

Studies on Cardiidae. 2.<sup>1</sup>

An *Acanthocardia* hybrid from southern Portugal  
(*Bivalvia*)

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Shells that are morphologically intermediate between *Acanthocardia spinosa* (Lightfoot in Solander, 1786) and *Acanthocardia aculeata* (Linné, 1767) are reported from the Portuguese Algarve coast. Hybrid forms between these two species are not known from the literature. The supposed hybrids are compared with the two nominal species and illustrated.

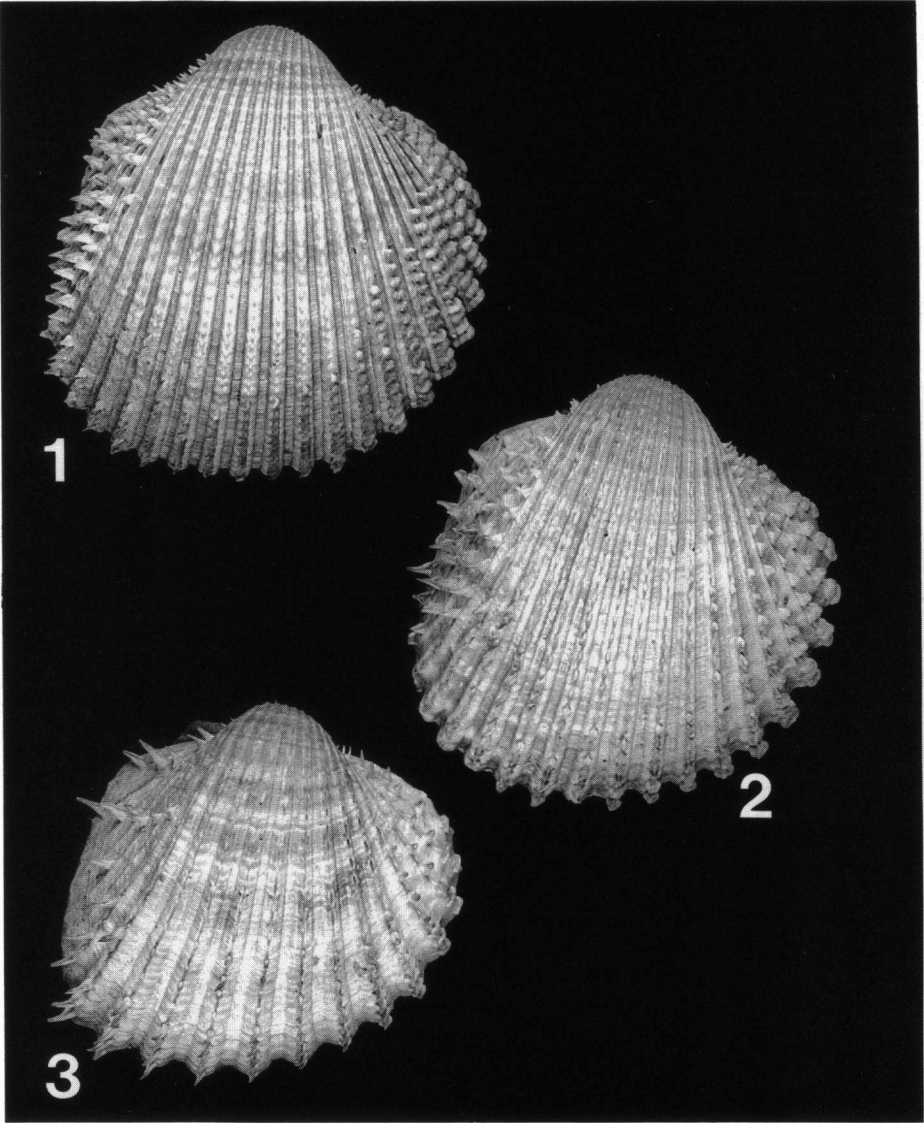
Key words: *Bivalvia*, *Cardiidae*, *Acanthocardia*, hybridism, Portugal.

During November and December 1989 the second author and his wife made a collecting trip to the Portuguese Algarve coast. On the third of November they visited the harbour of Sagrès, near the southwesternmost part of the Algarve coast. As usual the harbour yielded some interesting malacological discoveries, but the most important find of that day was a net which was left on the quay by the skipper of the cutter 'Deusa da Paz'. The several hundred *Acanthocardia spinosa* (Lightfoot in Solander, 1786) were, according to the skipper, entangled in the net during trawling activities about 5 km east of Sagrès, on muddy sand with seaweed, at a depth of 60 m. This is one of the most beautiful *Acanthocardia* species and good specimens are quite difficult to obtain, so that the vast majority of the shells (about 300), most with the animals still inside, were collected and transported to the hotel.

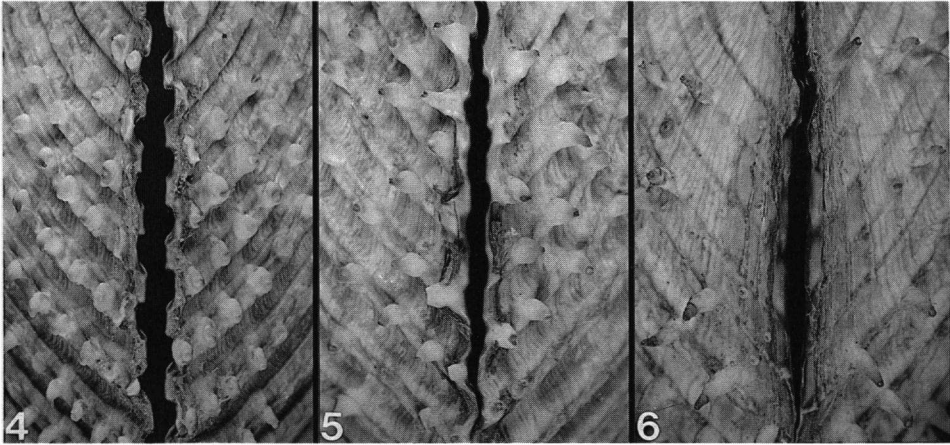
Back home, all specimens were cleaned and inspected. It was not until then that several odd specimens were recognized as being different.

Together with the *Acanthocardia* specimens, several *Callista chione* (L., 1758) were caught. All but nine of the *Acanthocardia* specimens were positively identified as *A. spinosa*, a very common species along the Algarve coast. Among them were two malformed specimens (figs. 7-8). All normal specimens were brown or white. These white specimens represent a normal colour-form and are not albinistic (Wagner & Wagner, 1986: 84, s.n. *A. erinaceum*). Nine specimens show characters intermediate between those of *A. spinosa* and *A. aculeata* (L., 1767) as can be seen in table 1. One of these nine specimens was completely white, like the white *A. spinosa* cited above. All specimens are completely adult. Unfortunately no visible growth marks could be detected, so that it was impossible to determine the age of the specimens. However, all but two specimens have about the same size, so it seems justified to suppose that

<sup>1</sup> Studies on Cardiidae. 1. See: Gloria Maris 27: 86-91, 1988.



Figs. 1-3. Portuguese *Acanthocardia* species. 1, *A. spinosa* (Lightfoot in Solander, 1786), Algarve, off Sagrès, leg. W.J.H. Onverwagt, 3 November 1989 (R. Voskuil colln. No. 1394). 2, *A. aculeata* × *spinosa* hybrid, same data (R. Voskuil colln. No. 1698). 3, *A. aculeata* (L., 1767), Algarve, Lagos, leg. B. Groenendaal, April 1980 (R. Voskuil colln. No. 901). All about 2/3 natural size.



Figs. 4-6. Posterior margin of Portuguese *Acanthocardia* species. 4, *A. spinosa* (Lightfoot in Solander, 1786) 5, *A. aculeata* × *spinosa* hybrid. 6, *A. aculeata* (L., 1767). All photographs enlarged.

they all originate from one year's spatfall. The two larger specimens look very gerontic, so we suppose these to be one or, perhaps, two years older.

It is worth noting that not a single *A. aculeata* was obtained from the net, although it is very common along the Algarve coast and several specimens were collected from other nets.

As far as we know, no other hybrid *Acanthocardia* specimens were recorded from Portugal or other localities before.

To show the intermediate characters of the supposed hybrid-form we give the significant characters of the supposed hybrid as well as those of *A. aculeata* and *A. spinosa* (table 1).

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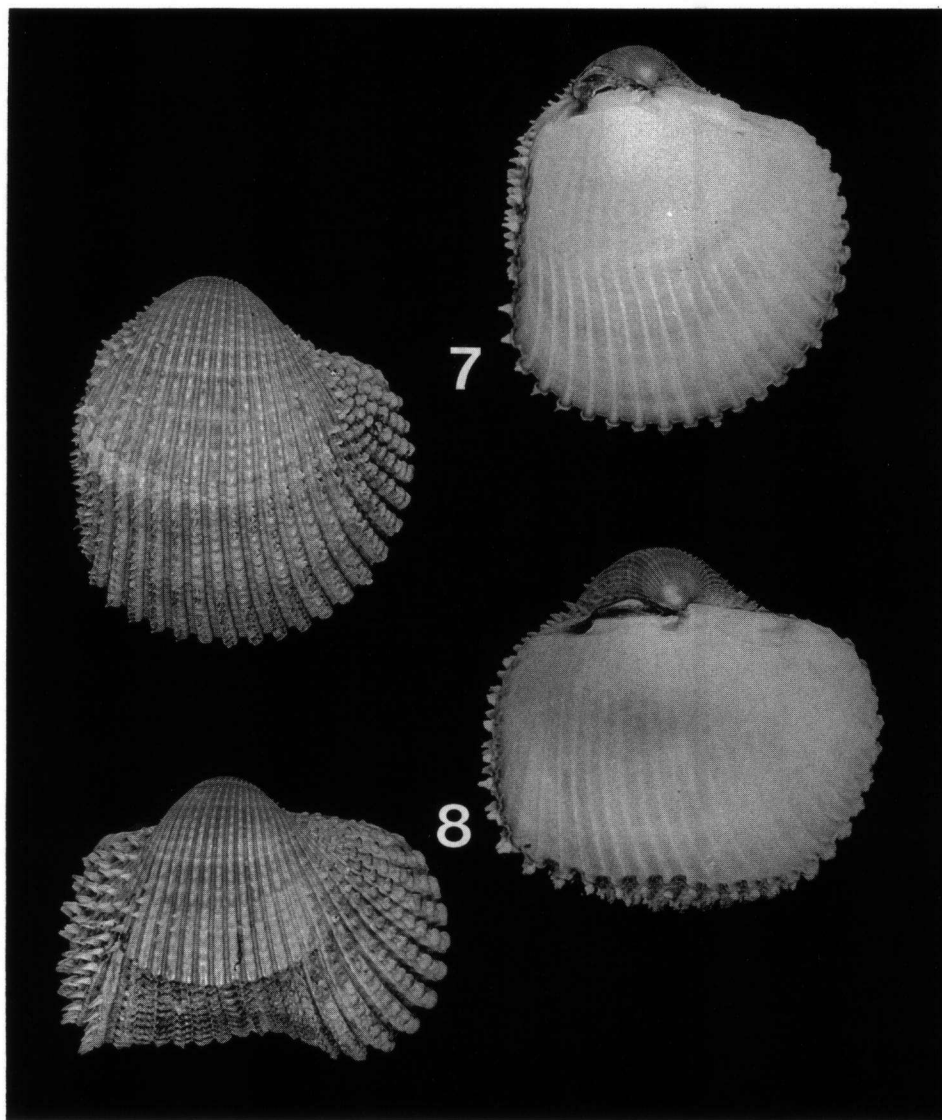
*A. spinosa* (Lightfoot in Solander, 1786) (fig. 1)

- Algarve specimens: 30-33 ribs;
- lunula covered with small papillae;
- posterior margin heavily serrate (fig. 4);
- ribs high and quadrate;
- stubby spines posteriorly;
- wart-like spines anteriorly, very closely set.

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*A. aculeata* × *spinosa* hybrid (fig. 2)

- 25-28 ribs;
  - lunula small but smooth;
  - posterior margin slightly serrate (fig. 5);
  - ribs relatively low, rounded quadrate;
  - relatively high and pointed spines posteriorly;
  - blunt, stubby spines anteriorly, not so closely set as in *A. spinosa*, closer set than in *A. aculeata*.
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Figs. 7-8. Two malformed specimens of *Acanthocardia spinosa* (Lightfoot in Solander, 1786), Portugal, Algarve, off Sagrès, leg. W.J.H. Onverwagt, 3 November 1989 (W.J.H. Overwagt colln.). All about 2/3 natural size.

*A. aculeata* (L., 1767) (fig. 3)

- Algarve specimens: 21-22 ribs;
  - lunula small but smooth;
  - posterior margin almost smooth (fig. 6);
  - ribs low and triangular;
  - high and pointed spines posteriorly;
  - lower, stubbier spines anteriorly, not closely set.
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Table 1. Comparison of the Algarve *Acanthocardia* material.

Unfortunately the phenomenon was recognized too late. As a consequence only some specimens of *A. spinosa* were preserved in alcohol. It would have been interesting to compare the soft parts of the supposed hybrid, especially their genital organs, with the soft parts of both nominal species. All material is kept in the private collection of the authors.

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