst 13822), H = 23.1 mm.

Oospira butoti Grego & Szekeres spec. nov. (fig. 2a-d)

Material: – Indonesia, Aceh Province, Ratawali (4°40'30" N, 96°48'0" E), NW of Takengon, 1600 m, lg. H. Gordah, December, 1996. Holotype MZB Gst 13821; paratypes FMNH 312459, RMNH 113660, SMF 332858, DH/2, GR/1, SZ/1.

Diagnosis: – Medium-sized, slender *Oospira* species with finely striate sculpture, low lamella inferior and retracted subcolumellaris.

Description: – The spindle-shaped, light to darker yellowish-brown shell consists of 9 ¾ to 10 ½ flat whorls. The straight, uniform, very fine and dense striae covering the whorls give the surface a characteristic silky appearance.

The aperture is moderately wide, its height is nearly one-fifth of that of the shell. The peristome is elongated, angular, with almost straight parietal and columellar margins that diverge slightly toward the rounded basis. The thin lamella superior makes a smooth transition to the spiralis, which becomes higher as it extends 1 ⅓ whorls inward, ending deeper than the lamella inferior. The lamella inferior descends very steeply to near the columellar angle of the peristome, where it ends before reaching the margin. In perpendicular view at the aperture it looks only weakly emerged and parallel with the columellar rim. The lamella subcolumellaris is retracted, not visible through the aperture. The relatively short plica principalis starts ventrally and ends dorsolaterally. There are four (occasionally five) ventrolateral palatal plicae, of which the lowest is short, and the uppermost is longest. The arched clausilium plate has parallel sides and an abruptly pointed tip.

Shell height 17.7-19.8 mm, shell width 3.8-4.2 mm, aperture height 4.5-4.8 mm, aperture width 2.9-3.2 mm.

Biotope: – The specimens of the type series were collected live on the ground of a secondary forest, near a spring.

Etymology: – This species is named after the late Louis J. M. Butot, a devoted malacologist and former curator of the Bogor Zoological Museum.

Remarks: – The new species seems to be related to *O. wuellerstorfi* (Zeilebor, 1867) of the Nicobar Islands (India, about 200 km off the NW coast of Aceh) and *O. jacobsoni* (Loosjes, 1953) of Simeulue Island (Aceh Province). It differs from *O. wuellerstorfi* by its more spindle-shaped shell and the presence of more palatal plicae, which end less deep than the plica principalis. Compared to *O. jacobsoni*, it has smaller shell and, instead of only one, four to five palatal plicae.

Oospira acehensis Dharma & Szekeres spec. nov. (fig. 3a-d)

Material: – Indonesia, Aceh Province, Pantansile (4°40'20" N, 96°47'15" E), NW of Takengon, 1600 m, lg. H. Gordah, December, 1996. Holotype MZB Gst 13822.

Diagnosis: – Medium-sized *Oospira* species with inflated shell, characteristic callus around the columellar margin of the peristome, weakly emerging lamella inferior, and retracted lamella subcolumellaris.

Description: – The strongly built, tumid, yellowish-brown shell consists of 10 ½ whorls. The rapidly widening whorls have very smooth, glossy surface. Only the neck has stronger sculpture, with striae just behind the peristome margin.

The oval, light brown peristome has a strongly thickened, but only moderately inflexed margin. The free and protracted columellar side of this margin is separated from the adjacent whorl by a callous thickening of the shell. The well-developed lamella superior is highest behind the edge of the peristome. Inwards it makes a smooth transition into

the much lower lamella spiralis. The little-emerged lower part of the lamella inferior descends steeply, then turns abruptly toward the aperture and ends at the columella without reaching the peristome margin. Its end is barely visible in perpendicular view. The withdrawn lamella subcolumellaris cannot be viewed through the aperture. The plica principalis runs from the ventrolateral to the dorsal side. The three wide palatal plicae of the lateral side decrease in length toward the basis. The internal structure of the lamellae and the clausilium were not studied.

Shell height 23.1 mm, shell width 6.3 mm, aperture height 5.1 mm, aperture width 4.3 mm.

Biotope: – The type specimen was collected live in leaf litter among ground vegetation, near a coffee plantation with scattered banana trees.

Etymology: – The species is named after Aceh Province of Indonesia, where it has been discovered.

Remarks: – The shell structure of this species is quite unique among the *Oospira* species of the Indo-Malayan region. It is easily distinguishable by the strong callus that fills in the space between the body whorl and the columellar margin of the peristome.

ZOOGEOGRAPHICAL CONSIDERATIONS

The three newly described species have different zoogeographic affinities. *O. dancei* spec. nov. from southeastern Sumatera (fig. 4) seems to be related to a group of *Oospira* species occurring mainly farther to the east, namely in Jawa [e.g. *O. cornea* (Küster, 1844), *O. orientalis* (L. Pfeiffer, 1842), etc.] and northwestern Kalimantan (*O. scalariformis*). By contrast, the relatives of *O. butoti* spec. nov. from central Aceh (fig. 4) are insular species known from Simeulue and the Nicobar Islands, about 120 and 200 km off the Aceh coast, respectively. And finally *O. acehensis* spec. nov., also from central Aceh, only about 1.5 km southwest of the type locality of *O. butoti* spec. nov. (fig. 4), appears to be an element only distantly related to other species of the region.

The rather fragmentary knowledge of the Indonesian clausiliids is due to the scarcity of recent collections, and also the relatively low abundance of these snails under tropical conditions. The material that has been obtained by the first author during the past couple of decades provided some important new distribution data, which are as follows:

Juttingia schlueteri (O. Boettger, 1879) was collected together with *O. dancei* spec. nov. in Batukeramat, Lampung Province. Originally this species was described on the basis of a damaged specimen found in a coffee shipment from the East Indies (O. Boettger, 1879). Loosjes (1963) re-described and figured the type specimen (SMF 62668), and pointed out that its origin is arguably Sumatera or Jawa. Our record is the first exact locality of this species, and suggests that SE Sumatera could be the likely origin of the type specimen.

Juttingia (Pseudohemiphaedusa) loosjesi Nordsieck, 2002, identified by Loosjes (1953) as *excurrens* E. Martens, 1864 and then re-named by Nordsieck (2002), was found at Beringintiga near Curup, Bengkulu Province (lg. B. Dharma, 1995). So far this clausiliid has been known only from two other localities, Pagaralam and the headwaters of the Musi River, of the same region.

Phaedusa dorsoplicata Loosjes, 1953 was found at Batubutok near Tanahgrogot, Kalimantan Timur Province (lg. B. Dharma, 1991).

Paraphaedusa schwaneri (E. Martens, 1867) was collected together with *Phaedusa dorsoplicata* at Batubutok.

These distribution records and the description of the new species provide only little new information on the Clausiliidae fauna of Indonesia. But the very limited progress that has been seen in this field since the publication of Loosjes's (1953) monograph makes these data particularly valuable.

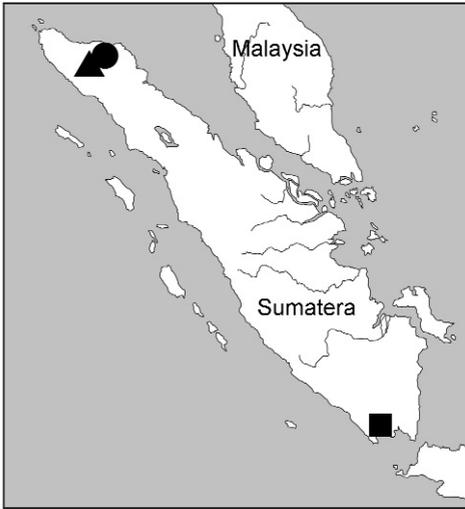


Fig. 4. Overview map of Sumatra with the localities of *Oospira dancei* Dharma & Szekeres spec. nov. (square), *Oospira butoti* Grego & Szekeres spec. nov. (circle), and *Oospira acehensis* Dharma & Szekeres spec. nov. (triangle).

ACKNOWLEDGEMENTS

The authors are grateful to Zoltán Fehér (Malacology Department, Hungarian Natural History Museum) for his help in preparing the photographic images. Thanks are also due to Herianto Gordah and Sukri for their valuable contribution during the field-work.

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