

Solecurtus afroccidentalis von Cosel, 1989:

a less-known species of *Solecurtus* from western Africa

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1. Introduction

In *Neptunea*, 1(1)¹, we elaborately discussed the representatives of the family Solecurtidae in European waters. Two of those four species also occur in the western African province, namely *Azorinus chamasolen* (da Costa, 1778) down to northern Angola and *Solecurtus scopula* (Turton, 1822) down to Mauritania. On top of this, another species only occurring in this region can be found here, namely *Solecurtus afroccidentalis* von Cosel, 1989. Moreover, this name literally means ‘western African *Solecurtus*’.

2. Previous history

As a matter of fact, it is quite surprising that this rather big (45-65mm) species was only introduced as new to science in 1989. However, its existence had already been mentioned by **Michel Adanson**², a French naturalist who had thoroughly been studying the Senegalese fauna for more than four years. He called this species ‘*le Golar*’.

According to **Bucquoy, Dautzenberg and Dollfus** (1895)³, **Linnaeus** made a mistake in his description of *Solecurtus strigilatus* in his 12th edition by referring to an illustration of ‘*le Golar*’ by Adanson (Voyage au Sénégal, pl. XIX, fig. 2), because the illustrated shell is completely different from *Solecurtus strigilatus*.

Philippe Dautzenberg mentioned this species for a second time in 1910, but strangely enough under the name of ‘*Solecurtus strigilatus*’. It is considered identical to the widely known species from the Mediterranean, without any further comments. Both species indeed resemble each other fairly well.

The Dautzenberg-collection, kept in the Royal Belgian Institute for Natural Sciences (K.B.I.N., Brussels), is host to the following specimens:

- one live-taken bivalved shell (‘Sénégal’ / H. 27.5 mm and L. 69.0 mm);
- three loose valves: one big, broken valve and two juvenile valves (‘St. Vincent, archipel du Cap Vert’, coll. Bouvier / H. 18.5 mm L. 42.0 mm and H. 10.5 mm L. 29.5 mm).

We do not consider it impossible that Dautzenberg himself had doubts about the name ‘*strigilatus*’. His labels namely only state ‘*Solenocurtus*’.

¹ Nolf, F. & Verstraeten, J., 2002. The family Solecurtidae d’Orbigny, 1846 (Bivalvia: Heterodonta: Veneroida) in European waters. *Neptunea*, 1(1), 1-17.

² Adanson, M., 1757. Histoire des coquillages. In: Histoire Naturelle du Sénégal. Paris, C.J.B. Bauche. 96 + 275 pp., 19 pl.

³ Bucquoy, E., Dautzenberg, Ph., & Dollfus, G., 1895. Les Mollusques Marins du Roussillon, Tome II, fascicule X, Pelecypoda (fascicule 23), 519-522.

In his discussion of the **Adanson**-collection (Les Mollusques d'Adanson, p.347) **E. Fischer-Piette** (1942) stated that no specimen labelled '*le Golar*' had been found, but that only one specimen without any labels and another specimen from Sète (southern France) had been collected.

The catalogue within the manuscript on the same collection does not refer to '*le Golar*' either. It is surprising that this author did not give the inscription <<2795, Golar ad.91A, Tagal hist. Seneg.>> on a specimen of *Tagelus angulatus* Sowerby, 1874 [= *Tagelus adansoni* (Bosc, 1801)] a moment's thought.

Adanson possibly confused both species and therefore the original specimens of '*le Golar*' may have ended up somewhere else.

Solecurtus afroccidentalis was described and figured by **Maurice Nicklès**⁴ (p.217-218, figure nr.420) under the name of '*Solenocurtus (!) strigilatus* Linné' in 1950.

The same author⁵ studied the species again in 1955, by means of material collected during the Atlantide-expedition near Guinea, Freetown (Sierra Leone) and Liberia.

He noticed that the studied specimens were more elongate and less densely ribbed than specimens from European waters were. However, he considered these differences too minor to establish a separate species and even too minor to establish a new variety. **Nicklès** reported on specimens from the Dautzenberg-collection, collected by Chautard near Dakar (Senegal). In August 2002, we could only retrieve a single such specimen (!?) in the K.B.I.N., labelled 'Sénégal'.

This species was studied for a final time – based upon new material - by Rudo **von Cosel**⁶, a specialist in the field of Bivalvia, while preparing the paper on Bivalvia from West Africa he wanted to publish.

Contrary to **Dautzenberg** and **Nicklès**, he decided to introduce the species as new to science in 1989.

3. Differences between *Solecurtus afroccidentalis* von Cosel, 1989 and *Solecurtus strigilatus* (Linnaeus, 1758)

Von Cosel (1989) mainly compared the western African species with *S. strigilatus* Linnaeus, 1758. This name is sometimes used in literature to refer to the new species.

The differences are the following:

- *S. strigilatus* has got a somewhat shorter and broader shell (length/width ratio = 1.9 – 2.5 : 1; whereas it is 2.1 – 2.7 : 1 in *S. afroccidentalis*);
- the **front** is contracted in *S. afroccidentalis*;
- the **umbo** in *S. strigilatus* is closer to the middle, whereas it is more protruding above the edge of the shell in *S. afroccidentalis*;
- *S. strigilatus* is rather **purple** whereas *S. afroccidentalis* is **salmon-coloured**: specimens from the Cape Verde Islands are usually paler than those from continental West-Africa.

⁴ Nicklès, M., 1950. Mollusques testacés marins de la côte occidentale d'Afrique. Paris, Paul Lechevalier. 269 pp., 464 fig.

⁵ Nicklès, M., 1955. Atlantide Report No.1, Scientific Results of the Danish Expedition to the Coasts of Tropical West Africa 1945-1946, Scaphopodes et Lamellibranches récoltés dans l'ouest Africain, 92-237, fig.1-41.

⁶ Cosel, R., von, 1989. Taxonomy of tropical West African bivalves. I. Four new species of eulamellibranchiate bivalves. Bull. Mus. natn. Hist. nat., Paris, 4e sér., **11**, section A, n°2, 315-331.

For a detailed description, we refer to **von Cosel**'s article (1989)⁷. The illustrations we have attached sufficiently illustrate the differences.

4. Range

According to von Cosel, this tropical species lives in sandy bottoms in the Cape Verde Islands and Senegal (Dakar) and from Gabon to northern Angola (Punta de Mussulo) at a depth of 15 to 40 metres. This species has never been found in Ghana⁸. So, this species shows the typical split range present in many western African species.

This range is confirmed by the presence of specimens (São Vicente Island, Cape Verde Islands) in the Graham Saunders collection and the two loose valves (Cape Verde Archipelago) in the Dautzenberg-collection. The specimens from continental West Africa in our personal collections were obtained from the late Marcel Pin in Senegal.

Solecurtus strigilatus Linnaeus, 1758 lives in the Mediterranean Sea and southwestern Europe. It occurs in the Bay of Setubal (Portugal)⁹ and the Strait of Gibraltar (M'Diq)¹⁰. Finds of this species further south than north-western Africa are doubtful and were not confirmed by von Cosel. The material collected by the CANCAP-expeditions did not contain any specimens belonging to this species¹¹. On the other hand, *Solecurtus afroccidentalis* von Cosel, 1989 is not found any further north than the Cape Verde Archipelago.

This allows us to conclude that there is a gap between the ranges of both species, ranging from the Cape Verde Archipelago across Mauritania up to somewhere in Morocco.

Both species probably descend from the same ancestor, yet with a separate evolution of the populations comparable to the distribution of *Bolinus brandaris* (L., 1758) and *Bolinus cornutus* (L., 1758).

5. Acknowledgements

We would like to thank Jeroen Goud (Leiden, The Netherlands) and Peter Ryall (Maria Rain, Austria) for procuring useful information, Graham Saunders (Dewlish, Dorchester, U.K.) for the loan of specimens from his personal collection, Jacky Van Goethem, Thierry Backeljau and Claudine Claes from the K.B.I.N. (Brussels, Belgium) for the favourable reception and the aid they gave us while consulting the Dautzenberg-collection. Robert Coelus (De Haan, Belgium) has critically perused the manuscript by and David Monsecour (Rillaar, Belgium) has kindly made the English translation.

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⁷ Cosel, R., von, 1989. Taxonomy of tropical West African bivalves. I. Four new species of eulamellibranchiate bivalves. Bull. Mus. natn. Hist. nat., Paris, 4e sér., **11**, section A, n°2, 315-331.

⁸ Personal comments by Peter Ryall (Maria Rain, Austria), July 2003.

⁹ Nobre, A., 1938-40. Fauna Malacologica de Portugal. Moluscos Marinhos e das Aguas salobras. Porto, Comp. Editora do Minho. 807 pp., 87 pl.

¹⁰ Material collected by S. Gofas.

¹¹ Personal comments by Jeroen Goud, June 2003.

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***Solecurtus strigilatus* Linnaeus, 1758**

Vinaros, near Benicarlo, Spain.
36.0/84.0 mm.
Collection F. Nolf.



Grado, Italy – dredged.
40.0/88.0 mm.
Collection F. Nolf.

Solecurtus afroccidentalis von Cosel, 1989



Dakar, Senegal, W. Africa.
26.5/61.5 mm.
Collection F. Nolf.



Solecurtus afroccidentalis von Cosel, 1989



Bay of Matiota, São Vicente Island, Cape Verde Islands.
Dredged amongst coral rubble.
33.0/78.0 mm.
Collection G. Saunders.



Solecurtus afroccidentalis von Cosel, 1989



Porto Grande, Mindelo, São Vicente, Cape Verde Islands.
Dredged in the inner harbour – 1979.
Left valve: 26.5/65.5 mm
Collection J. Verstraeten (leg. G. Saunders).



Bay of Matiota, São Vicente, Cape Verde Islands.
Dredged amongst coral rubble.
16.5/40.0 mm (juvenile bivalved shell).
Collection G. Saunders.

Solecurtus afroccidentalis von Cosel, 1989
in the collection Dautzenberg



São Vicente, Cape Verde Islands.
Left valves.
Above: 18.5/42.0 mm.
Below: 10.5/29.5 mm.
Collection Ph. Dautzenberg.



Senegal, W. Africa.
27.5/69.0 mm.
Collection Ph. Dautzenberg.

**Comparison between *Solecurtus afroccidentalis* von Cosel, 1989
and *Solecurtus strigilatus* Linnaeus, 1758**



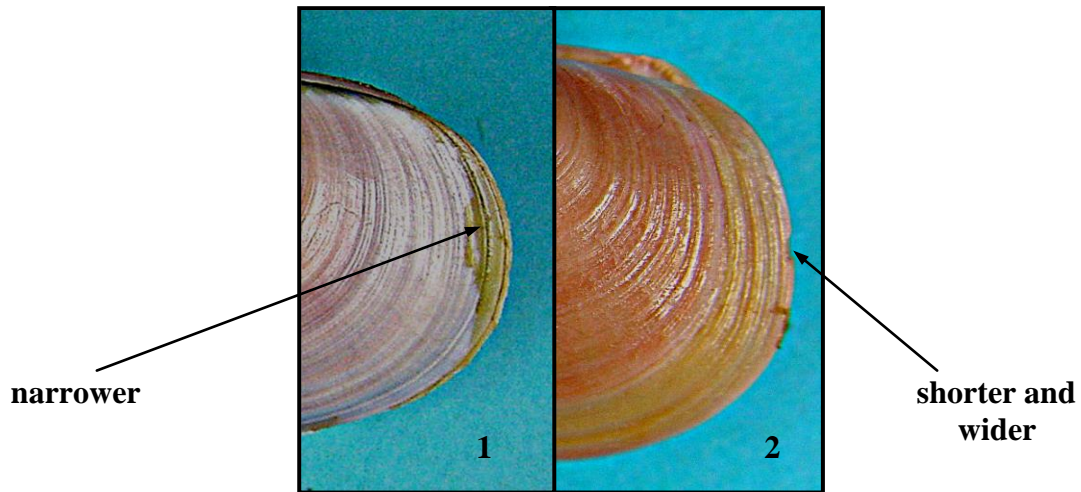
Casamance, Senegal, W. Africa.
Dredged at a depth of 80-90 m.
30.0/72.0 mm.
Collection J. Verstraeten.



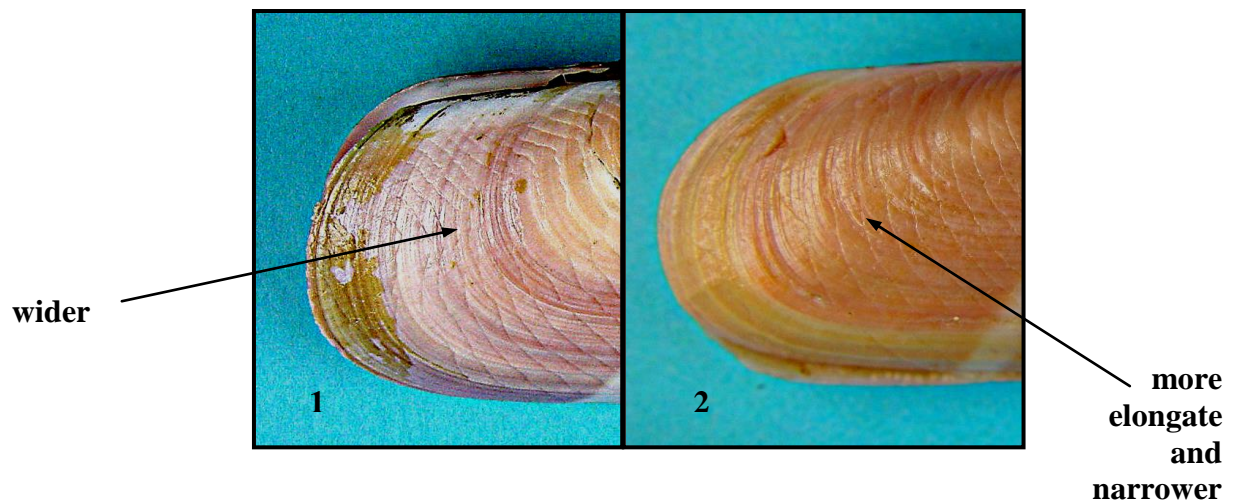
Grado, Italy – dredged.
35.0/79.0 mm.
Collection F. Nolf

**Differences between *Solecurtus strigilatus* Linnaeus, 1758 (1)
and *Solecurtus afroccidentalis* von Cosel, 1989 (2)**

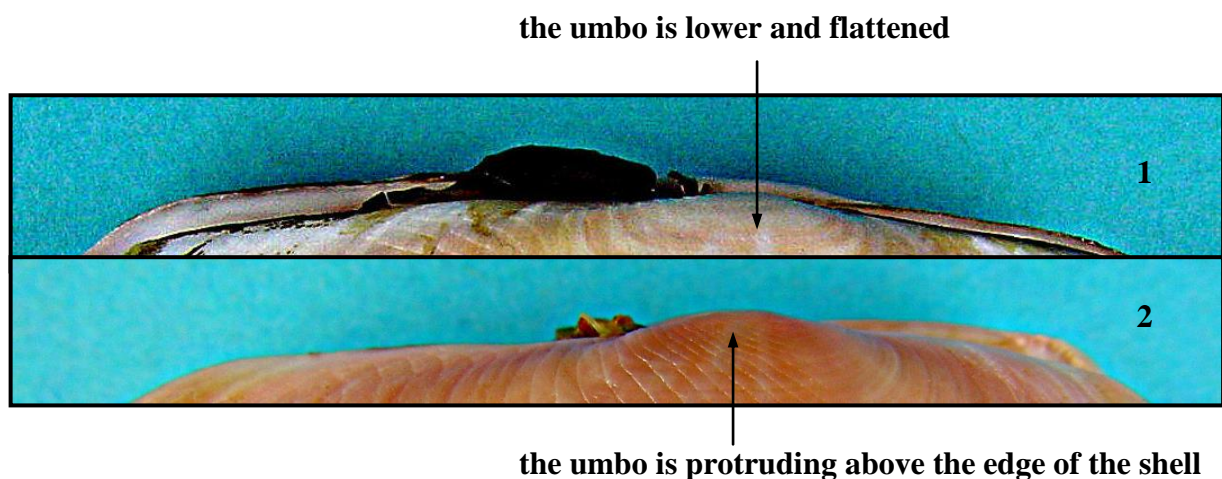
Comparison of the back:

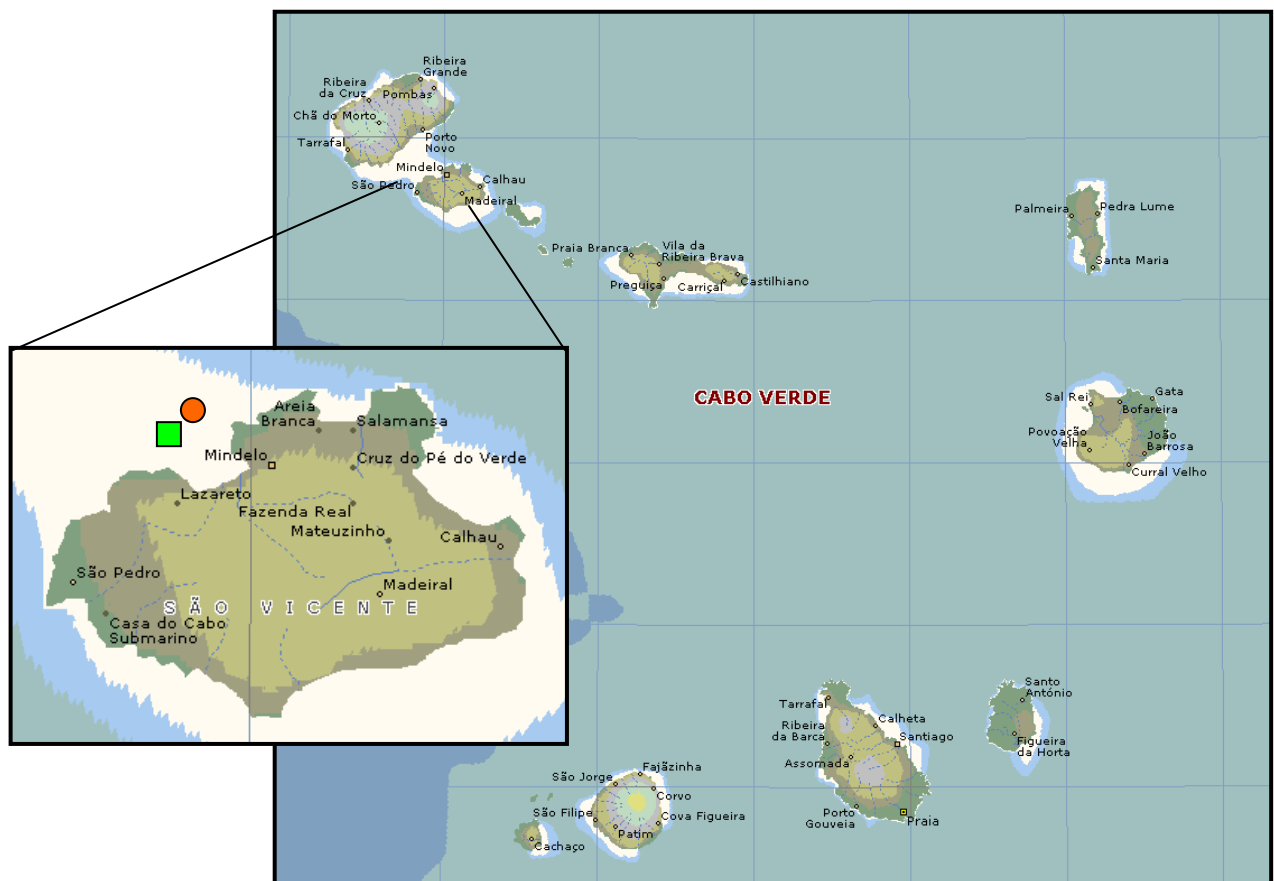
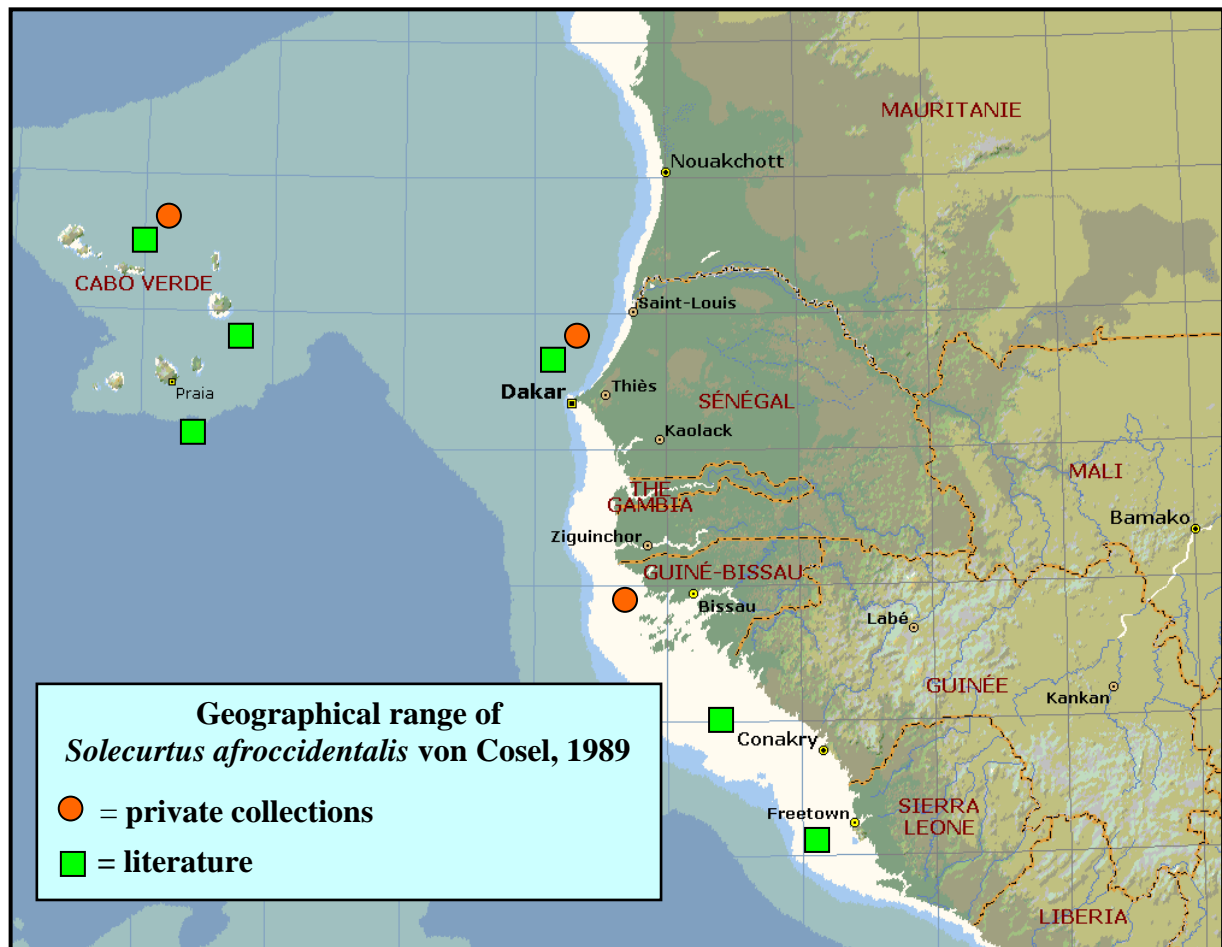


Comparison of the front



Comparison of the umbo:







Geographical range of
Solecurtus afroccidentalis von Cosel, 1989

Additions to 'The family Solecurtidae d'Orbigny, 1846 in European waters'

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1. Introduction

In *Neptunea*, **1**(1), 1-17, (March 2002), we published an article on the presence of the **family Solecurtidae** in **Europe**. Its aim was to make the differences between the four representatives, namely *Azorinus chamasolen* (da Costa, 1778), *Solecurtus scopula* (Turton, 1822), *Solecurtus strigilatus* (Linnaeus, 1758) and *Solecurtus multistriatus* (Scacchi, 1835) clear.

The present article aims at adding more data collected in the previous year. They allow us to draw a better picture of the geographical ranges. Moreover, the reliability of the identification tools has been confirmed.

2. *Azorinus chamasolen* (da Costa, 1778)

Up to now, our observations had been limited to specimens from the Mediterranean Sea, except for a single record from Lands End, southwestern England. The latter is stored in the collection René Vanwalleghem (Ostend, Belgium) and does not have a periostracum. It was illustrated in *Neptunea* **1**(1), page 14.

In May 2003, two specimens were found by an Ostend fisherman 15 miles south of the 'Smalls'-fishing grounds (= N. 51°43' W. 5°40') in the Bristol Channel. They were found alive in mud at a depth of 85 metres. Both specimens are rather big for the species, at least when compared to average-sized representatives from the Mediterranean Sea.

Their respective dimensions are: H. 19.5 mm L. 43.0 mm and H. 22.0 L. 45.0 mm.





***Azorinus chamasolen* (da Costa, 1778)**

In mud at a depth of 85 m. – 15 miles south of the ‘Smalls’-fishing grounds, N. 51°43’ W. 5°40’, in the Bristol Channel, W. England, United Kingdom – May 2003.
Collection R. Vanwalleghem.

Thanks to Jean-Paul Kreps (Knokke, Belgium), we could obtain a specimen dredged by a Belgian fishing boat at a depth of 90 metres near the Plateau de Rochebonne in the Bay of Biscay in June 1999.

The specimen measures H. 21.0 mm and L. 46.0 mm. This too is a big specimen, but it is – when it comes to other characteristics - not at all different from the Mediterranean representatives of its species.



***Azorinus chamasolen* (da Costa, 1778)**

Plateau de Rochebonne, Gulf of Biscay, western France.
Dredged by Belgian fishermen at a depth of 90 metres - June 1999.
Collection F. Nolf.

3. *Solecurtus multistriatus* (Scacchi, 1835)

Up to now, our collections contained numerous specimens from the Irish Sea and the English Channel, but they lacked material from the North Sea or any northern waters.

However, we found a single specimen from the **Shetland-Islands**, Scotland, United Kingdom in the Robert Coelus collection (De Haan, Belgium). It had been dredged dead by a ‘*scallop-trawler*’ near Lerwick in 1996.

We can state here that it is known for certain that the specimen at hand is *S. multistriatus*. The most typical characteristic is the **umbo**, which is – except for one millimetre - **exactly in the middle**.

The specimen measures: H. 19.5 and L. 40.5 mm. This find confirms the literary data that report this species from all waters surrounding the United Kingdom. For the time being, the Shetland Islands are the northernmost locality we can confirm.



Solecurtus multistriatus (Scacchi, 1835)
Shetland Islands, Scotland, U. K. – 1996 - collection R. Coelus.

4. *Solecurtus scopula* (Turton, 1822)

The fact that *Solecurtus multistriatus* (Scacchi, 1835) and *S. scopula* (Turton, 1822) are easily confused is no longer a surprise to us since we found that they occur in the same waters. We already knew that *S. scopula* occurred west of France through finds in oyster farms¹.

These observational data were confirmed by a find of this species by a Belgian fisherman at a depth of 140 metres on the ‘Plateau de Rochebonne’ in the **Gulf of Biscay** in June 2000 (ex coll. J.-P. Kreps).

¹ Nolf, F. & Verstraeten, J., 2002. The family Solecurtidae d’Orbigny, 1846 (Bivalvia: Heterodonta: Veneroida) in European waters. *Neptunea*, **1**(1), 1-17.



Solecurtus scopula (Turton, 1822)

Plateau de Rochebonne, Gulf of Biscay, western France. Dredged at a depth of 140 m – June 2000.

Above: H. 29,5 mm L. 62,5 mm.

Below: H. 28,0 mm L. 63,0 mm.

Collection F. Nolf.



We have some two shells at our disposal, with the following respective measurements: H. 28.0 mm L. 63.0 mm and H. 29.5 mm L. 62.5 mm.

In *Neptunea*, 1(1)² we mentioned the Bay of Morbihan as northernmost locality. However, we now have a specimen from **Liverpool Bay** (Irish Sea, northwestern England, United Kingdom) at our disposal. Fishermen from Ostend had already dredged *S. multistriatus* in these fishing grounds before.

The particular specimen, originating from the collection J.-P. Kreps (Knokke, Belgium), was misidentified as *S. multistriatus*, which is of no surprise to us as this – slightly damaged and deformed – specimen seems to be a kind of transitional stage between both species when it comes to the height-width ratio. However, we have never used this parameter as a full distinctive tool to distinguish both species. After measuring tens of specimens of both species, there does not seem to be a constant ratio within the species. This has probably to do with the special soil and the way of life of these molluscs, which permanently live in boreholes with an average length of 17-18 centimetres³.



Solecurtus scopula (Turton, 1822)
Liverpool Bay, Irish Sea, NW England, U.K.
Dredged by Belgian fishermen at a depth of 45 m. April 1989.
H. 16.0 mm L. 36.0 mm.
Collection F. Nolf.

² Nolf, F. & Verstraeten, J., 2002. The family Solecurtidae d'Orbigny, 1846 (Bivalvia: Heterodonta: Veneroida) in European waters. *Neptunea*, 1(1), 1-17.

³ Dworschak, P.C., 1987. Burrows of *Solecurtus strigilatus* (Linné) and *S. multistriatus*. (Scacchi) (Bivalvia: Tellinacea). *Senckenbergiana marit.* 19(3-4), 131-147.

This special shell is above all interesting because it allows us to test the reliability of the identification tools we drafted after surveying tens of specimens belonging to both species. What at first sight seems to belong to *S. multistriatus* because of the narrower shell in reality belongs to *S. scopula*. We point out the **umbo**, situated **at one third away from the front**, the **lighter shell sculpture** and the **groove at the inside of the semi-translucent valves**. This last characteristic is an additional parameter, typical of *S. scopula*. It is hereby proposed as an extra and fully reliable identification tool. The confirmation of this species' occurrence in English waters is not without any taxonomical importance. A. Warén (1983), who studied the species described by William Turton, states that the type material of *Solecortus scopula* has gone astray and that the type locality is situated near Exmouth (southern England, U.K.).



Nevertheless, it is possible that the shells at hand in this case were specimens of *S. multistriatus*. As both species are living sympatrically in English waters, it is just as well possible that both species were present in the examined lot. This suggestion might seriously turn the taxonomy of both species upside down, but as long as nothing has been proven, the nomenclature of both species remains unchanged.

6. Acknowledgements

We would like to thank Robert Coelus (De Haan, Belgium) and René Vanwalleghem (Ostend, Belgium) for the loan of specimens of respectively *Solecortus multistriatus* and *Azorinus chamasolen*. R. Coelus also took care of critically perusing the manuscript. Jean-Paul Kreps (Knokke, Belgium) was a great help as to collecting new material. David Monsecour (Rillaar, Belgium) kindly provided the English translation.

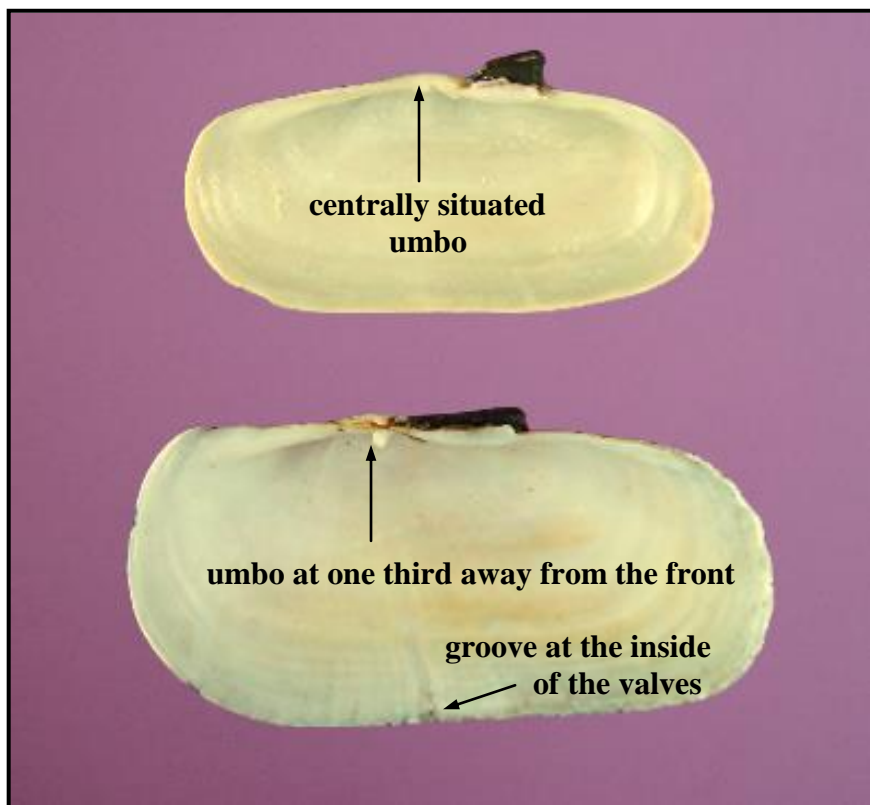
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**Comparison between *Solecurtus scopula* from Liverpool Bay (1)
and *Solecurtus scopula* from the Gulf of Biscay (2)**



**Comparison between *Solecurtus multistriatus* (Finistère, W. France)
and *Solecurtus scopula* (Gulf of Biscay)**



8. Geographical distribution in western and northern Europe



Distribution of *Azorinus chamasolen* (▲), *Solecurtus multistriatus* (●) and
Solecurtus scopula (■)

by means of literary data and specimens in our private collections.