

Another New Species of *Archivolva* from the Red Sea (Gastropoda: Ovulidae)

By FELIX LORENZ, Buseck-Beuern, Germany

2 Plates

Keywords

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Zusammenfassung

Archivolva alexbrownii n. sp. wird aus der Gegend von Hurghada, Ägypten, beschrieben und mit der kürzlich an derselben Stelle entdeckten *Archivolva kahlbrocki* LORENZ, 2009 verglichen.

Abstract

Archivolva alexbrownii n. sp. is described from the vicinity of Hurghada, Egypt, and compared with the recently discovered *Archivolva kahlbrocki* LORENZ, 2009 from the same area.

Introduction

The richness of Ovulidae in the Red Sea was a great surprise that revealed less than two years ago, when a more intense search for these fascinating creatures started in the vicinity of Hurghada. Since then, several new species have been discovered, some of them rather spectacular, such as *Archivolva kahlbrocki* Lorenz 2009. On our recent visit to Hurghada, our friend Alexander "Brownie" Brötz had just discovered another *Archivolva*, which we were subsequently able to study in its very particular habitat. This species is larger and without a doubt the most spectacular of those Ovulidae considered endemic in the Red Sea. I am taking the pleasure to name it in honour of its discoverer

Archivolva alexbrownii n. sp.

Material

Eight adult, live taken specimens.
Holotype: 15,4 mm. Coll. MNHN 23263
Paratypes 1: 18,1 mm, 2: 16,4 mm, 3: 15,5 mm.
All coll. F. LORENZ
Paratype 4: 15,0 mm. Coll. A. BRÖTZ

Paratype 5: 16,7 mm and three further paratypes in the author's collection.

Description

Shell medium sized, slender, flattened anteriorly. The slightly humped dorsum has its widest area in the posterior quarter. The extremities are very rostrate and slightly bent up, both are covered with conspicuous longitudinal ridges dorsally, forming deeply serrated edges. The funicular area is formed by a slightly developed callus-ridge along the narrow posterior canal. The aperture is very narrow, and only widens slightly towards the anterior end. The labrum gives it an undulating shape. The protoconch is not visibly but internalized. The margins are slightly angular, forming a callus-ridge along the left margin. The labrum is rather narrow throughout, slightly constricted anteriorly, with denticles along the outer posterior and anterior margin; these denticles are continuations of the ridges ornamenting the extremities dorsally. The fossula is distinctly projecting, there is a well developed carinal ridge throughout the length of the columella. In contrast to the solid margins and base, the dorsum is very thin and transparent. There are numerous fine incised striae towards the extremities. Centrally, the dorsum appears glossy and smooth, but under magnification there are very fine irregular transverse striae also in these areas.

The general colour of the dorsum is a pale transparent pink. There is a distinct yellow suture-line encircling the entire shell along the border of the marginal and terminal callousities and the thin dorsal dome. The extremities are paler whitish, with darker pink interstices between the longitudinal striae. The basal callousities are white centrally, with yellow shades along the sides. Also the labrum shows yellow shades along the margin. The base is transparent towards the aperture, the fossula and carinal ridge are pale pink. The interior of the shell, especially towards the canals, is more saturated pink.

The paratypes all agree in these general features, including the size and the formation of the extremities and the funiculum. The protoconch is not visible, and none of the paratypes show a dorsal bulge, yet the dorsal keel may be more or less developed. The aperture may be slightly curved posteriorly, to the left, or even to the right. The degree of terminal serrations and posterior labral dentition may vary, as does the degree of rostration. One specimen (Paratype 5) is notably darker pigmented than the others, showing a reddish ground colour and more contrasting colouration of the extremities.

The living animal has a thin, transparent cream coloured mantle with barely noticeable orange dashes. There are a few small and distant papillae of yellow-white. These are rather short and wart-like when withdrawn, encircled by in a thickened area on the mantle surface. When fully extended, the papillae are transparent white and finely dendritic. The foot is pale cream colour as the mantle, with fine red, irregular stripes.

Distribution and Habitat

All specimens known of *Archivolva alexbrownii* n. sp. were found at the protected, densely overgrown entrance of a small cave in the reef, on the southeastern side of Giftun Island, offshore Hurghada, Egypt (27°11,29"N 33°59,06"E). the animal lives perfectly camouflaged among the branches of a pale cream-coloured gorgonia tentatively identified as *Solenocaulon* sp., at 47 to 51 m. In the same area and depth, typical *A. kahlbrocki* are found on purple *Acabaria* sp.

Discussion

The genus *Archivolva* was recently introduced for two Indo-Pacific species showing a conchological peculiarity not shared by other members of the family Ovulidae: the protoconch of *A. clava* (HABE, 1991) and *A. lissenungensis* (LORENZ, 2005) is situated posteriorly instead of being internalized and is hence visible in the adult shell. Also *A. kahlbrocki* LORENZ, 2009 is typical in this regard: the protoconch is well visible just above the posterior extremity.

Archivolva alexbrownii n. sp. lives in the same area as the recently described *A. kahlbrocki*, and both species are considered endemic to the Red Sea. Probably the most interesting difference between the new species and its congeners is the

internalized protoconch of *A. alexbrownii* n. sp. This feature, along with the formation of the extremities, moves the genus *Archivolva* closer to *Dentiovula* in terms of shell morphology.

The terminal longitudinal ridges and the serrations of the edges are longer and more conspicuous in *A. alexbrownii* n. sp. than in any of the congeners, and it is quite outstanding in its degree for the whole family. A single specimen of an undescribed *Archivolva* from the Spratly Islands (see LORENZ & FEHSE 2009 pl. 60 fig. 9) and occasional specimens of *A. lissenungensis* show a similar development of such striae.

The main features separating *A. alexbrownii* n. sp. from *A. kahlbrocki* are: the larger size (15-18 mm opposed to 6-13 mm in *A. kahlbrocki*). The lack of a dorsal bulge. The more produced, more distinctly and numerous striated and serrated extremities. The longer posterior extremity and a different formation of the funicular area. The animals differ considerably as *A. alexbrownii* n. sp. lacks the conspicuous darker ornamentation of the mantle. *A. alexbrownii* n. sp. is found on a soft, slightly slimy, pale cream gorgonia tentatively identified as *Solenocaulon* on behalf of its similarity to *Solenocaulon* sp. from the Indo-Pacific which constitutes the specific host of *A. clava* and *A. lissenungensis*. *A. kahlbrocki* is found on *Acabaria* sp. commonly encountered in the vicinity of the gorgonians *A. alexbrownii* n. sp. was found on.

As in the Indo-Pacific allies, the colouration of the shell varies. Most specimens of *A. alexbrownii* n. sp. have a pale cream shell, differing from the majority of *A. kahlbrocki*. However, paler and even whitish variations of *A. kahlbrocki* rarely occur, regardless of the colouration of their dark purple host.

Since its discovery two years ago, numerous specimens of *A. kahlbrocki* have been found in a several places in the northern Red Sea. Some of these shells are very similar to *A. clava* conchologically (D. FEHSE, pers. comm.). The longer, more coarsely denticulate posterior extremity and the narrower posterior canal of *A. kahlbrocki* remain consistent conchological differences, apart from the features of the animals (densely ornamented with purple in *A. kahlbrocki* instead of uniform red in *A. clava*) and the different specific hosts.

Separation of *A. alexbrownii* n. sp. from the Indo-Pacific relatives represents no problem: it

lacks the dorsal bulge observed in *A. clava*, and the formation of the terminals separate them at once. *A. lissenungensis* has a wide aperture posteriorly, and the extremities are shorter and less deeply serrated. The shells of *A. lissenungensis*, like those of *A. clava*, are considerably less solid.

Incidentally, the differences between the larger, less bulgy and paler *A. lissenungensis* and its sister *A. clava* in the Indo-Pacific are of the same nature as in their allies from the Red Sea: there is a large and slender, mostly paler *A. alexbrownii* n. sp., and a smaller, more bulgy and mostly darker *A. kahlbrocki*. However, no inference whatsoever should be made regarding the features of the shells from the bearers of their names

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Address of the Author

E-Mail: felix.lorenz@t-online.de

Plate 1 (next page)

Top row

Archivolva alexbrownii. Left: Dorsal, basal, and lateral aspects of the holotype (15.4 mm). On right: Paratype 1 (18,1 mm)

Second row

Archivolva alexbrownii. Left: Paratype 2 (16.4 mm); Right: Paratype 3 (15.5 mm)

Third row

Left: *Archivolva alexbrownii*. Paratype 5, dark pigmented shell (16.7 mm)

Right: *Archivolva lissenungensis*. Malaysia (17.1 mm)

Fourth row

Left: *Archivolva kahlbrocki*. Holotype, dorsal, basal and lateral aspects (8,3 mm)

Middle: *Archivolva kahlbrocki*. Albinistic shell (12.6 mm)

Right: *Archivolva clava*. N Sulawesi (12.9 mm)

Plate 2 (page after next page)

Archivolva alexbrownii, living animals and habitat.

Photos: Upper left and right: JANA KRATZSCH,

Middle left: SVEN KAHLBROCK; right: FELIX LORENZ

Bottom: The entrance of the cave which all types of *A. alexbrownii* n. sp. were found, at 47 m. Foto JANA KRATZSCH

Plate 1



Plate 2

