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BORING SPONGES (PORIFERA, CLIONIDAE) COLLECTED DURING THE "TYDEMAN" CANARY ISLANDS EXPEDITION CANCAP-II, 1977

CANCAP-project. Contributions to the zoology, botany and paleontology of the Canarian-Cape Verdean region of the North Atlantic Ocean, no. 2

by

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Introduction and material

The boring sponges of the Canary Islands have never been studied in any detail, but the boring fauna of this archipelago cannot be expected to be very rich. All islands are volcanic and calcareous rocks are not common. Consequently, in most areas large shells and rhodophyte incrustations are the only substrata available for boring sponges. Moreover, the islands are truly oceanic. Eggs or larvae (according to Trégouboff, 1957, clionids are oviparous) have to cross a distance of at least 90 km to reach the Canary Islands from the African coast, where calcareous substrata are abundant. Because of the isolated position of the islands endemism may be expected.

All material was obtained during the second expedition of the CANCAP-project (biological investigations of the Canarian-Capeverdian area) in August and September 1977 on board Hr. Ms. "Tydeman". Most specimens were collected by Dr. G. J. Boekschoten and Miss G. Klein Nulend during scuba-diving operations. The other specimens were recovered by dredging and grab sampling.

Immediately after collecting the colour of the papillae was noted. Afterwards, the specimens were dried and in the laboratory spicules were prepared for optical microscopy. The samples are stored in the collection of the Leiden museum.

List of stations. —

Sta. 2-oD7: S coast of Hierro, 27°39'N 18°W, scuba-diving, depth 10 to 15 m, rocky bottom, 3 and 10 September 1977.

Sta. 2-oD8: SW coast of Hierro, 27°42'N 18°8'W, scuba-diving, depth 5 to 25 m, rocky bottom with some sand, 5 to 9 September 1977.
Sta. 2-035: S of Fuerteventure, 28°10'N 14°2'W, triangular dredge, depth 45 to 80 m, sandy bottom, 26 August 1977.
Sta. 2-044: SE of Fuerteventura, 28°11'N 14°W, triangular dredge, depth 49 m, calcareous and other algae, 27 August 1977.
Sta. 2-048: SE of Fuerteventura, 28°14'N 13°51'W, Van Veen grab, depth 100 m, sandy bottom, 27 August 1977.
Sta. 2-049: SE of Fuerteventura, 28°12'N 13°53'W, Agassiz trawl, depth 70 m, sand, shells, red algae, 27 August 1977.

SYSTEMATICS

Cliona cf. **celata** Grant, 1826

Cliona celata; Rützler, 1965: 21-22. — De Groot, 1977: 169-170.
Cliona quadrata; Burton, 1956: 122.

According to the literature *Cliona celata* is the most common species of the genus, occurring practically everywhere. However, its taxonomic status is uncertain because of the lack of type material. The specimens from the Canary Islands tentatively mentioned under this name carry only tylostyles. Their length does not differ much from the tylostyle lengths reported in the literature. The measurements of the tylostyles mentioned in the table below are based on 40 spiculae per specimen.

The colour of the tissue is a systematic character of somewhat doubtful value. It was observed that boring sponges with olive-green papillae often had sulphur-yellow tissue inside the substratum.

The following specimens, all from mollusc shells, were tentatively assigned to *Cliona celata*:

station	substratum	colour of papillae	mean length of tylostyles
2-oD7	*Purpura* sp.	grey	223 μm
2-oD8	*Spondylus* sp.	olive-green	349 μm
2-oD8	*Spondylus* sp.	olive-green	165 μm
2-oD8	*Spondylus* sp.	olive-green	258 μm
2-oD8	*Ostrea* sp.	grey	250 μm
2-oD8	*Ostrea* sp.	beige	250 μm
2-oD8	*Ostrea* sp.	olive-green	263 μm
2-035	*Glycymeris* sp.	olive-green	215 μm
2-049	*Crassostrea* sp.	sulphur-yellow	220 μm
2-049	*Glycymeris* sp.	yellow-beige	204 μm

Cliona schmidti (Ridley, 1881)

Cliona schmidti; Volz, 1939: 16-18. — Pang, 1973: 8-13.
Vioa schmidti; Ridley, 1881: 130.
Vioa johnstonii; Schmidt, 1870: 5, 88.

The specimens referred to this species carry both tylostyles and spirasters. The number of measured spiculae per specimen is placed in brackets in the table below. Papillae are vermilion coloured usually.

The species seems to occur on both sides of the Atlantic Ocean. It was originally described by Schmidt (1870) as a variety of *Vioa johnstonii* from the coast of Yugoslavia. The present author found it on Curaçao in the Caribbean at depths from 25 to 70 m. Volz (1939) reported the species from the Mediterranean.

List of specimens (with measurements in μm) and number of measured spiculae (in brackets):

station	substratum	colour of papillae	mean length tylostyles	mean length spirasters	maximum length spirasters
2-035	*Glycymeris* sp.	vermilion	220 (40)	40 (15)	51
2-035	*Glycymeris* sp.	vermilion	214 (40)	34 (20)	55

Cliona lobata Hancock, 1849

Cliona lobata; Topsent, 1918: 558-559.

As far as we know now this species differs from the preceding in colour only. Its papillae are more or less brownish instead of vermilion. It was originally described from the Channel Islands (Hancock, 1849). It has also been reported from Sao Thomé, Gulf of Guinea (Topsent, 1918), several localities along the Danish coast (Tendal, 1973), and along the Atlantic coast of the United States (Old, 1941).

List of specimens (with measurements in μm and number of measured spiculae in brackets):

station	substratum	colour of papillae	mean length tylostyles	mean length spirasters	maximum length spirasters
2-oD8	*Glycymeris* sp.	olive-green	161 (40)	50 (15)	90
2-049	*Glycymeris* sp.	beige	215 (40)	39 (15)	50

Cliona cf. **vastifica** Hancock, 1849

Cliona vastifica; Topsent, 1918: 559. — De Groot, 1977: 172-173

Specimens assigned to this species have tylostyles, amphioxi as well as spirasters. The dimensions of the spicules are never as large as those in my fairly large material of the same species from the Adriatic (de Groot, 1977). The mean length of the tylostyles is 263 μm there, while it is only 212 μm in the Canary Islands material. The mean length of the amphioxi is 107 μm as against 73 μm; the mean length of the spirasters is 18 μm as against 10.4 μm.

Cliona vastifica is usually described as a reddish-orange animal, but the present material also contains olive-green specimens.

Topsent (1918) already reported similar boring sponges from the Canary Islands under this name and I follow this example.

Cliona vastifica was originally described from England ("shell of an oyster from Prestonpans?"). Tendal (1973) found it at various localities on the Danish coast and Topsent (1900) reported it from the French coast. Old (1941) recorded the species also from the Atlantic coast of the United States.

List of specimens (with measurements in μm and number of measured spiculae in brackets):

station	substratum	colour of papillae	mean length tylostyles	mean length amphioxi	mean length spirasters
2-oD8	*Ostrea* sp.	orange	250 (20)	79 (30)	15 (30)
2-oD8	*Ostrea* sp.	orange	280 (6)	93 (30)	10 (30)
2-035	*Glycymeris* sp.	pink	175 (20)	76 (30)	10 (30)
2-044	*Glycymeris* sp.	orange	232 (10)	73 (30)	10 (30)
2-048	*Crassostrea* sp.	olive-green	178 (20)	66 (30)	10 (30)
2-048	*Glycymeris* sp.	pink	198 (20)	70 (30)	10 (20)
2-049	*Ostrea* sp.	orange	260 (20)	64 (30)	11 (30)
2-049	*Glycymeris* sp.	orange	205 (8)	65 (30)	10 (30)
2-049	*Glycymeris* sp.	beige	173 (20)	68 (30)	10 (30)
2-049	*Glycymeris* sp.	pink	182 (20)	70 (30)	10 (30)
2-049	*Glycymeris* sp.	olive-green	202 (20)	79 (30)	10 (30)

Cliona spec.

Two specimens could not be identified to the species level, but both are related to *Cliona vastifica*. A specimen from sta. 2-049, boring in *Glycymeris* and having beige papillae, has spirasters (mean length 15 μm) that are much more angulate than in *C. vastifica*, much like those of *Cliona mazatlanensis* Hancock, 1849. The other specimen, found boring in *Ostrea* at sta. 2-oD8, has orange papillae and two types of amphioxi (mean length 93 μm). It could be related to *Cliona carpenteri* Hancock (1867: 241), described from the Pacific coast of Mexico.

Alectona spec.

A gray sponge was found incrustating *Purpura* spec. at locality 2-oD7. It has spiculae as described from *Alectona jamaicensis* Pang (1973: 50-54). The mean length of the diactinal spicules is 190 μm. The mean length of the amphiasters is 20 μm. It could not be ascertained if it was boring.

A species known to occur in the general area is *Alectona millari* Carter, 1879, which was reported from the Azores by Topsent (1900). This species is also known from the Atlantic coast of Europe, the Mediterranean and the northern part of the Red Sea.

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