A new species of *Gibberula* Swainson, 1840 (Cystiscidae) from Cape Verde Islands (Mollusca: Gastropoda)

Lars Kellner, Munich

Keywords:
Gastropoda, Cystiscidae, Marginellidae, *Gibberula*, West Africa, Cape Verde, Taxonomy.

Abstract:
A new species of *Gibberula* is described from Cape Verde Archipelago, West Africa. *Gibberula rachmaninovi* n. sp., is diagnostic mainly due to its absence of labial denticles and its waisted labial outline. A brief review of the relevant congeners from Cape Verde Archipelago and the eastern Atlantic is given. Conchological comparison shows significant differences, which justify the status of a new species.

Introduction:
The Cape Verde Archipelago, especially Sal Island with its expanded sandy coasts displays a suitable habitat for a marginellid fauna. Most species live in tropical West Africa (Gofas, 1989) and do not exceed 15 mm in length.
Two species belonging to the genus *Gibberula* have been described from Cape Verde Islands: *Gibberula lucia* Jousseaume, 1877, which has been recorded off Santa Luzia Island (Pin et Boyer, 1995), and *Gibberula rauli* Fernandes, 1987, which is occurs throughout the whole Archipelago (Fernandes, 1987).
A new species of the genus *Gibberula* has recently been collected on Sal Island next to the small town Santa Maria by the author during sand sieving.

Abbreviations: SL: Shell length, SW: Shell width, ZSM: Zoological State collection Munich, Germany

Systematics: I follow the classification of Coovert et Coovert (1995).

Family: CYSTISCIDAE Stimpson, 1865
Subfamily: PERSICULINAE Coovert et Coovert, 1995
Genus: *Gibberula* Swainson, 1840

Type species: *Gibberula zonata* Swainson, 1840 (= *Volvaria oryza* Lamarck, 1822), designation by monotypy.

***Gibberula rachmaninovi* n. sp.**

Material: 1 adult specimen, collected dead. Holotype: ZSM, No. 20030020.

Type locality: Cape Verde Archipelago; Sal Isl., Santa Maria (16.60°N, 22.92°W), at – 0.5 m on sandy bottom.

Description: Shell oval, inflated posteriorly and tapering anteriorly, 7.3 mm in lenght, 4.7 mm in width and 4.0 mm in height. SL / SW ratio: 1.55. Surface completely smooth, glossy. Spire depressed. The contour of the first whorls slightly concave. Protoconch approximately 550 µm in diameter, presenting about ¾ whorl, the teleconch 3 ¼ whorls. Especially the suture of early whorls slightly raised in a low spiral ridge. No apical callus deposits. Labrum callously thickened, its profile forming a slight concavity, giving the shell a waisted appearance. No labial denticles. Columella multiplicate: 4 visible columellar teeth, equally well developed, reaching deep into the shell and not extending onto the base. Lower pleats more oblique than upper ones. No lirations on the parietal wall. No ventral callus. Aperture moderately narrow, significantly widening anteriorly. Ground colouration of the holotype bright beige, with 2 distinct, narrow and uninterrupted brown bands on the body whorl, one in the upper third and one in the lower third, colour especially pronounced on the outer labrum.
The soft parts and the radula of the animal are unknown.

Habitat and distribution: The herein described specimen was found on Sal Isl., Santa Maria (Cape Verde Archipelago), on sandy bottom at – 0.5 m depth during sand sieving, seemingly fresh dead. So the shallow water might be the habitat of this species.

As being known from the holotype only, the actual distribution throughout the Cape Verde Archipelago has still to be researched.

Etymology: The new species is named after the great Russian composer and pianist Sergei Rachmaninov.

Discussion:
Despite being known from only a single specimen, *Gibberula rachmaninovi* n. sp. represents a well distinguishable member of the genus *Gibberula* in Cape Verde Islands.
In Comparison to *Gibberula lucia* Jousseaume, 1877, the new species differs significantly in its concave profile of the outer lip and its much weaker colouration. *G. rachmaninovi* n. sp. lacks the rich brown zic-zac ornaments, shows only simple banding and grows significantly bigger. Whereas *G. lucia* usually measures approximately 3 mm in length, the holotype of *G. rachmaninovi* n. sp. is 7.3 mm, and thus the latter is twice as long as *G. lucia*. Recorded from dredgings in deeper water off Santa Luzia Isl., the actual occurrence of *G. lucia* in Cape Verde Island, Senegal and the Canaries has yet to be concretised (Pin et Boyer, 1995).
Gibberula rauli Fernandes, 1987 from Cape Verde Archipelago differs from the new species by its relatively high spire, the convex labial outline and in the number and characteristics of its columellar pleats. Whereas *G. rauli* displays 5 to 6 plicae, strongly extending onto the base, *G. rachmaninovi* n. sp. has only 4 much weaker columellar pleats and a smooth base. *G. rauli* is much smaller in size (SL about 2 mm) in comparison to the new species (Fernandes, 1987).

G. rachmaninovi n. sp. also differs from 17 congeners known from West Africa. *Gibberula almadiensis* Pin et Boyer, 1994 has clearly marked labial denticles, a globose shape with a broad shoulder, solely 2 columellar teeth and undulated red-brown lines, which separate it safely from *G. rachmaninovi* n. sp.. *G. almadiensis* has only been found in the NW of Cabo Verde Peninsula, Dakar (Senegal) and is not recorded from Cape Verde Archipelago (Pin et Boyer, 1995).

Gibberula diadema Pin et Boyer, 1994 from Senegal (Dakar region) can easily be distinguished by its significantly smaller size (SL only 2.6 mm), its translucent appearance with its prominent protoconch. Same as *G. almadiensis* this species is only known from the Dakar region (Pin et Boyer, 1995).

Gibberula oryza (Lamarck, 1822) from Southern Spain, Western Morocco, Western Sahara, Mauritania and Senegal differs from the new species mainly by the evident labial denticles which are completely obsolete in *G. rachmaninovi* n. sp.. Although very similar in shape, *G. oryza* does not show the diagnostic waisted profile present in *G. rachmaninovi* n. sp.. The colouration of *G. oryza* usually is homogeneously brown-orange or shows broad brownish bands (Gofas, 1987) whereas the new species is very bright in colour.

G. rachmaninovi n. sp. can easily be separated from relevant species described from Angola, West Africa. It does not show any distinct labial denticulation present in *Gibberula cristata* Gofas, 1988, *Gibberula pallata* Bavay, 1913, *Gibberula benguelensis* Jousseaume, 1875, *Gibberula aurata* Bavay, 1913, *Gibberula atlantidea* (Knudsen, 1956), *Gibberula mimetica* Gofas, 1988 and *Gibberula mendacis* Gofas, 1988. *Gibberula gruveli* (Bavay, 1913), although of similar size, differs by a conspicuously convex outer lip, faint denticulations and a rounded spire. *Gibberula tantula* Gofas, 1988 shows a much smaller size (SL: 1.6 mm) and has a translucent appearance. *Gibberula columnella* (Bavay, 1913) and *Gibberula confusa* Gofas, 1988 display a rather subcylindrical shape different from *G. rachmaninovi* n. sp. and do not exceed 3 mm of shell length (Gofas, 1989).

Related Gibberulae from Sao Tomé Island, West Africa (all described by Gofas et Fernandes, 1988), also differ significantly by shell features. The main criterion is the conspicuous labial denticulation. *Gibberula modica* shows 20, *Gibberula punctillum* and *Gibberula cucullata* show 15 well visible denticles (Gofas et Fernandes, 1988) which are completely obsolete in *G. rachmaninovi* n. sp..

The numerous Mediterranean Gibberulae also display considerable differences in shell features. Thus *Gibberula caelata* (Monterosato, 1877), *Gibberula recondita* Monterosato, 1884 and *Gibberula miliaria* (Linnaeus, 1758) all show the distinct labial denticulation, *Gibberula secreta* Monterosato, 1889 strong ventroposterior callus deposits and *Gibberula epigrus* (Reeve, 1865) a much more elongate shape with a high spire. The three members of the *Gibberula philippii* group, i. e. *Gibberula philippii* (Monterosato, 1878), *Gibberula jansseni* Van Aartsen, Menkhorst et Gittenberger, 1984 and *Gibberula turgidula* (Monterosato in Locard et Caziot, 1900) all grow significantly smaller (SL 2 – 3 mm), have a translucid shell and more or less distinct labial denticulation (Gofas, 1987).

Summary:
The family Cystiscidae, including the genus *Gibberula* from Cape Verde Archipelago, has still to be revised. A comparison of *G. rachmaninovi* n. sp. to other east Atlantic congeners has been drawn. *G. rachmaninovi* n. sp. differs significantly in shell features which justifies the status of a new species. Probably this species is endemic to the Cape Verde Islands. Further investigations about the distribution and commonness of this *Gibberula* have yet to be undertaken.

Zusammenfassung:
Eine Revision der Familie Cystiscidae, darunter das Genus *Gibberula* von den Kapverdischen Inseln, steht noch aus. Ein Vergleich von *G. rachmaninovi* n. sp. mit anderen ostatlantischen Verwandten wurde gezogen. *G. rachmaninovi* n. sp. unterscheidet sich von diesen signifikant durch conchologische Eigenschaften, die den Status einer neuen Spezies rechtfertigen. Möglicherweise ist diese Spezies endemisch auf den Kapverdischen Inseln. Weitere Untersuchungen über die Verbreitung und Häufigkeit dieser *Gibberula* müssen noch unternommen werden.

Figure explanation:
Fig. 1: *Gibberula rachmaninovi* n. sp., holotype (ZSM, No. 20030020), 7.3 mm x 4.7 mm, a: ventral, b: dorsal, c: side, d: spire view

Acknowledgements:
I like to thank Mr. Emilio Rolan (Vigo, Spain) and Mr. Franck Boyer (Sevran, France) for giving helpful advice on taxonomy of the new species and for providing detailed information about the genus *Gibberula* in Cape Verde Islands and West Africa. I also want to express my gratitude to Mr. Enrico Schwabe and Mr. Michael Schrödl (ZSM) for their continued support.

References:
Coovert, G. A. et Coovert, H. K. (1995): Revision of the Supraspecific Classification of Marginelliform Gastropods. - The Nautilus, **109**(2/3): 43-110.

Fernandes, F. (1987): Descrizione di tre nuove specie di Marginellidae (Mollusca, Gastropodi) delle isole Capo Verde. - Argonauta, **3**(3/4): 259-267.

Gofas, S. (1988): The Marginellidae of Angola: The genus *Gibberula*. - Journal of Conchology **33**(2): 109-139.

Gofas, S. et Fernandes, F. (1988): The Marginellids of Sao Tome, West Africa. - Journal of Conchology, **33**(1): 1-30.

Gofas, S. (1990): Le genre *Gibberula* (Marginellidae) en Mediterranée. - Lavori della Società Italiana di Malacologia, **23**: 113-139.

Pin, M. et Boyer, F. (1995): Three new species of Marginellas from the Dakar region (Senegal). - La Conchiglia, **27**(275): 55-60.

Adress of the author:
Lars Kellner, Waffenschmiedstr. 6a, 81927 Munich, Germany;
email: lars.kellner@web.de

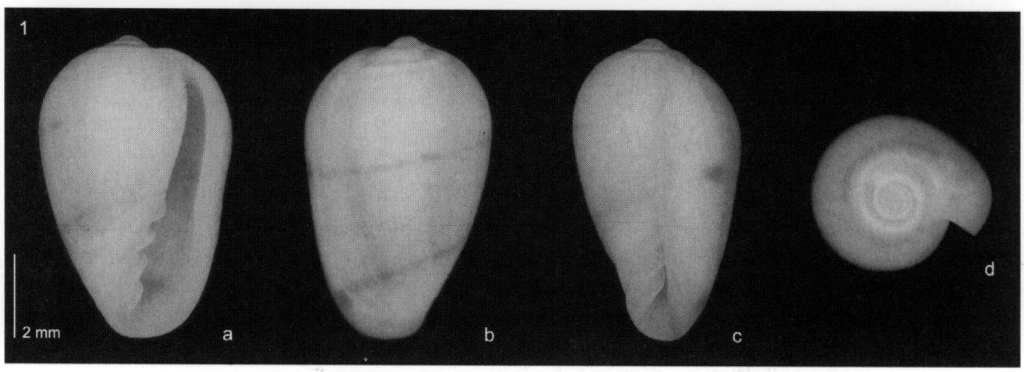

Fig. 1: *Gibberula rachmaninovi* n. sp.; a: ventral, b: dorsal, c: side, d: spire view