

**The family Solecurtidae d'Orbigny, 1846
(Bivalvia: Heterodonta: Veneroida)
in European waters**

Frank Nolf & Johan Verstraeten

1. *Solecurtus multistriatus* (Scacchi, 1835): a 'new' species for the Mediterranean Sea

In 1994 the Italian authors **Paolo Mariottini, Carlo Smriglio and Cesare Ciommei** published an interesting article in *Basteria*, entitled 'Solecurtus multistriatus (Scacchi, 1835), a good marine bivalve species from the Mediterranean Sea (Bivalvia, Heterodonta : Solecurtidae)'.

In this article it was proven that *Solecurtus multistriatus* (Scacchi, 1835) is a valid marine bivalve species, living in the Mediterranean Sea, as a member of the family Solecurtidae. This species was discovered and described as a fossil species, collected in the vicinity of Gravina, Puglia in Italy.

The authors based themselves solely on specimens of *S. multistriatus* from the Mediterranean Sea and especially on specimens from the Italian coastline. They mention that **Monterosato** (1872, 1875, 1878) also considered *S. multistriatus* as a valid species, living from the Mediterranean Sea to the Northern Atlantic Ocean (!).

A number of problems arise with regard to this mysterious species:

- the controversy concerning the correct name: is it sound to fall back on the fossil ancestor?
- is *S. multistriatus* actually living in the more northern waters of the Atlantic Ocean (North of Spain, France, United Kingdom)?
- what are the differences with similar species?
- what about the variability within the species?

2. *Solecurtus multistriatus* (Scacchi, 1835) and *S. scopula* (Turton, 1822) in the Atlantic Ocean and the seas surrounding the British Isles

2.1. *Solecurtus scopula* (Turton, 1822)

On the 5th of April 1997 Frank Nolf and Christiane Vander Gucht (Ostend, Belgium) found four specimens of a *Solecurtus* in an oyster farm off **Plouharnel** (Morbihan, French Brittany, France), which upon closer investigation turned out to be *Solecurtus scopula* (Turton, 1822). This locality was later on confirmed by Guus Gulden (Rotterdam, The Netherlands) and Frank Swinnen (Lommel, Belgium).

Up to now we haven't any knowledge of findings north of the Gulf of Morbihan.

2.2. *Solecurtus multistriatus* (Scacchi, 1835)

In April 1999, Johan Verstraeten (Ostend, Belgium) did a remarkable finding at the annual London Shell Show, organised by the British Shell Collectors Club. At that time an old collection was being auctioned, very artistically displayed in wooden drawers with loads of other nature artefacts. The shells were mostly of a lesser quality and had various origins. However, two shells belonging to the Solecurtidae clearly attracted the attention.

One of the specimens was in good condition, the other one was clearly dead collected but still showed the sculpture of the shell.

The label mentioned ‘**Scilly Isles**’, a small group of islands southwest of Great Britain, as a locality. Once the auction was finished, the new owner was kind enough to sell this specimen to Johan Verstraeten. It proved to be a specimen of *S. multistriatus*.

Other findings confirmed this species’ occurrence in northwestern Europe.

Robert Coelus (De Haan, Belgium) found some empty valves of small *S. multistriatus* on the island of **Herm (Channel Isles)** in March 1990 at very low tide.

Frank Nolf received a complete shell from Graham Saunders (Great Britain) which was collected in **Alderney (Herm, Channel Islands, Great Britain)** in April 1974.

During the last decennia, Ostend fishermen sporadically brought in specimens coming from **Cardigan Bay (Irish Sea)** and the **English Channel**, so it proved to be a rare species in the northern waters (collections F. Nolf, F. Swinnen and R. Vanwalleghem).

The only specimens known to us from the **Atlantic Ocean** were collected by Richard Van Belle (St. Niklaas, Belgium) in the harbour of Pointe de Moustierlin, off Bénodet, (W. France).

All these shells show no difference whatsoever with the illustrations provided by our Italian colleagues P. Mariottini, C. Smriglio en C. Ciommei. They could not be distinguished from the two specimens coming from the neighbourhood of **Chioggia (Italy)**, which are in the collection of F. Nolf, neither from the valves found in **Grado (Adriatic Sea, Italy)**, that are present in the collection of Koen Fraussen (Aarschot, Belgium).

As such we seem to be dealing with only one species with a distribution from the Irish Sea (or even more northerly?) over the Atlantic Ocean to the Mediterranean Sea. This proves Monterosato’s statement! (cfr. 1.)

3. What is the correct name of this species?

The status van *S. multistriatus* (**Scacchi, 1835**) remains doubtful, especially because most authors (Monterosato, 1884; B.D.D., 1895; Nordsieck, 1969; Parenzan, 1976) do not differentiate with *S. scopula* (**Turton, 1822**).

The figure and description of **Scacchi**, based on a **fossil specimen**, refer to a rather small shell, which essentially deviates from any other living species. On the other hand all other names used are **synonyms** of *Solecortus scopula* (**Turton, 1822**): *Solen candidus* Renier, 1804; *Solecortus albus* de Blainville, 1827; *Solen gallicus* Chenu, 1843; *Solen albicans* Nardo, 1847 and *Adasius loscombeus* Leach, 1852.

Awaiting further clarification, we personally agree with the choice of Paolo Mariottini, Carlo Smriglio and Cesare Ciommei on the name *S. multistriatus* (**Scacchi, 1835**).

4. Figures of these species in literature

Not many authors succeeded in illustrating and describing *S. multistriatus*. However **Bucquoy, Dautzenberg and Dollfus (B.D.D.) (1895)** used a photo of this species, which was wrongly identified as *S. candidus* var. *oblonga* **Jeffreys, 1865**. This specimen came from St. Malo (French Brittany, France) (pl. LXXVII, fig. 6).

B.D.D. stated that this variety corresponds with the shells most authors call *S. scopula* (Turton, 1822).

It is remarkable that **Tebble** in *British Bivalve Seashells* (1976) only mentions *S. scopula*. Fig.52 (p.158) and Plate 12, fig.d however correspond to *S. multistriatus*. The text is confusing and refers to features that only belong to one species or the other. **Nora F. McMillan** made similar mistakes in *British Shells* (1968).

G. Poppe & Y. Goto (1993) – as recent authors – use the name *S. scopula* (Turton, 1822) in ‘European Shells, vol.II’ with an adequate figure. The variability of the species is shown through *S. scopula* forma *multistriatus* (Scacchi, 1834) (!) for ‘small shells which are less globose’. There are no illustrations to prove these vague arguments.

The authors were probably inspired by **F. Nordsieck** in ‘Die europäischen Meeresmuscheln (Bivalvia)’ (1969) who mentioned the name ‘*S. scopula multistriatus* Scacchi, 1836’ (sic) accompanied by a drawing copied from the original by Scacchi in 1835. This cannot be a subspecies of *S. scopula* as in the Adriatic Sea alone, already four species of the family Solecurtidae co-exist!

Moreover, **G. Poppe & Y. Goto** also mention *S. scopula forma alba* (Blainville, 1825) without reference to this species in neither the bibliography nor by an illustration to support the text: ‘Albino shells which are taller in shape and with more numerous striae in the sculpture. Regarded by some authors as a distinct species’. **F. Nordsieck** does regard *S. albus* as a distinct species (!), which is not substantiated by an illustration.

We are of the opinion that all shells of *S. multistriatus* and *S. scopula* are white (under an olive-green periostracum) and that the nomenclatural enigma ‘*S. multistriatus* – *S. scopula*’ cannot be solved neither by the introduction of a [subspecific](#) nor a [infrasubspecific taxon](#).

5. *Azorinus chamasolen* (da Costa, 1778) and *Solecurtus strigilatus* (Linnaeus, 1758)

Both species can easily be distinguished from the two other mentioned species. Therefore we refer to the illustrations in this publication for a fast and easy identification.

6. Glossary

taxon (plural: taxa): a taxonomic unit, whether named or not: i.e. a population, or group of populations of organisms which are usually related and which have characteristics in common which differentiate the unit from other such units, e.g. a species, a family, ...;

subspecific taxon: the species-group rank below species; the lowest rank at which the ‘International Code of Zoological Nomenclature’ regulates names;

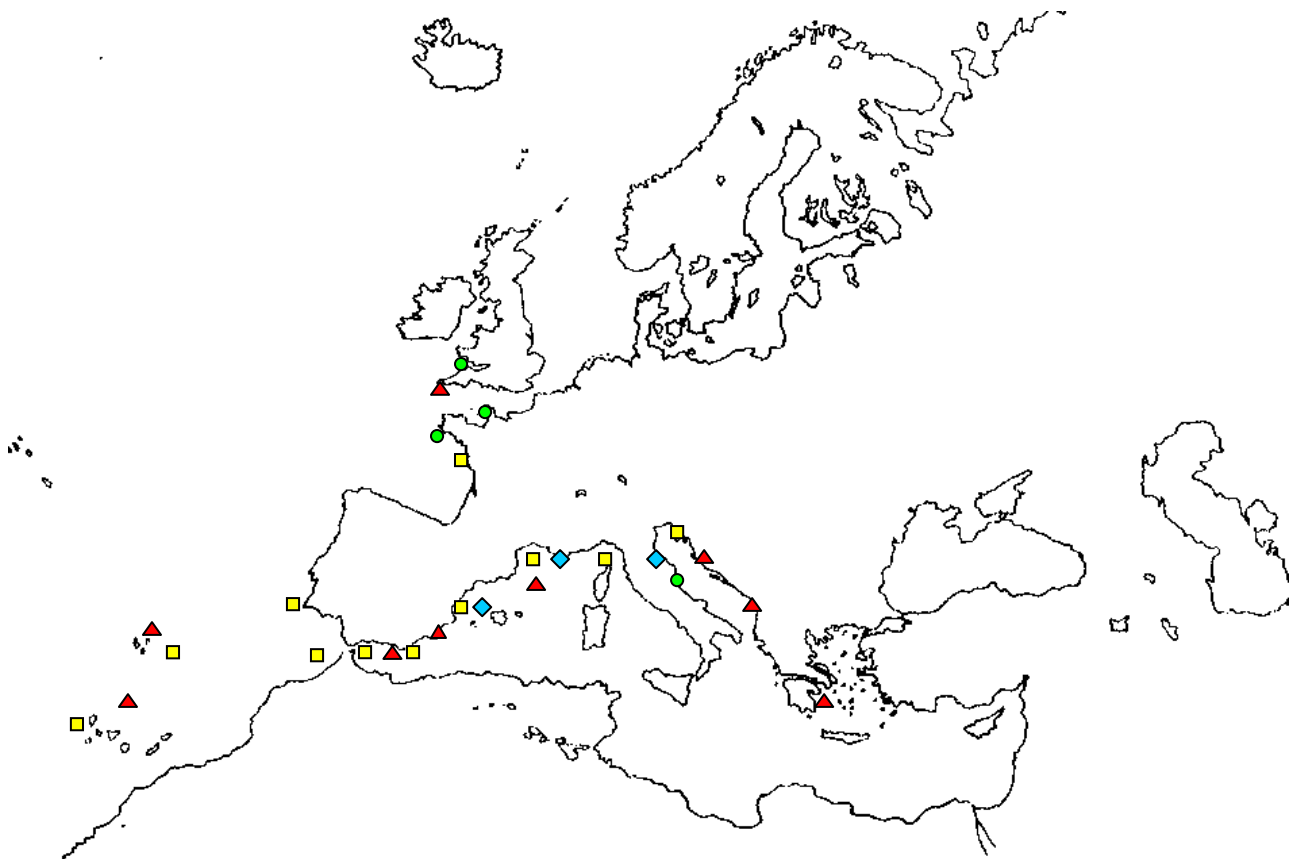
infrasubspecific taxon: a taxon at lower rank than the level of subspecies; it refers to individuals of a species or subspecies differing from other individuals within the taxon as a result of variability within the population (e.g. larval and adult forms, male and female forms, ecological and seasonal forms, freaks); the names of such taxa are not regulated by the ICZN (form, variety, ...);

umbo: top of a valve

7. References

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8. Distribution



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

Solecurtus scopula (■) and *Solecurtus strigilatus* (◆)

9. Summary

The four species of the family Solecurtidae which occur in European waters are the following:

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

A smaller species (20 to 65 mm) with a wide distribution: from the south of Norway to the north of Angola (West Africa) - including Madeira and the Canary Islands - and in the Mediterranean Sea. The species is also mentioned from the southern and western coasts of Great Britain (amongst other localities: Lands End, SW England – coll. R. Vanwalleghem).

Synonyms: *Solen emarginatus* Spengler, 1792; *Solen antiquatus* Pulteney, 1799

- ***Solecurtus scopula* (Turton, 1822)**

This species attains 40 to 70mm and also has a wide distribution, from the United Kingdom to Mauritania (West Africa), the Mediterranean Sea and the Canary Islands. It is also mentioned from the southern and western coasts of England to the Orkneys.

Principal synonyms: *Solen candidus* Renier, 1804; *Solecurtus albus* de Blainville, 1827; *Solen gallicus* Chenu, 1843; *Solen albicans* Nardo, 1847 and *Adasius loscombeus* Leach, 1852.

- ***Solecurtus strigilatus* (Linnaeus, 1758)**

This is the largest of the Solecurtidae reaching a length of 100mm. It lives in the Mediterranean Sea, but Nobre also mentions the species in the south of Portugal.

Synonym: *S. strigillatus* Auct.

- ***Solecurtus multistriatus* (Scacchi, 1835)**

This species is found from the Irish Sea (or even more northerly?) over the Atlantic Ocean up to the Mediterranean Sea.

In literature this species is often confused with *Solecurtus scopula* (Turton, 1822), but the following features can easily distinguish both:

- the **umbo** of *S. multistriatus* is situated more in the middle of the shell (equilateral) compared to *S. scopula*;
- the gap between both valves in *S. multistriatus* is smaller and the margins of the extremities are more rounded;
- the shell of *S. multistriatus* is smaller (45-49mm) than the one of *S. scopula*, (45-69mm) but it is heavier.

10. Acknowledgements

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Azorinus chamasolen (da Costa, 1778)



Greece
17,0/38,5 mm
collection F. Nolf

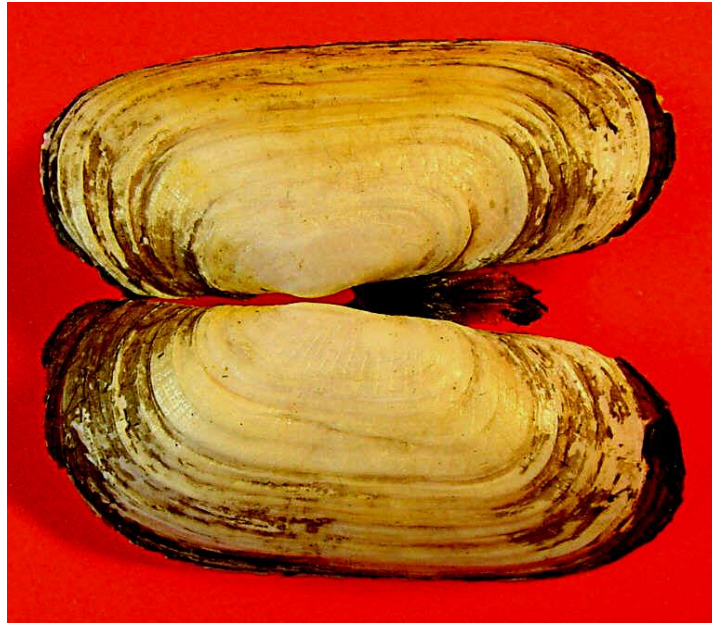


Punzo, Italy
21,5/44,5 mm
collection F. Nolf



Santa Cruz de La Palma, La Palma, Canary Islands
above: 16,5/35,0 mm; below: 19,0/41,0 mm
collection F. Nolf

Solecurtus scopula (Turton, 1822)



off Plouharnel, Morbihan, French Brittany, West France
33,5/69,0 mm
collection F. Nolf



Solecurtus scopula (Turton, 1822)



off Plouharnel, Morbihan, French Brittany, West France
33.5/69.0 mm – collection F. Nolf



Malaga, Spain – trawled by fisherman
28.0/63.5 mm – collection F. Nolf

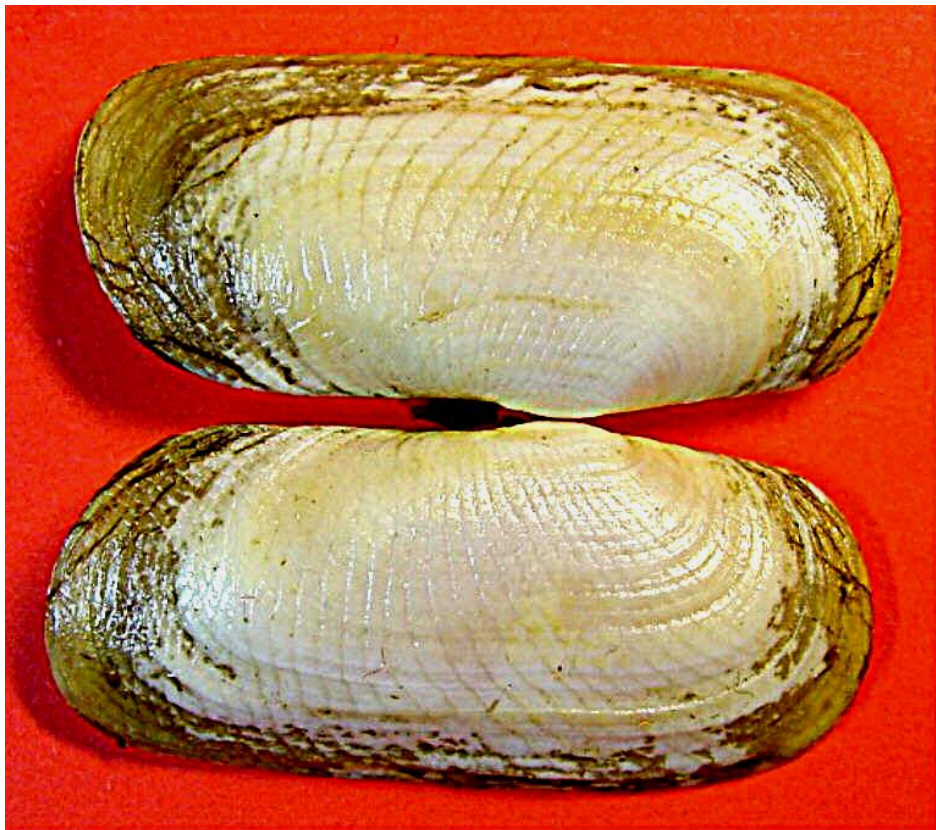


Lagos, Portugal – trawled by fisherman
27.5/60.0 mm – collection F. Nolf

Solecurtus scopula (Turton, 1822)



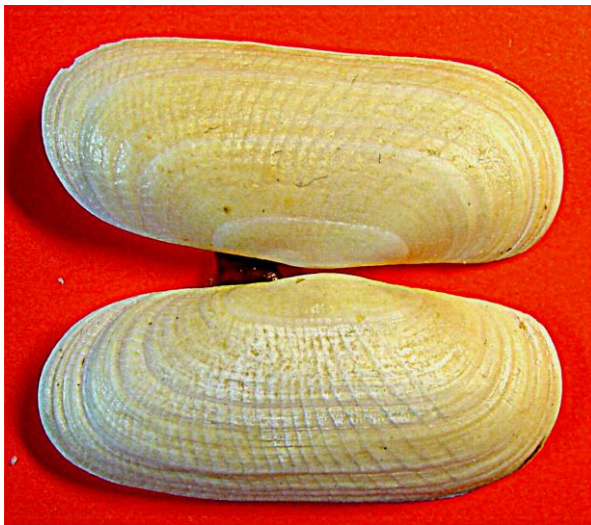
Santa Cruz de la Palma, La Palma, Canary Islands
21,0/45,0 mm
collection F. Nolf



Solecurtus multistriatus (Scacchi, 1835)



Cardigan Bay, Irish Sea, United Kingdom – taken by Ostend fisherman
23,5/49,5 mm
collection F. Nolf



Pointe de Moustierlin, off Bénodet, French Brittany, West France
21,5/49,0 mm
collection F. Nolf

Solecurtus multistriatus (Scacchi, 1835)



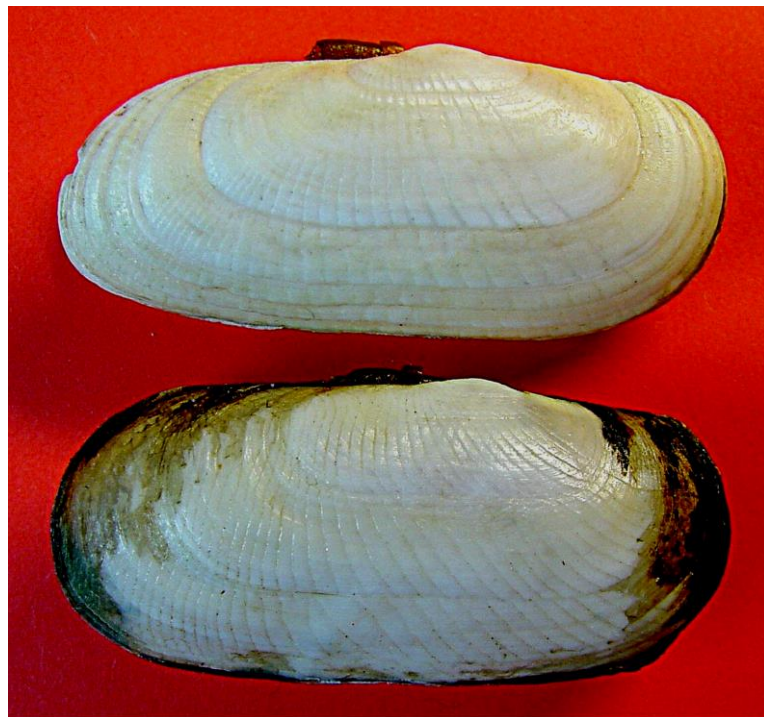
Scilly Isles, Channel Islands, United Kingdom
21,0/47,0 mm
collection J. Verstraeten



Comparison between
S. multistriatus and *S. scopula*



above: *S. multistriatus*, Cardigan Bay, Irish Sea, United Kingdom
20,0/45,0 mm – collection F. Nolf
below: *S. scopula*, Santa Cruz de la Palma, La Palma, Canary Islands
21,0/45,0 mm – collection F. Nolf



Solecurtus multistriatus (Scacchi, 1835)



Chioggia, Italy – June 1999 –
dredged by fisherman in 23 m
largest specimen: 20,5/43,0 mm
collection F. Nolf

Comparison between *S. scopula* and *S. multistriatus*
at the same locality



Chioggia, Italy

**Comparison between
Azorinus chamasolen and *Solecurtus multistriatus***



above: *Azorinus chamasolen*, Greece
17,0/38,5 mm - collection F. Nolf
below: *Solecurtus multistriatus*, Cardigan Bay, Irish Sea, United Kingdom
20,0/45,0 mm – collection F. Nolf

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



trawled off Lands End, SW England
collection R. Vanwalleghem



dredged off Funchal, Madeira
ex. coll. F. Swinnen, coll. F. Nolf

Solecurtus strigilatus (Linnaeus, 1758)



Vinaros, off Benicarlo, Spain
36,0/84,0 mm
collection F. Nolf



Grado, Italy – trawled by fisherman
40,0/88,0 mm
collection F. Nolf

Specific differences between *S. multistriatus* and *S. scopula*

