

Notes on cancellariid nomenclature

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Abstract: Two recently published species names appear to be junior subjective synonyms of valid names within the family **Cancellariidae**. *Colubraria tchangsii* Ma & Zhang, 2000, was misplaced as to the family, and is a synonym of *Tritonoharpa beui* Verhecken, 1997; and *Trigonostoma damasoi* Cossignani, 2015, is a synonym of *Trigonostoma gofasi* Verhecken, 2007.

Introduction: In the past two decades, two specific names were proposed that needed further study, viz. *Colubraria tchangsii* Ma & Zhang, 2000, from the South China Sea, and *Trigonostoma damasoi* Cossignani, 2015, from Angola, West Africa. Yet, a detailed study of the original publications shows that both taxa had already been described earlier under different names in the family **Cancellariidae**. Consequently, they are junior subjective synonyms.

Study of these cases

Colubraria tchangsii Ma & Zhang, 2000

Tritonoharpa n. sp.? C, aff. *T. angasi* (Brazier) - Beu & Maxwell, 1987: 35, pl. 12 i-j, l-p.

Tritonoharpa beui Verhecken, 1997: 319, fig. 54.

Colubraria tchangsii Ma & Zhang, 2000: 149 (Chinese), 152 (English), fig. 6.

Tritonoharpa beui - Verhecken, 2011: 47, pl. 10 fig. 17. Hemmen, 2007: 57-58, figd.

Colubraria tchangsii - Zhang & Zhang, 2015: 15, fig. 48.

Colubraria tchangsii was apparently described based on one shell (but this is not explicitly stated in the English text) taken in the South China Sea, east of Hainan, 19°15'N, 111°00'E, at 78 m on a sand and muddy bottom. The holotype (M38373), measuring 26.5 x 9.0 mm, is in the Institute of Oceanology, Chinese Academy of Sciences, Qingdao, and was figured as a drawing in the original publication (fig. 6; here Fig. 1), and more

recently as photographs (Zhang & Zhang, 2015: 15 fig. 48; here Fig. 2). The statement in the original description that “the new species is similar in shape to *Colubraria antiquata* (Hinds, 1844)” has limited meaning, since *Triton antiquatus* Hinds in Reeve, 1844 has been shown (Beu & Maxwell, 1987: 44) to contain both *Tritonoharpa antiquata* (Hinds in Reeve, 1844) and *Tritonoharpa pseudangasi* Beu & Maxwell, 1987.

The original description of *C. tchangsii* mentions that the inner lip is “plicate in the centre of the columella”: this indicates that the species is a cancellariid rather than a colubrariid; but the number and strength of the folds is not specified. The photo (Zhang & Zhang, 2015: 15 fig. 48) only shows a single broad and very weak fold; this agrees with the genus *Tritonoharpa* that has no or only a single, very weak columellar fold; whereas *Africotriton* has one or two weak columellar folds (Beu & Maxwell, 1987: 29, 33). Confusion between colubrariid and cancellariid species is not exceptional. In the period 1932-1987, at least 14 species that are now classified in the subfamily Plesiotritoninae (**Cancellariidae**) were proposed as colubrariids by nine authors (Pilsbry, 1932; Tucker & Wilson, 1933; Mansfield, 1936; Smith, 1947; Campbell, 1961; Barnard, 1963; Glibert, 1963; Palmer & Brann, 1966; Sarasua, 1975. References can be consulted in Petit & Harasewych, 2005).

Thus, *Colubraria tchangsii* Ma & Zhang must be transferred to the family **Cancellariidae**, subfamily Plesiotritoninae, genus *Tritonoharpa*. Currently, 23 species of this genus are known to live in the Indo-Pacific. Their identification at species level is often not easy. One important characteristic is whether or not the shell is decollate, since in some species this is the general rule, while others retain the protoconch even at a larger size, as is the case in the present species (see Figs 1-2).

Tritonoharpa tchangsii (Ma & Zhang, 2000) is very similar to *Tritonoharpa beui* Verhecken, 1997, already published as “*Tritonoharpa* n.sp.? C, aff. *T. angasi*

(Brazier)" by Beu & Maxwell (1987: 35). The type material of *T. beui* is from the Arafura Sea: holotype (MNHN-IM-2000-2119, here Fig. 3) from KARUBAR Stn. 30, 111-118 m, Kai Islands; paratype (WAM3043.83) from the Mariel King Memorial Expedition, Stn TSIII/ 1-7, 46-64 m, Tanimbar Islands (figd. Beu & Maxwell, 1987: pl. 12 i-j, l-p). Another shell, height 29.3 mm, was collected at PANGLAO 2004 station T11, Bohol, Philippines (Verhecken, 2011: 47, pl. 10 fig. 17; here Fig. 4). The four cited shells agree quite well in their general shape, protoconch, shape of the whorls, number of axial ribs, small nodules formed at crossings of axial and spiral sculpture, placement of the varices, and form and relative height of the aperture.

There is an ambiguity in the English terminology used by Ma & Zhang (2000: 152) when mentioning "numerous longitudinal and transverse, fine ribs", and further "spiral [sic] ribs 11 on the penultimate, 42 transverse ribs on the body whorl". Definitions given in literature for the term "transverse" vary: "any element crossing a whorl in a direction which would intersect both sutures (Cox in Moore, 1960: I20), so this definition refers to an axial element. In contrast, the definition "running across the shell at right angles to the axis" (Arnold, 1965: 46) refers to a spiral element. Therefore, the meaning of "42 transverse ribs on body whorl" is not clear. Counting the axials shown on the ventral and dorsal views of a photograph of a shell can give an approximation of the number of axial ribs on the last whorl. Applied to the two views of Ma & Zhang's fig. 5 this renders about 25 axials; so the "42 transverse ribs" mentioned must point to the fine spiral lines on the last whorl. The holotype of *T. tchangsii* has "about 9 moderately convex whorls", and the number of protoconch whorls is not mentioned: most probably it is about 1.5. This renders, at about 7.5 teleoconch whorls, a number of 42 spiral lines on the last whorl. The holotype of *T. beui*, with 5.5 teleoconch whorls, has 34 spiral lines on the last whorl, the relative height of which (0.46) is smaller than in *T. tchangsii*. The *T. beui* shell from Bohol has 30 axial ribs and 38 spiral lines on the last whorl; and the shell from Tanimbar island has 25 axials and 32 spirals on the last of about 7 teleoconch whorls. Therefore the number of spiral lines on the last whorl, 42 (*T. tchangsii*), 34 (*T. beui* holotype), 38 (*T. beui* from Bohol) and 38 (*T. beui* from Tanimbar) is due to intraspecific variability. Moreover, the relative strength of the axial and spiral sculpture can vary slightly between the specimens (see Figs. 1-4).

Figures 1-4 are proportional to their respective shell size, and show that the holotype of *T. beui* is a shell that is not fully grown. The relative height of the last whorl is 0.46 for the *T. beui* holotype (Fig. 3), but 0.52 for the Bohol shell (Fig. 4); the latter value agrees with that of the *T. tchangsii* holotype (Fig. 1) drawing (0.51), but its photo yields a value of 0.44 (Fig. 2).

Conclusion: *Colubraria tchangsii* Ma & Zhang, 2000 must be transferred to the family **Cancellariidae**, subfamily Plesiotritoniinae, genus *Tritonoharpa*, and must be considered a junior subjective synonym of *Tritonoharpa beui* Verhecken, 1997.

Trigonostoma damasoi T. Cossignani, 2015

Trigonostoma gofasi Verhecken, 2007: 336, figs. 50A-B, 62

Trigonostoma damasoi T. Cossignani, 2015: 15

Trigonostoma damasoi T. Cossignani, 2015, was described as a new cancellariid species from Angola. The type material is from the collection of Damaso Monteiro; the type locality is "Farol das Lagosta", Luanda, 25-30 m. The unnumbered holotype, height 16.08 mm, is kept in Mostra Mondiale Malacologia, Cupra Marittima, Italy; there are two paratypes, with heights given as 15.36 and 14.95 mm. The type material is here figured in Figs 5-7. However, there is also *Trigonostoma gofasi* Verhecken, 2007. The holotype (MNHN Moll. 9497, 16.4 x 14.3 mm) of that species is from Angola, Ilha de Luanda, dredged by Serge Gofas at 40-60 m in 1981-1982; it is here figured in Fig. 8. The description of this species was based on the type material (holotype and 11 paratypes) plus 16 more shells.

Contacts between the present author and Tiziano Cossignani resulted in the following: Cossignani had been unaware of the existence of the name *T. gofasi*; and when offered the authorship of a publication to correct the present situation of synonymy, he declined; thus leaving this to the present author.

Trigonostoma gofasi: Verhecken (2007: 338) distinguished three isolated distributional areas for this species: Senegal and Mauritania; Liberia to Ghana; and Angola. There are minor differences in shell shape: the more northern specimens are somewhat more rounded, but this might be the result of slightly more eroded shells. *Trigonostoma damasoi*: the shell form is like the Angolan shell form of *T. gofasi*, and both taxa are from about the same locality, as shown here: The type locality of *T. damasoi* is cited as "Farol das Lagostas" (Cossignani, 2015: 15). This must refer to the locality "Farol das Lagostas" given on the Google Earth map (8°45'26.6"S, 13°18'23.3"E), but that is a coastal land area at about 70 m above sea level. Since the holotype is said to be trawled at 25-30 m, this must mean "off Farol das Lagostas". According to data obtained from Google Earth map and the ViaMichelin map of Luanda, the depth of 25 m is reached some 2.5 km offshore from Farol das Lagostas. The holotype of *T. gofasi* is from off Ilha de Luanda, 40-60 m. This refers to the long peninsula to the west of the town of Luanda, separating Luanda Bay from the open ocean. Based on the maps cited above, the distance

between the northeastern end of the peninsula and an offshore depth of 40 m is 2.1 km. The distance between that 40 m depth and the 25 m depth off Farol das Lagostas is 4.6 km. From these data it must be concluded that the distance between the areas designated by the two type locality statements is less than 5 km. This distance is negligible on the scale of Africa's west coast; and the map does not indicate important differences between the involved areas off Ilha de Luanda and off Farol das Lagostas. This means that both type localities can be considered to belong to the same biotope.

On top of this, the possibility that *T. damasoï* is the valid name for one of the geographical forms of *T. gofasi* mentioned by Verhecken (2007: 338) can be excluded, since both nominal species are from the same Angolan locality.

The shell sizes are about the same for both nominal species: *T. damasoï*: height 16.08, 15.35 and 14.95 mm; *T. gofasi*: holotype 16.4 x 14.3 mm; largest shell (from Mauritania): 23.7 x 18.5 mm.

The protoconch of both nominal species is multispiral, as shown for *T. gofasi* (Verhecken 2007: 237, figs. 62, SEM photos), and for *T. damasoï* (Cossignani 2015: 16, optical photos), where it is described as "cupoliforme" (dome-form).

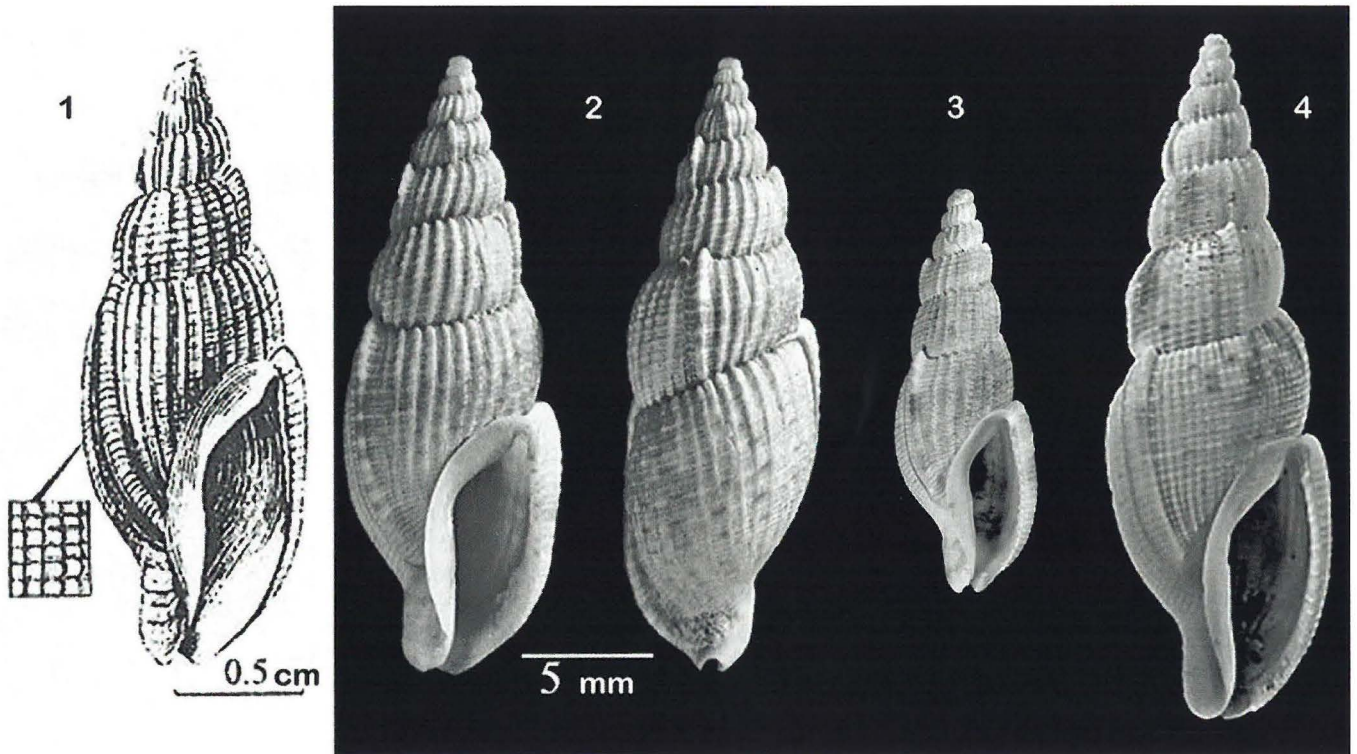
In both cited publications the resemblance of their shells to shells of *Trigonostoma scala* (Gmelin, 1791) is mentioned. The main difference consists in its paucispiral protoconch, versus the multispiral one in *T. gofasi* and *T. damasoï*.

Conclusion: From the data given above: shell shape, size of type material, type localities almost the same, same type of multispiral protoconch, it must be concluded that *Trigonostoma damasoï* Cossignani, 2015, is a junior subjective synonym of *T. gofasi* Verhecken, 2007.

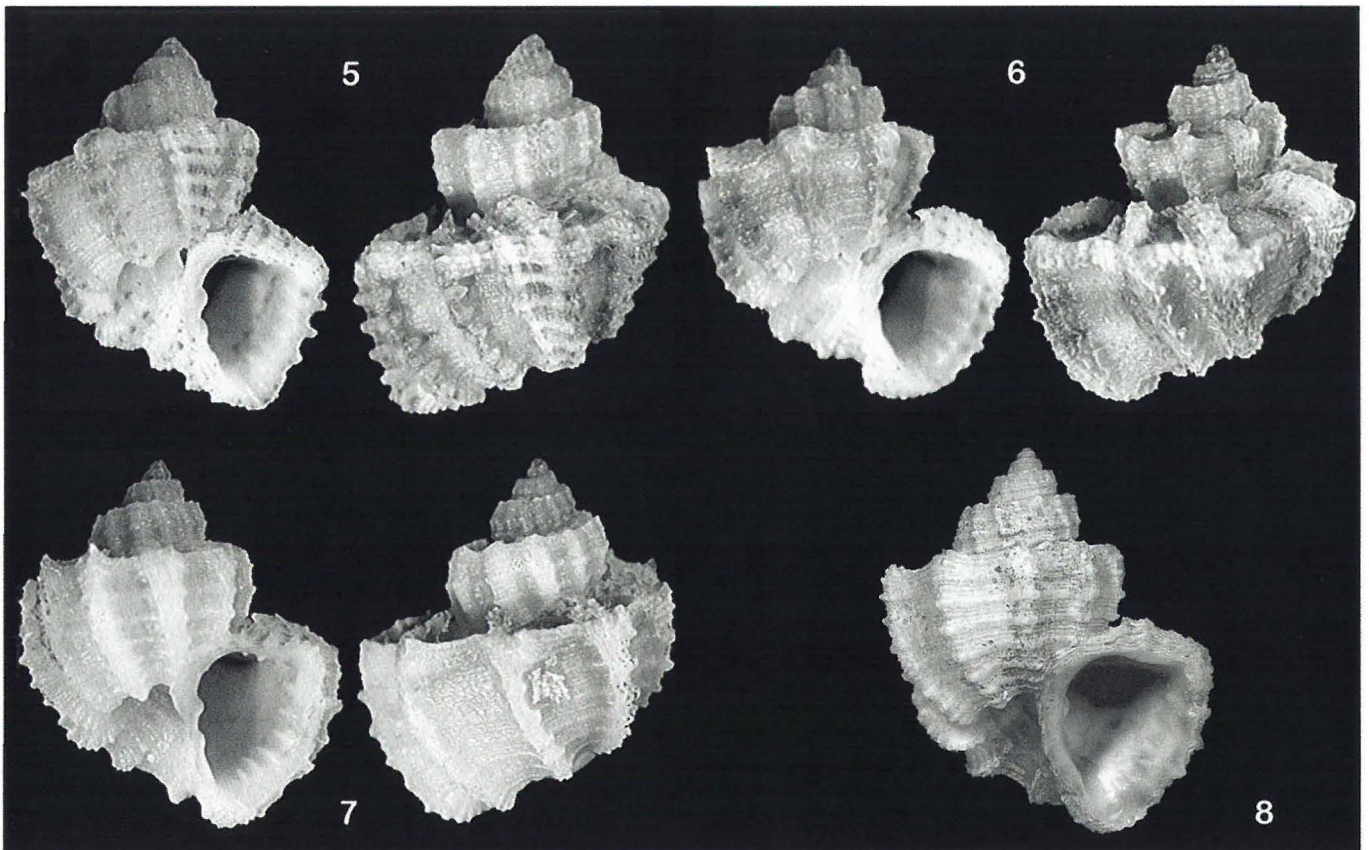
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Figs. 1-2: *Colubraria tchangsii*, holotype M38373, shell height 26.5 mm. 1, Ma & Zhang, 2000: fig. 6, here adapted. 2, Zhang & Zhang, 2015: fig. 48, here adapted.
Figs. 3-4: *Tritonoharpa beui*. 3, holotype MNHN-IM-2000-2119, height 16.5 mm. 4. Shell from Bohol, Philippines, height 29.3 mm.



Figs. 5-7: *Cancellaria damasoi*, type material, copy of unnumbered photos given by Cossignani (2015: 16). 5, holotype, shell height 16.08 mm. 6-7, paratypes, heights 15.36 and 14.95 mm resp.
Fig. 8: *Trigonostoma gofasi*, holotype MNHN Moll. 9497, shell height 16.5 mm.