

**A critical examination of *Caecum clarkii*
Carpenter, 1858**

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The synonymy of *Caecum clarkii* Carpenter, 1858 (Gastropoda Prosobranchia: Caecidae) is most bewildering. In 1858 Carpenter described two species from the Canary Islands, viz. *C. clarkii* and *C. pollicare*. These species were distinguished by the fact that *C. clarkii* has a completely smooth outer surface while in *C. pollicare* the outer surface shows (p. 433) "irregular longitudinal corrugations resembling thumb-marks". Carpenter (p. 433) explicitly states "in shape agreeing with *clarkii*", so the "sculpture" is the only difference.

Now it is known that many Caecidae have a very thin periostracum which is not easily discerned even under the microscope. Thus it might well be that the "sculpture" described by Carpenter is nothing else than the surface structure of the thin periostracum. Moore (1974, in litt.), after having examined some specimens from Gran Canaria (Van Aartsen collection) even is inclined to think that *C. clarkii*, *C. pollicare* and *C. vitreum* Carpenter, 1858, all are in fact the same species. This conclusion however, was not based on actual specimens of *C. vitreum* which in our opinion is clearly different.

An examination of Carpenter's type specimens in the British Museum (Natural History) shows both above species to be identical. We were not able to observe clearly the "longitudinal corrugations" in the type specimens of *C. pollicare* but both nominal species agreed in every other respect.

In studying European Caecidae there were a number of specimens from different Mediterranean localities and from the Atlantic coasts of Portugal (Lagos) and Northern Spain (Laredo and Ria de Arosa) which seem to differ from other well known species, viz. *C. trachea* (Montagu, 1803), *C. glabrum* (Montagu, 1803), *C. subannulatum* De Folin, 1870, and *C. auriculatum* De Folin, 1868. These specimens are all quite smooth with no sculpture, but some have a light to dark brown periostracum. The septum has a characteristic shape somewhat reminiscent of that of *C. trachea*.

Although these specimens, especially those from Lagos (Portugal), are much better preserved than those of *C. clarkii* from Gran Canaria, there is no doubt that both species are closely related and we are inclined to think that they are synonymous. This being especially so in view of the fact that within one species there is sometimes considerable variation and Carpenter (1858: 432) in his original description of *C. clarkii* (as well as in that of *C. vitreum*) specifically states that "the plugs (septa) in both species are more variable than usual". A comparison with Carpenter's type specimens in the British Museum shows that our specimens, except for a slight variation in the shape of the septum, the diameter of the tube, and the total length of the specimens, are identical with *C. clarkii* (= *C. pollicare*).

In the mean time one of us (v.A.) had the opportunity to examine the type specimens of the Caecidae in the Folin collection in the Muséum National d'Histoire Naturelle, Paris. From this examination a number of important conclusions could be drawn. In the first place it turned out that the holotype and only known specimen of *C. sardinianum* De Folin, 1870, is identical with *C. clarkii*. Admittedly the diameter of the tube is somewhat greater than usual and the septum somewhat worn. At the same time it is evident that the suggestion by Tryon as cited by Monterosato (1884) and mentioned by Kisch (1959) that *C. sardinianum* could be identical with *C. vitreum* is not borne out by the facts. *C. vitreum* and *C. clarkii* (= *C. sardinianum*) are two different species which can be separated with ease, even in juvenile stages.

The marquis de Folin described two other species which are of interest in this connection. One is *C. orientale* De Folin, 1868, which is described from Mersina. Contrary to what is written by Kisch (1959) there are only two specimens present in the Paris museum and not twenty-two. One of the two specimens is a young *C. trachea*, possibly of the Mediterranean variety *obsoletum* Carpenter, 1858, but this cannot be determined with certainty; the other specimen turned out to be *C. clarkii*. This time it is a specimen of normal proportions as far as tube length and diameter are concerned. During mounting of the

specimen (by De Folin?) it was apparently broken in half but it is still clearly identifiable. The figures of both *C. sardinianum* and *C. orientale* as given by De Folin are not very good. Moreover, the figure of *C. orientale* is most probably made from the juvenile specimen of *C. trachea*.

The other species is *C. syriacum* De Folin, 1869. The holotype and only known specimen in our opinion are rather slender specimens of *C. auriculatum*. In this species the form of the septum strongly depends upon age.

The last species to be mentioned here is *C. semitrachea* (Brusina MS) Monterosato, 1884. Although there does not exist a really proper description of this species, the few remarks given by Monterosato (1884) made us conclude that most probably Monterosato's species is identical with *C. clarkii*. This is supported with a specimen labelled "No. 188158: *C. semitrachea* Brus." which was found in the Jeffreys collection in the National Museum of Natural History (Smithsonian Institution), Washington, D.C., U.S.A. This specimen was apparently obtained from Brusina himself and the box in which the specimen is present still contained a label with the text

"Prirodoslovni odsjek
nar. zem. muzeja u Zagrebu"¹

The specimen proved to belong to *C. clarkii*.

The only other sample we were able to study was one consisting of four specimens originating from the Coen collection (No. 4465) which we received on loan thanks to the courtesy of Mr. H.K. Mienis of the Hebrew University, Jerusalem (Israel), where the Coen collection is located. These specimens are somewhat worn and bleached specimens of *C. trachea* var. *obsoletum*, the annulate sculpture being clearly visible near the septum.

The Washington collection mentioned above also contained two other samples of interest. Firstly a sample without number from the Chaster collection, originating from 10-14 fathoms off Delos (Greece) s.n. *C. orientale* Folin. The specimens correspond to *C. clarkii*.

Secondly sample no. 188162 from the Jeffreys collection is of interest; it originates from Palermo (Sicily) as indicated on the label together with the name "Caecum (sp.n. Watsoni) Mtrs." The two specimens are very fine examples of *C. clarkii* and compare favourably with our specimens from Lagos (Portugal) and Getares (Bay of Algeciras, Spain).

In conclusion we have established the following synonymy for *Caecum clarkii* Carpenter, 1858: 432:

¹ Serbo-Croatian: "Natural History Department/National Museum in Zagreb".

- = *C. pollicare* Carpenter, 1858: 432, 433;
- = *C. orientale* De Folin, 1868: 107;
- = *C. sardinianum* De Folin, 1870: 231;
- = *C. semitrachea* (Brusina MS) Monterosato, 1884: 24;
- = *C. Watsoni* Monterosato MS.

Although the species is known from Sicily (Messina) s.n. *C. orientale* and both *C. sardinianum* and *C. semitrachea* are mentioned by Monterosato (1884) from several localities on Sicily, it is not mentioned by Priolo (1956). Also, Nordsieck (1968: 66, 67) does not mention any of the species we consider to be *C. clarkii* nor are any of these names recorded in Parenzan (1970: 101, 102).

As the species *C. clarkii* has never been figured and existing figures of *C. orientale* and *C. sardinianum* are not very good and moreover are shown in a very rare work, we give a new figure of one of the finest specimens from Lagos, Portugal (fig. 1).

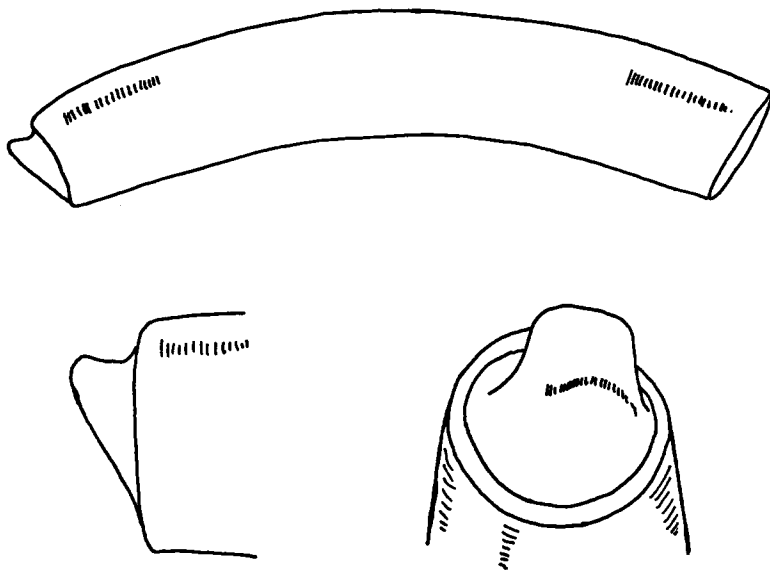


Fig. 1. *Caecum clarkii* Carpenter, 1858, specimen from Lagos (Portugal) in collection Van Aartsen (3874f). Top: shell, 41 X, bottom (left): side view of septum at higher enlargement (note concavity at dorsal surface), bottom (right): front view of septum (note slightly excentric situation of septum in respect to plane of curvature of the shell).

C. clarkii Carpenter, 1858, with the synonymy given above has a rather extensive distribution and is at present known from the following localities (identification verified by us):

Punta Delgado (Azores), A 10121; Teneriffe, 50 fms., dredged by McAndrew, BMNH (as *C. clarkii* and *C. pollicare*); Gran Canaria, Las Palmas (Canteras), A 4905; Lagos (Portugal) leg. A. Zorn, A 3874, FW 6306; Ria de Arosa (N.W. Spain), leg. G.C. Cadée, RMNH; Laredo (N.W. Spain), A 3970; Getares, bay of Algeciras (S. Spain), A 9870; Calpe (Spain), A 2100B; Sausset les Pins (France), A 1774A; Ibiza (Playa es Cavallet), A 4739; Formentera (Es Pujols), A 4811; Carlo forte (Sardinia), F (as *C. sardinianum*); Mondello (Sicily), leg. A. Verduin, A 4162; Palermo (Sicily), leg. Monterosato, J 188162 (as *C. Watsoni* Mtrs. MS); Messina (Sicily), F (as *C. orientale*); Adriatic, J 188158 (as *C. semitrachea* Brus.); Ol Dvye Sestrice (Adriatic), FW 6311; Poreç (Jugoslavia), A 1399A; Delos (Greece), J (Chaster Coll.) (as *C. orientale*); Salambo (Tunisia), A 9128; Sidi Daoud (Tunisia), A 9315; Nabeul (Tunisia), A 9562; El Djemila (La Madrague) (Algeria), A 10525.

Abbreviations:

BMNH = British Museum (Natural History), London;

F = Type-collection of L. De Folin, Muséum National d'Histoire Naturelle, Paris;

J = Jeffreys collection, National Museum of Natural History (Smithsonian Institution), Washington, D.C., U.S.A.;

RMNH = Rijksmuseum van Natuurlijke Historie, Leiden;

A = collection J.J. van Aartsen, Dieren, The Netherlands;

FW = collection Mrs. M.C. Fehr-de Wal, The Hague, The Netherlands.

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REFERENCES

- CARPENTER, P.P., 1858. First steps towards a monograph of the Caecidae, a family of rostriferous Gastropoda. — Proc. zool. soc. Lond. 1858: 413-444.

- FOLIN, L. DE, 1868. Smyrne, Rhodes et Mersina. — Les fonds de la mer 1: 103-108. Paris.
- , 1869. La côte de Syrie (Alexandrette, Latakié, Tripoli, Beyrouth, Jaffa). — Les fonds de la mer 1: 108-115. Paris.
- , 1870. Rade de Carlo-forte. — Les fonds de la mer 1: 229-232. Paris.
- KISCH, B.S., 1959. La collection de Caecidae du Marquis de Folin au Muséum National d'Histoire Naturelle. — J. Conchyl., Paris 99: 15-42.
- MONTEROSATO, T.A.DI, 1884. Conchiglie littorali Mediterranee. — Naturalista sicil. 4: 21-25.
- NORDSIECK, F. 1968. Die europäischen Meeres-Gehäuseschnecken (Prosobranchia). Vom Eismeer bis Kapverden und Mittelmeer: I-VIII, 1-273. Stuttgart.
- PARENZAN, P., 1970. Carta d'identità delle conchiglie del Mediterraneo. Vol. 1 Gasteropodi: 1-283. Taranto.
- PRIOLO, O., 1956. Nuova revisione delle conchiglie marine di Sicilia. — Memoria IX. — Atti Accad. gioenia (7) 10: 259-294.