

Bittium scabrum from Funtana, Croatia

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Abstract: *Bittium scabrum* (Olivi, 1792) was recorded from Funtana Bay, Istria, Croatia. As *B. scabrum* was formerly regarded as synonym of *B. reticulatum* (da Costa, 1778), it was originally erroneously assigned to the latter. The history of the taxonomic status of *B. scabrum* is briefly summarized. Distinctive criteria between *B. scabrum* and *B. reticulatum* are discussed.

Keywords: Gastropoda, *Bittium scabrum*, Istria, Adriatic Sea

Zusammenfassung: *Bittium scabrum* (Olivi, 1792) wurde in der Bucht von Funtana, Istrien, Kroatien, gefunden. Da *B. scabrum* zuvor als Synonym von *B. reticulatum* (da Costa, 1778) galt, wurden diese zunächst irrtümlich als *B. reticulatum* bestimmt. Die Geschichte des taxonomischen Status von *B. scabrum* wird kurz zusammengefasst. Die Unterscheidungskriterien zwischen *B. scabrum* und *B. reticulatum* werden erörtert.

Schlüsselwörter: Gastropoda, *Bittium scabrum*, Istrien, Adria

Introduction

In my report of the malacofauna from ground samples from Istria/Croatia (Kapeller 2024), I had mentioned, that *Bittium reticulatum* was found in two very distinct forms. The specimens from the muddy, brackish zone inside Funtana Bay (see Fig. 1) were much bigger, had a more acicular sculpture and the 4th spiral cord was weaker developed, if at all. They were suspected to be *Bittium reticulatum* var. *paludosa* Bucquoy, Dautzenberg & Dollfus, 1884, which was said to be unaccepted, referring to MolluscaBase (2023).

Bittium scabrum was originally described as *Murex scaber* Olivi, 1792 from the lagoon of Venezia. Later it was regarded as var. of *B. reticulatum* (e.g., Nordsieck 1968), then as synonym of *B. reticulatum* (MolluscaBase 2023). Buquoy, Dautzenberg & Dollfuss described the same species from a brackish lagoon in S France as *B. reticulatum* var. *paludosa* BDD (1882–1886).

It was overlooked (as it was in MolluscaBase 2023), that already Verduin (1982) had reestablished *Bittium scabrum* as a valid species. He referred to the detailed description of *B. scabrum* by BDD (1882–1886) [not mentioning that it was described as *B. reticulatum* var. *paludosa* there] and compared it with the description of *B. reticulatum*. Furthermore, Mulder & Voskuil (1996) confirmed this view and mentioned *B. reticulatum* var. *paludosa* explicitly as a synonym of *B. scabrum*. This status is meanwhile also shared in MolluscaBase (2025).

Results and Discussion

It is hereby corrected, that the specimens from the brackish, muddy zone at the shore of Funtana Bay (sample 10, Fig. 1), reported as *Bittium reticulatum* (da Costa, 1778) in Kapeller (2024), are assigned to *Bittium scabrum* (Olivi, 1792). The same applies to most of the specimens from Funtana Bay at a depth of 3–4 m (sample 1, Fig. 1), where the conditions were no more brackish but still muddy (see Table 1 for details).

The specimens of *B. scabrum* were much bigger than those of *B. reticulatum* found in this area outside the muddy zone. While most of the specimens of *B. scabrum* in sample 10 were >8 mm, the biggest specimens of *B.*

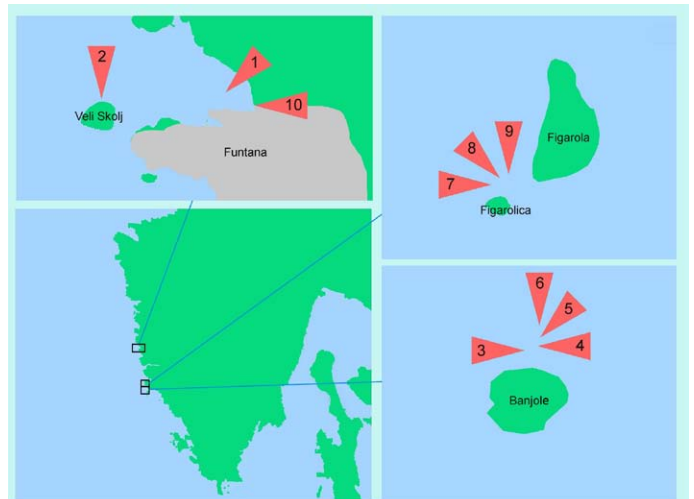


Fig. 1: Sampling sites (from Kapeller 2024)

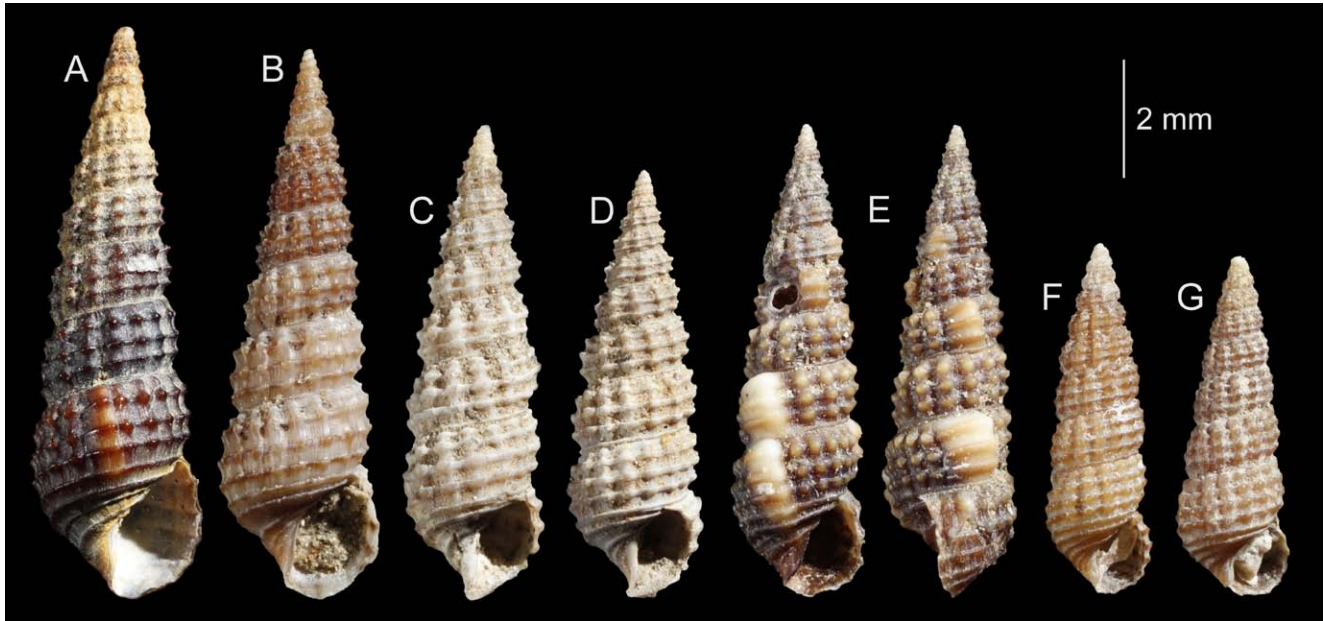


Fig. 2: **A, B:** *Bittium scabrum* from the brackish shore of Funtana Bay (sample 10 in Kapeller 2024), fully grown specimens; **C, D:** *B. scabrum* from the muddy zone at 3–4 m depth in Funtana Bay (sample 1 in Kapeller 2024); **E:** *B. reticulatum* from the same location; **F, G:** *B. reticulatum* from off Rovinj (sample 4 and 7 in Kapeller 2024, respectively), biggest specimen from either sample. Photos: R. Kapeller

reticulatum from sample 4 and 7 were only 5 mm (Fig. 2). This suggests a difference in median size, but, however, the species of this genus seem to be very variable in size and referring to literature there seem to be a huge overlap. Nordsieck (1968) mentions *B. reticulatum* to be up to 15 mm and Verduin (1982) compares the sizes of *B. scabrum* with 6–13 mm (locally up to 17 mm) and *B. reticulatum* with 5–12 mm (locally up to 17 mm), which does not sound like a significant difference. However, it may be questioned, whether the original sources of the reported maximum sizes of *B. reticulatum* could have included *B. scabrum*, which was regarded as synonymous at that time.

In the muddy zone of Funtana Bay at 3–4 m depth (sample 1), both species were found with an about equal size (Fig. 2). It seems that in *Bittium* species the size depends on the depth (decreasing size at increasing depth, Table 1), rather than being a distinguishing criterion. Verduin (1982) lists a number of further criteria, not allowing an unambiguous distinction due to overlapping values. For example, the number of varices is mentioned to be 3–18 in *B. reticulatum*, while it is up to 6 in *B. scabrum*, but mostly there are only a few. A difference in the mean

number of varices could also be observed in the specimens from Istria, but a lot of specimens of *B. reticulatum* did not have any varix.

A rather reliable feature for the distinction of these species seems to be the development of the 4th spiral cord. While the somewhat less slender *Bittium latreillii* (Payraud, 1826) can be clearly distinguished by the 4th spiral cord being inserted between the first and second cord, *B. scabrum* and *B. reticulatum* share the fact that the 4th cord is inserted on top. But while the 4th cord is normally well developed in the later whorls of *B. reticulatum*, it is poorly developed in *B. scabrum*, if at all. Even in the end whorl of fully grown *B. scabrum* it is not fully developed (Fig. 2). This difference is mentioned by Verduin (1982) as “subsutural spiral ridge”, which is said to be “usually not well developed. In Mediterranean samples usually weak or absent” in *B. scabrum*. This statement suggests that this criterion could be less reliable for Atlantic species. It probably takes into account the specimen shown in Fig. 24C in this article, showing an Atlantic specimen with fully developed 4th cord, assigned to *B. scabrum*, probably because of the poorly developed varices. But as I have seen a lot of specimens of *B. reticulatum* with poorly developed varices, and because of the less acicular nodes, I think this specimen is a misidentified *B. reticulatum*.

Table 1: Total number of *Bittium* species in the samples and median size of the fully grown specimens.

	Brackish, muddy zone of Funtana Bay (0 m)	Muddy zone of Funtana Bay (3–4 m)	Figarola off Rovinj (8 m)	Banjole off Rovinj (18 m)
<i>B. latreillii</i>	9.5 mm (n=3)	5 mm (n=9)	8 mm (n=406)	5.5 mm (n=622)
<i>B. reticulatum</i>		6.5 mm (n=6)	4 mm (n=335)	3 mm (n=467)
<i>B. scabrum</i>	9 mm (n=659)	5.5 mm (n=82)		

Although *B. scabrum* typically inhabits brackish lagoons, a habitat which is not preferred by *B. reticulatum*, they were found together in the muddy zone of Funtana Bay at 3–4 m depth (sample 1). The most surprising observation was that all 6 specimens of *B. reticulatum* in this sample did not develop the 4th spiral cord (Fig. 2). Nevertheless, they could be clearly assigned due to the heavily developed varices and the beaded sculpture, no intermediates were observed. This fact let the development of the 4th spiral cord appear to be a less reliable criterion.

Furthermore, there was a quite clear difference in the sculpture observable in the specimens from Istria: the nodes are more acicular in *B. scabrum* and more beaded in *B. reticulatum* (Fig. 2). This difference is also quite evident from the specimens figured by Verduin (1982). Thus, it is a bit astonishing that it is not mentioned there. It is also quite clearly visible in available images in other literature (e.g., Cuneo 1999; Caro 2025, whereby the second figure of *B. reticulatum* in the former appears to be a misidentified *B. scabrum*), where this difference is not mentioned either. The more acicular sculpture is also not stated in the poor original description, just reading “*Turbo integer acuminatus, striis cancellatis, & granulatis distinctus, fuscus*”, but the name “*scaber*” could be interpreted in this sense.

Conclusions

Although *Bittium scabrum* and *Bittium reticulatum* prefer different habitats, they may be found together. Their distinction may be difficult in this case. The context of more distinguishing criteria should be taken into account, whereby the different sculpture, being more acicular in *B. scabrum* and more beaded in *B. reticulatum*, seems to me the most reliable one.

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