A new species of *Ditropopsis* E.A. Smith, 1897 (Mollusca: Architaenioglossa: Cyclophoridae) from the Papuan Region

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Abstract

A new *Ditropopsis* species from the Central Moluccas, *D. ciliata* sp. nov., is described and illustrated. New records are given for two insufficiently known species.

Zusammenfassung

Ditropopsis ciliata sp. nov., eine neue Art aus Zentral-Molukken ist beschrieben und abgebildet. Neue faunistische Angaben an zwei wenig bekannte *Ditropopsis*-Arten sind gegeben.

Key words: Gastropoda, Cyclophoridae, *Ditropopsis*, Lease Islands, New Guinea, Waigeo, new species

Introduction

The Papuan species of the genus *Ditropopsis* E.A.Smith, 1897 were recently revised (Greķe 2011, 2014). Twenty seven species (25 named, and 2 not yet named because of insufficient material) have been reported from New Guinea, the Moluccas, and adjacent islands. One additional species was discovered on Lease Islands (Central Moluccas) in 2016. Below I describe and illustrate this new species. Additional data on the distribution of two recently described species from the Doberai Peninsula of New Guinea and Raja Ampat Islands are given.

Materials and methods

Specimens were sampled manually from under fallen leaves, in leaf litter, and under pieces of rotten wood. Specimens are preserved in 99 % ethanol. Specimens were studied using a Leica S6D stereomicroscope and photographed using a Canon EOS 77D DSLR camera attached to a stereomicroscope. Multiple photographs were taken at different focal planes and reassembled using CombineZP software. The holotype of the new species is deposited at the Naturkundemuseum Erfurt (NME). Author's comments are placed in square brackets. Type specimens provided with additional black-framed printed labels 'Holotypus' or 'Paratypus' on red paper.

Descriptions and additional data

Ditropopsis (s. str.) ***ciliata* sp. nov.** (Figs 1–12)

Holotype: INDONESIA E, Central Moluccas, Lease Islands, southern arm of Ambon Is., Ambon (kota) 5 km E, Soya vill ~1 km E, 03°42'36"S, 128°13'16"E, 17.VIII.2016, secondary lowland rainforest, leaf litter, leg. L.Wagner [subadult with peristome not fully developed, NME].
Paratypes: same data as holotype [1 subadult, collection K.Greķe, Rīga]; INDONESIA E, Central Moluccas, Lease Islands, Haruku Is., Pelauw vill. 3.3 km S, 03°32'30"S, 128°27'15"E, 150–170 m, 18.VIII.2016, secondary lowland rainforest, leaf litter, leg. L.Wagner [1 adult, collection K.Greķe, Rīga].

Description: Shell shiny, transparent, pale brown. Measurements: holotype: shell diameter 4.3 mm, height 2.5 mm. Measurements: subadult paratype from Ambon: shell diameter 4.5 mm, height 2.9 mm. Shell shape low conical to conical, with 2½ apical whorls detached from the spire. Whorls about $4^{1}/_{3}$, the two embryonic whorls are smooth, subglobose, indistinctly tilted obliquely with regard to the coiling axis (Fig. 6). Shell delicately radially striate (Fig. 12). Spiral striae lacking. There are two strong and acute carinae: the first, peripheral, partly covers the suture, the second is situated on the base. Short periostracal ridges developed along the growth lines and produce irregular brush or cilia shaped processes on the carinae (Figs 10–11). The processes are unique in this species and not yet documented in any other *Ditropopsis*. The processes are fragile and easily broken, so are absent in old

specimens (in this case growth lines of these processes remain visible inside the carinae). There are about 20–25 processes per 1 mm on the peripheral carina. Suture deep. Umbilicus is wide, approximately ½ of the shell diameter. Base broad. Aperture circular, channelled at the carinae. Peristome irregularly triangular, double; its basal margin is thickened. The operculum dark brown, derivative, double umbrella-like, concave on the outer surface and provided with a long narrow median tubular process which is hollow medially (Figs 7–9).

Variability: Shell height significantly variable. In Ambon specimens 2½ apical whorls are somewhat upraised and visible in apertural view (Fig. 2), while in Haruku specimen they are hardly visible in this view (Fig. 5). Adult Haruku paratype is 2.5 mm high compared to 2.5–2.9 mm in subadult specimens from Ambon.

Differential diagnosis: *D. ciliata* sp. nov. cannot be assigned to any of previously established phenotypic species-groups (see Greķe 2014 for definitions). It is most similar to *D. ingenua* (O. Boettger, 1891) from Lease Islands but differs in the absence of umbilical carinae, presence of brush-like processes on the carinae (these processes not known in *D. ingenua*), and different form of operculum (see plate 17 fig. 2 in Greķe 2014 for comparison).

Ecology: This species inhabits wet leaf litter of secondary (presumably also primary) lowland rainforests. It was found at altitudes 150–420 m a.s.l.

Distribution: Ambon & Haruku islands, Lease Islands group, Central Moluccas.

Derivatio nominis: Named from the Latin "ciliatus" [ciliate], because of ciliae-shaped periostracal processes of the shell.

Ditropopsis (s. str.) ***monticola* Greķe, 2014**

Material: INDONESIA E, W New Guinea, Doberai Peninsula, Ayamaru vill. 2,5–2,1 km NW, forest & Framu creek, 1°15'30S, 132°11'13"E, ~310–265 m, 02.IX.2015, primary semidry lowland rainforest on limestone, leg. D.Telnov [2 specimens in collection K. Greķe, Rīga].

Notes: This species was previously known from two specimens (one of them badly broken) sampled in the Tamarau Mountains of central Doberai Peninsula (Greķe 2014: 194–195). The present new locality situated in southern Doberai lowlands, about 67 km southwest of the locus typicus. The new locality is from semidry rainforest on karst formations while the previous one is from a very wet area without limestone. The palatal margin of the peristome is slightly excavated in Ayamaru specimens in top view (Fig. 13, arrow).

Ditropopsis (s. str.) ***wallacei* Greķe, 2014**

Material: Indonesia: West Papua, Waigeo, Lopintol, Gua Kalepale, Leg. T. Whitten, Jan 2013 [14 specimens in Lee Kong Chian Natural History Museum, Singapore, 3 specimens in collection K. Greķe, Rīga].

Notes: This species was previously known from one locality in River Werabiai valley, Majalibit Bay, E peninsula of Waigeo (Greķe 2014: 198–199). New locality situated on W peninsula across the Majalibit Bay, about 13 km west of the locus typicus. Co-ordinates of Kalepale cave are 00°17'18"S, 130°49'15"E, but no information is available where exactly these specimens were sampled. All specimens from near Gua [cave] Kalepale are generally smaller than the specimens of the type series.

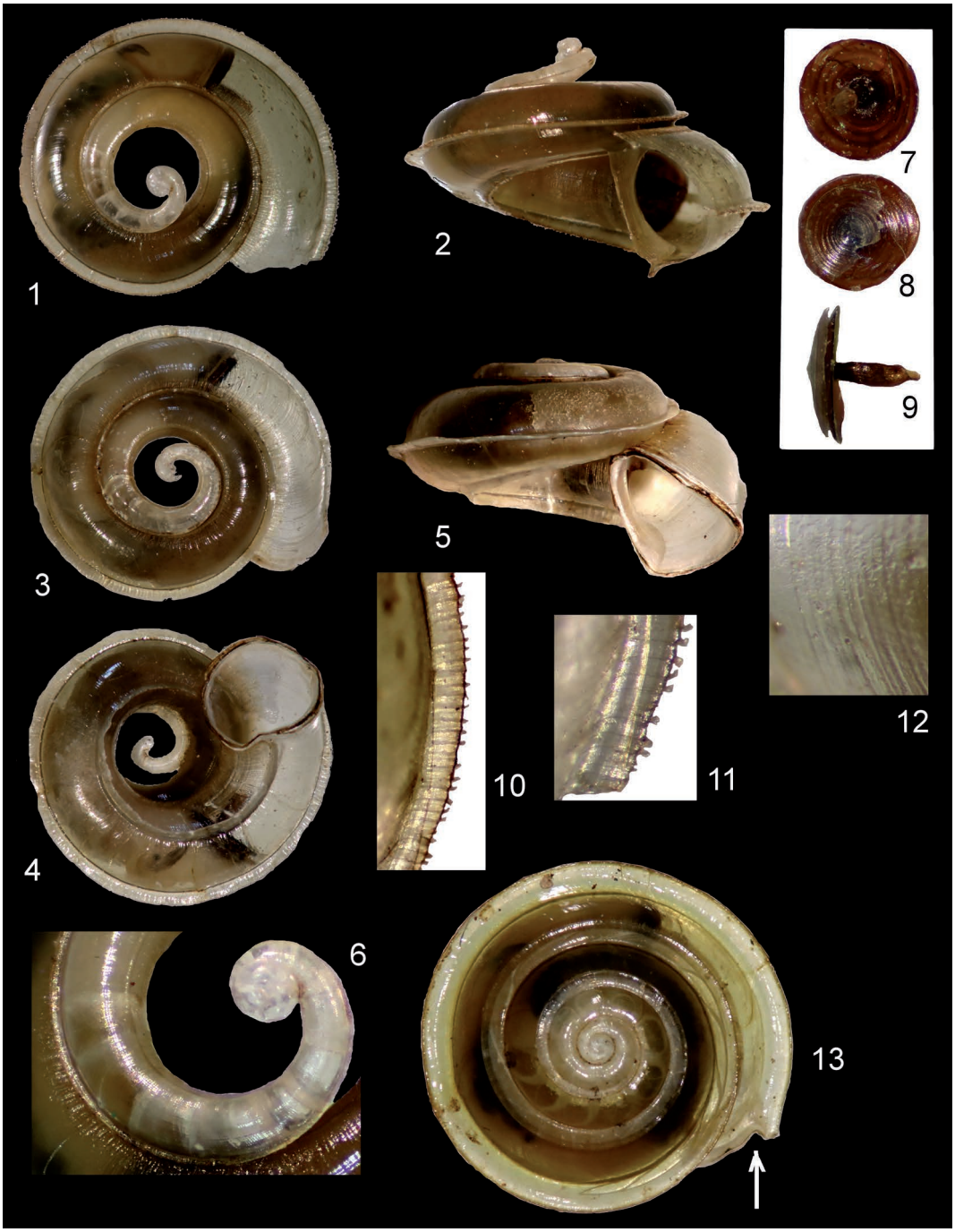
Updated key to *Ditropopsis* from the Papuan Region

This is a supplemented section of the key provided by Greķe (2014).

6 Umbilicus approximately ½ shell diameter; whorls 4; shell with 2 or 3 external and 4 umbilical carinae ..... ***D. ingenua***

6' Umbilicus approximately ½ shell diameter; whorls $4^1/_3$; shell has 2 external and no umbilical carinae; dense irregular brush shaped processes present on the carinae ..... ***D. ciliata* sp. nov.**

– Umbilicus narrower than ½ the shell diameter; shell with more than 4 whorls **7**



Figures 1–13. *Ditropopsis* species from Papuan biogeographical region. **1–12:** *D.* (s. str.) *ciliata* sp. nov. 1–2, 6, 10–12: holotype; 3-5: paratype from Haruku Island; 7–9: paratype from locus typicus, Ambon Island; **13:** *D.* (s. str.) *monticola* Greķe, 2014, specimen from Ayamaru vill. 2.5–2.1 km NW, Doberai Peninsula, New Guinea.

Acknowledgements

The author is grateful to Tan Siong Kiat (Lee Kong Chian Natural History Museum, Singapore), Dmitry Telnov (the Entomological Society of Latvia, Rīga) and Laszlo Wagner (Budapest, Hungary) for providing this interesting material. D. Telnov also thanked for preparing the photographs for this publication.

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