

Basteria

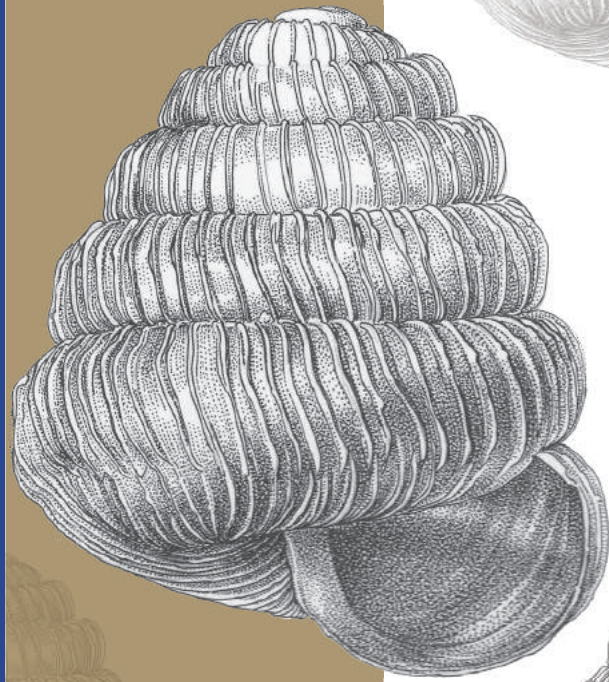
TIJDSCHRIFT VAN DE NEDERLANDSE MALACOLOGISCHE VERENIGING

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Holotype of *Rahula kleini*

Gittenberger, Leda & Sherub, 2017

(p.119)



INHOUDSOPGAVE

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Additional records of *Rahula* species (Pulmonata, Helicarionidae) in Bhutan

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Two new records of *Rahula* are presented, one of which, regarding *R. bascauda*, is new for *Bhutan*. A second specimen recalls *R. kleini*; its identity is considered doubtful.

Key words: Helicarionidae, *Rahula*, taxonomy, distribution, Bhutan.

INTRODUCTION

After a silence of about a century in the literature regarding the taxonomy and distribution of *Rahula* Godwin-Austen, 1907, species in the Himalaya, as summarized by Godwin-Austen (1918), Gittenberger et al. (2017) recently published two new records for this genus from the Himalaya in Bhutan. Surprisingly quickly after this publication we can present two more records of *Rahula* for Bhutan, viz. two shells of the generic prime species *R. bascauda* (Benson, 1859) and a single shell that cannot be identified with certainty. At least three *Rahula* species are known now from a total of four localities (Fig. 1). For a more detailed account regarding this genus, with a checklist of all known species and distributional data, we refer to Gittenberger et al. (2017).

IDENTIFICATION KEY FOR THE SPECIES IN BHUTAN

- 1a. Shell with a prominent peripheral keel:.....2
- 1b. Shell with a rounded periphery:.....3
- 2a. Radial ribs only above the keel;
umbilicus very narrow:*R. trongsaensis*
- 2b. Radial ribs also on below the keel;
umbilicus very wide:*R. bascauda*
- 3a. Shell globular conical, whorls regularly
increasing in width:*R. kleini*
- 3b. Shell high conical with a domed apical part,
initial whorls increasing more quickly in width
than the following ones:*R. aff. kleini*

SYSTEMATIC PART

Without anatomical or molecular data this genus cannot be classified into a family with certainty.

Superfamily Helicarionoidea Bourguignat, 1877; family Helicarionidae Bourguignat, 1877 [after Zilch, 1959: 306]

Family Ariophantidae Godwin-Austen, 1888 [after Schileyko, 2003: 1328]

Superfamilia Gastrodontoidea Tryon, 1866; family Euconulidae H.B. Baker, 1928 [after Vermeulen et al., 2015: 106]

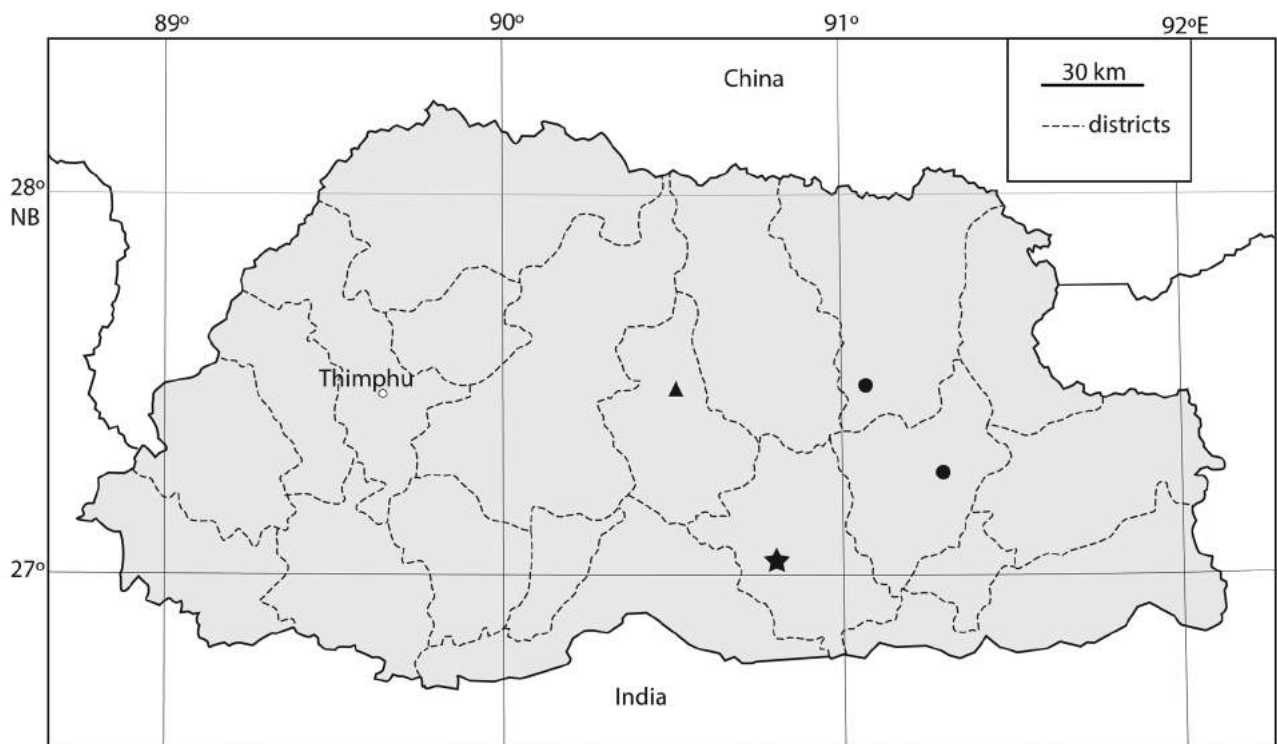


Fig. 1. Records of *Rahula* species in Bhutan: *R. bascauda*, star; *R. kleini* and *R. aff. kleini*, dots; *R. trongsensis*, square.

Rahula Godwin-Austen, 1907: 216.

Type species (by original designation): *Helix macrolepauris*
Benson, 1859

Rahula bascauda (Benson, 1859) (Fig. 2)

Helix bascauda Benson, 1859: 186. Type locality: "Teria Ghát, montium Khasiae" [= Khasi Hills]).

Rahula bascauda; Godwin-Austen, 1907: 218, pl. 117 figs 1 ("Teria Ghát"), 1a, 3 ("Jaintia"), 3a., 219 ("Darjiling, Jaintia [25°30'N 92°0'E] and Naga Hills, Dafla Hills, Arakan and Pegu [= Bago, 19°N 96°E]").

Material. – Bhutan, district Zhemgang, between Dungmang Tsachu and Gomphu Zero Point, 24 km SE of Zhemgang, 335 m a.s.l., 27°02'N 90°48'E; scree in warm broadleaf forest; Sherub Sherub & Ugyen Tenzin leg. 08.i.2017.

Description of the two shells from Bhutan. – Shell conical, broader than high, with a sharp ridge along the periphery and a wide, funnel-shaped umbilicus, which measures $\frac{1}{4}$ or more of the total shell width. The largest shell, measuring 4.55×3.85 mm, has $1\frac{1}{4}$ smooth protoconch and $4\frac{1}{4}$ very oblique, radially ribbed teleoconch whorls; the umbilicus takes nearly $\frac{1}{3}$ of the total width. The radial ribs (6/mm) run towards the peripheral keel and start again on the shell base shortly below the keel. The smallest shell, meas-

uring 4.00×2.95 mm, has 5 ribbed (7/mm) whorls in total; the umbilicus takes $\frac{1}{4}$ of the total width.

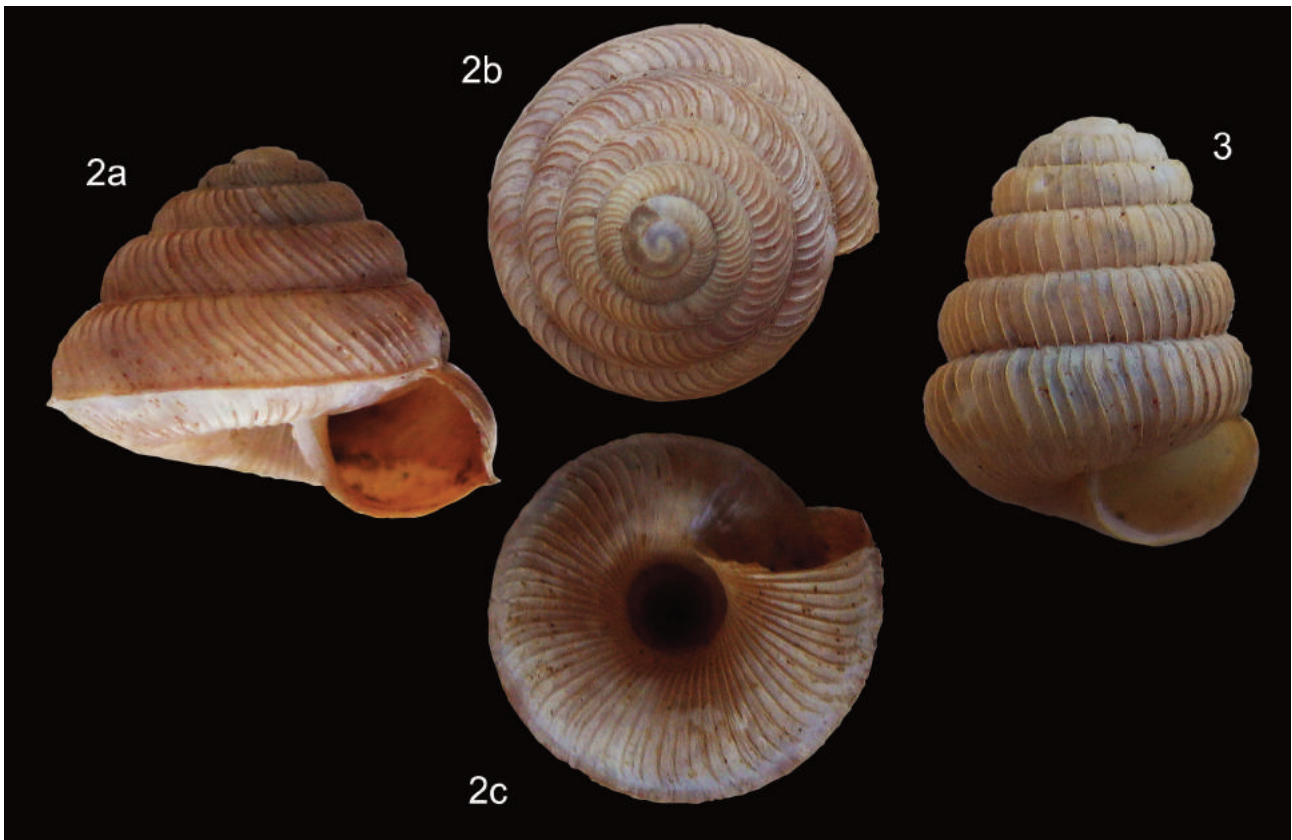
Remarks. – This is the only *Rahula* species that is reported from a large range, reaching from NE India to Myanmar (Godwin-Austen, 1907; Gittenberger et al., 2017: 415). It is in *Rahula* the 'prime species' as defined by Gittenberger & Kokshoorn (2008a, b). The new record in Bhutan fills a distributional gap.

Rahula aff. kleini Gittenberger, Leda & Sherub, 2017
(Fig. 3)

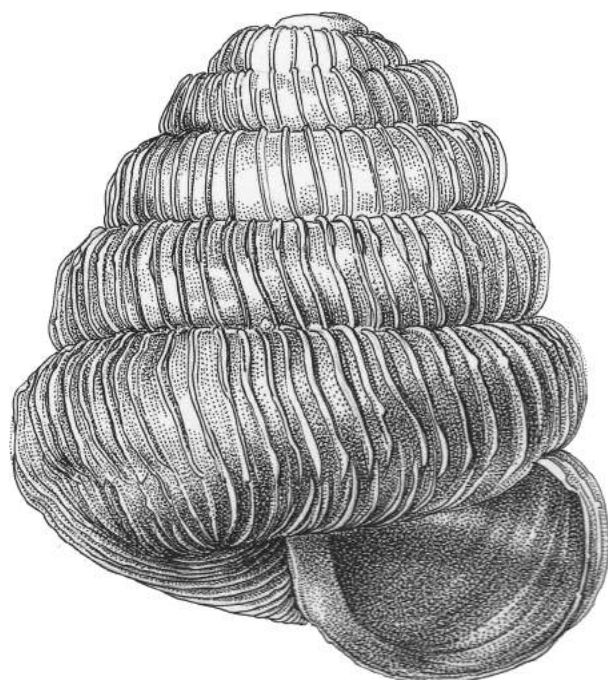
Rahula kleini Gittenberger, Leda & Sherub, 2017: 413. Type locality: Bhutan, district Monggar, 8 km ESE of Monggar; 2300 m a.s.l.; 27°16'N 91°18'E.

Material. – Bhutan, district Lhuntse, Garbrag (Phag Sang), 11 km W of Gorgan; 1800 m a.s.l.; 27°30'E 91°04'; Ugyen Tenzin, Dawa Yoezer & Sherub Sherub leg. 22.ii.2017 (NBCB/one shell).

Description of the newly collected specimen. – Shell conical with a tapering apical part, clearly higher than broad; with $1\frac{1}{4}$ protoconch and $5\frac{3}{4}$ convex teleoconch whorls, separated by a deeply incised suture. Protoconch weathered; teleoconch covered with prominent, sharp, erect, radial riblets, 8/mm on the body whorl. The riblets run abapically from the suture to shortly below the periphery, to the level where the palatal edge of the aperture touches the parietal wall; after an



Figs 2-3. *Rahula* spp. **2a-c**, *Rahula bascauda* (Benson, 1859). Bhutan, district Zhemgang, 24 km SE of Zhemgang, 335 m a.s.l.; scree in warm broadleaf forest; Sherub Sherub & Ugyen Tenzin leg. 08.i.2017. Width 4.55 mm. **3**, *Rahula* aff. *kleini* Gittenberger, Leda & Sherub, 2017. Bhutan, district Lhuntse, Garbrag (Phag Sang), 11 km West of Gorgan; 1800 m a.s.l.; 27°30'E 91°04'; Ugyen Tenzin, Dawa Yoezer & Sherub Sherub leg. 22.ii.2017 (NBCB/one shell).



interruption, slightly less prominent riblets continue towards the umbilicus or start independently. Columellar edge of the aperture reflected, i.e. curved into the very narrow umbilicus, which measures c. 1/25 of the total shell width. Height 3.15 mm, width 2.50 mm; height/width 1.26.

Remarks.— This shell is most similar to the holotype of *R. kleini* (Fig. 4), which used to be the only specimen known of that species. The holotype, measuring 3.08 × 2.76 mm (height/width 1.12), differs mainly in general shape, with whorls that increase more gradually in width, instead of initially more quickly than afterwards.

The type locality of *R. kleini* is situated about 35 km northwest as the crow flies from the locality where the present specimen was found.

Fig. 4. *Rahula kleini* Gittenberger, Leda & Sherub, 2017, holotype. Bhutan, district Monggar, 8 km ESE of Monggar; 2300 m a.s.l.; 27°16'N 91°18'E. Width 2.76 mm. After Gittenberger et al., 2017, fig. 1. Drawing by I. van Noortwijk.

CORRECTION TO GITTENBERGER ET AL. (2017: 416) regarding *Rahula manipurensis* Godwin-Austen, 1907

Gittenberger et al. (2017: 416) referred to *Rahula manipurensis* as a misspelling of *Rahula manipurensis*. The latter is the original spelling that should be used, despite the fact that the species in question occurs in the region that is called Manipur at present (e.g. Páll-Gergely et al., 2015: 6).

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