MINISTRY OF COMMERCE AND INDUSTRY, EGYPT.

IX.—Sponges

BY

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This collection, consisting of 150 specimens, is of particular interest since it is the first of any size to be taken from the waters of the Eastern Mediterranean. In spite of the fact that the Mediterranean is the home of the sponge fisheries less is known about its sponge-fauna than those of several much more remote parts of the earth. Moreover, our knowledge of the sponges of this region is drawn almost exclusively from the Adriatic, the Bay of Naples and the Gulf of Lyons.

Distribution

The results of the examination of the present collection may be readily summarised. The total number of species represented is 45, and of these only 3 have been recorded hitherto from waters east of the Adriatic (in each case from the Black Sea). There are 8 species recorded for the first time from the Mediterranean and of these 4 have been previously known from west coast of Europe or the North Atlantic, 3 from the Red Sea or Indian Ocean and 1 is new. Of the remaining 37, no more than 14 have previously been recorded from both the northern and the southern coasts of the Mediterranean, but whereas the sponges of the northern coasts are known from the works of numerous writers, such as *Topsent, Vosmaer, Schulze, Schmidt* and many others, those from the southern coasts are known only from a few records by *Topsent* and *Schmidt*. It is highly probable, therefore, that there is very little difference between the sponge-faunas of the northern and southern coasts, and, so far as the results of the present investigations show, very little difference between the sponge-faunas of the Eastern and Western Mediterranean. What the differences may be it is impossible to say at the moment, considerably more collecting being necessary before anything in the nature of a comprehensive survey of the Mediterranean itself can be attempted. Further than this, the only point of importance brought out by the present investigation is that there are already definite signs of an immigration of sponges from the Red Sea and Indian Ocean.

The following is an analysis of the species described in this report, with their distribution :—

(1) Species hitherto recorded from the northern coast of the Mediterranean :

Sycon ciliatum	*Leuconia aspera*	*Geodia conchilega*
Chondrilla nucula	*Haliclona implexa*	*Haliclona fibulata*
Adocia grossa	*Adocia semitubulosa*	*Mycale massa*
Mycale retifera	*Myxilla prouhoi*	*Clathria gradalis*
Thalysias jolicoeuri	*Crambe crambe*	*Agelas oroides*
Ciocalypta penicillus	*Bubaris vermiculata*	*Rhaphidostyla pelligera*
Rhaphidostyla marsillii	*Spongia officinalis*	*Cacospongia scalaris*
Cacospongia cavernosa	*Hircinia oros*	

(2) Species recorded from both northern and southern coasts of the Mediterranean :

Geodia mülleri	*Chondrosia reniformis*	*Myxilla rosacea*
Adocia cinerea	*Petrosia dura*	*Tedania nigrescens*
Cliona viridis	*Spirastrella cuncatrix*	*Tethya aurantium*
Aaptos aaptos	*Spongia equina*	*Cacospongia mollior*
Hircinia variabilis	*Dysidea fragilis*	

(3) Species hitherto recorded from the west coast of Europe or from the North Atlantic :

Leuconia nivea	*Oceanapia tuber*	*Eumastia sitiens*
Rhaphidostyla kitchingi		

(4) Species hitherto recorded from the Red Sea or Indian Ocean

Cinachyra australienis	*Haliclona viridis*	*Didiscus placospongioides*

The results of the horizontal distribution show that the catches richest in species were without exception made in the middle section of the area examined, namely the coast lying approximately between the Dekhela peninsula and the eastern end of the Eastern Harbour of Alexandria. Here were the 6 most productive stations at which at least 5 species were represented in a single haul (maximum : Station 61 : 9 sp., Station 8 : 7 sp.). A comparison with the stations, at which no sponges were found, shows that the sponges growing with the *Halimeda* favour a more or less stony ground (*cf.* Preliminary Report, Not. & Mem. No. 8, 1935) ; from such, a total of 40 species was found, in places where *Caulerpa* occurred alone or mixed with other vegetation, a total of 35 species, among *Posidonia*, alone or mixed,

only 15 species. *Tethya aurantium* was relatively the most commonly collected, namely at 9 stations which, it is true, all lay in the two harbours of Alexandria (fig. 13). In those places where *Caulerpa* only was found only 16 species of sponges were found ; of these *Myxilla prouhoi* (Topsent) and *Tedania nigrescens* (Schmidt) were found actually growing on the *Caulerpa*. *Adocia semitubulosa* (Lieberkühn) appears to favour especially the beds of *Posidonia*. *Dysidea fragilis* (Montagu) was found on a rhizome of *Posidonia* from Station 128. Finally, the *Amphioxus*-sands were relatively rich in species, namely with 15 species, especially where, as at Station 143, the coarse sand is mixed with stones. At this Station representatives of 5 species were obtained.

The three Calcarea (fig. 1) (of which one is of Atlantic origin) were found only in the region of the two harbours of Alexandria, as also *Chondrilla nucula* Schmidt (fig. 2). The edible sponge, *Chondrosia reniformis* Nardo (fig. 3) and *Tethya aurantium* (Pallas) (fig. 13), already referred to, as well as *Cinachyra australiensis* (Carter), ants immigrant from the Indian Ocean, go only a little further. *Eumastia sitiens* Schmidt (fig. 11), from the Atlantic, and also *Spongia equina* Schmidt (fig. 14) and *Hircinia oros* Schmidt (fig. 16) were found only in the Bay of Dekhela ; while *Adocia semitubulosa* (Lieberkühn) (fig. 6) appears to be confined to the western part of the bay. The two Indian Ocean species, *Haliclona viridis* Keller (fig. 4) and *Didiscus placospongioides* Dendy (fig. 14) are only to be found on the firm *Halimeda* ground to the north of Silsila. *Tedania nigrescens* (Schmidt) (fig. 9), *Clathria gradalis* Topsent (fig. 9), *Ciocalypta penicillus* Bowerbank (fig. 10), *Rhaphidostyla pelligera* (Schmidt) (fig. 11) and *Cacospongia mollior* Schmidt (fig. 15) were found only in the extreme western parts of the bay, which may possibly be correlated with the greater salinity. The species *Adocia cinerea* (Grant) (fig. 5), *Oceanapia tuber* Lundbeck (fig. 7), *Spongia officinalis* L. (fig. 14) penetrate up to the Bay of Aboukir, that is to say on the coarse, mainly stony, *Amphioxus* ground. *Crambe crambe* (Schmidt) and *Bubaris vermiculata* (Bowerbank) (fig. 1) are only found here.

With regard to the vertical distribution it may be remarked that the Calcarea go down to about 5 fathoms only and of the Tetraxonida and Keratosa there are 10 species which reach about 50 fathoms, that is at Stations 61 and 117 where alone *Halimeda* also reached its greatest depth. From greater depths (St. 26 : 126 fathoms, 27 : St. 70 fathoms, St. 54 : 55 fathoms, St. 63 : 74–85 fathoms, St. 64 : 110 fathoms) no sponges were taken.

In conclusion it may be remarked that some sponges are remarkably small specimens, for example *Geodia müller*i Fleming (*see* Preliminary Report p. 14) and *Didiscus placospongioides* Dendy.

DESCRIPTIONS OF SPECIES

ORDER CALCAREA

FAMILY SYCETTIDAE

Genus Sycon Risso

1.—*Sycon ciliatum* (FABRICIUS).

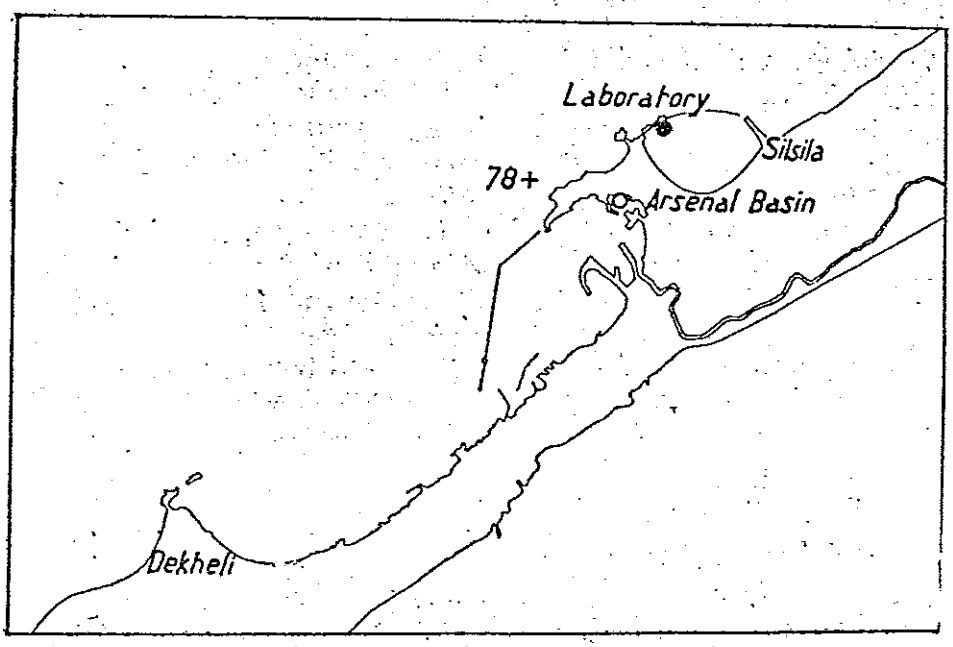

FIG. 1.

O *Sycon ciliatum* (Fabricius).
+ *Leuconia nivea* (Grant).
● *Leuconia aspera* (Schmidt).

Occurrence.—Western Harbour (Arsenal Basin), growing between Serpulid tubes, September 18.

Distribution.—Arctic and North Atlantic Oceans; North and West coasts of Europe; Mediterranean (Adriatic). (It is possible that the species has an even wider distribution than this, but that remains to be corroborated).

FAMILY GRANTIIDAE

Genus Leuconia Grant

2.—*Leuconia nivea* (GRANT).

(Fig. 1).

Occurrence.—Stn. 78, November 5, 5–6 fathoms

Distribution.—North and West coasts of Europe.

3.—*Leuconia aspera* (SCHMIDT).

(Fig. 1).

Occurrence.—Eastern Harbour, August 30, September 10 and November 16.

Distribution.—Mediterranean (Adriatic, Naples and Messina).

ORDER TETRAXONIDA

Sub-order Astrosclerophora

FAMILY GEODIIDAE

Genus Geodia Lamarck

4.—*Geodia müilleri* (FLEMING).

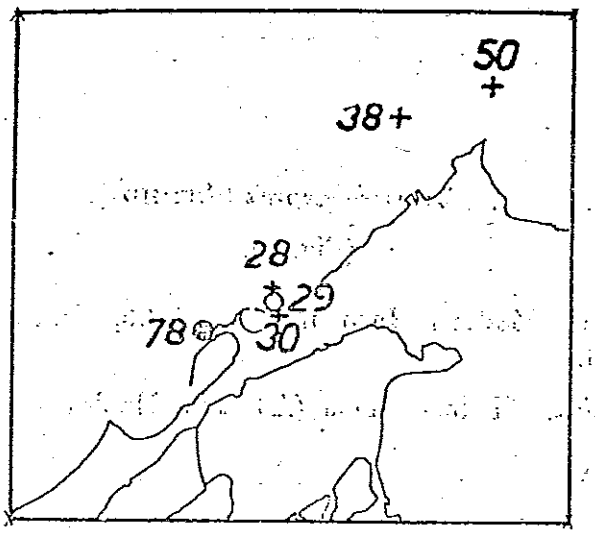

FIG. 2.

+ *Geodia mulleri* (Fleming).
O *Geodia conchilega* Schmidt.
● *Chondrilla nucula* Schmidt.

(For synonymy *see* Lendenfeld 1903, p. 113).

Occurrence.—Stn. 28, 10–12 fathoms, September 25; Stn. 30, 7 fathoms, September 25; Stn. 38, 17 fathoms, October 12; Stn. 50, 9 fathoms, October 18.

Remarks.—The specimens are all of small size, the largest only about 10 mm. in diameter.

Distribution.—North and West coasts of Europe; Mediterranean (Adriatic, Algeria, Dardanelles). (It is possible that the species is more widely distributed but that remains to be corroborated).

5.—*Geodia conchilega* SCHMIDT.

(Fig. 2).

(For synonymy *see* Lendenfeld 1903, p. 109).

Occurrence.—Stn. 29 ,7 fathoms, September 25.

Distribution.—Mediterranean (Banyuls, Adriatic).

FAMILY CHONDROSIIDÆ

Genus Chondrilla

6.—*Chondrilla nucula* SCHMIDT.

(Fig. 2).

Occurrence.—Stn. 78, 5–6 fathoms, November 5.

Distribution.—Mediterranean (Adriatic, Naples); West Indies; Red Sea; Indian Ocean; Malay Area; New Zealand. (The species is usually referred to as cosmopolitan, but the distribution given here is probably the complete range).

Genus Chondrosia Nardo

7.—*Chondrosia reniformis* Nardo.

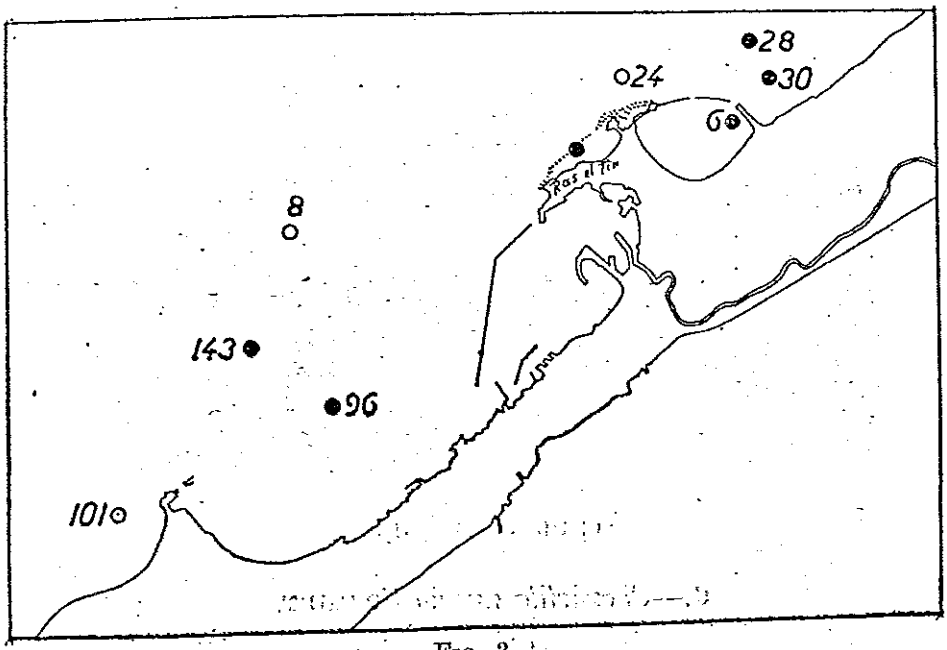

Fig. 3.

● *Chondrosia reniformis* Nardo.
O *Cinachyra australiensis* Carter.

Occurrence.—Stn. 6, 3 fathoms, September 11 ; Stn. 28, 10–12 fathoms, September 25 ; Stn. 30, 7 fathoms, September 25, Ras el Tin (POK), October 10 ; Stn. 96, 6 fathoms, November 6 ; Stn. 143, 13 fathoms, November 5.

Distribution.—Mediterranean (Adriatic, Naples, Tunis, Monaco, Thau) ; Indian Ocean ; Malay Area.

Sub-order Sigmatosclerophora

FAMILY TETILLIDÆ

Genus Cinachyra Sollas

8.—*Cinachyra australiensis* Carter.

(Fig. 3).

(For synonymy *see* Burton 1934, p. 523).

Occurrence.—Stn. 8, 15 fathoms, September 16 ; Stn. 24, 10 fathoms, September 21 ; Stn. 101, 5½ fathoms, November 7.

Distribution.—Indian Ocean ; Malay Area ; Australia ; West Indies.

FAMILY HAPLOSCLERIDÆ

Genus Haliclona Grant

9.—*Haliclona implexa* (SCHMIDT).

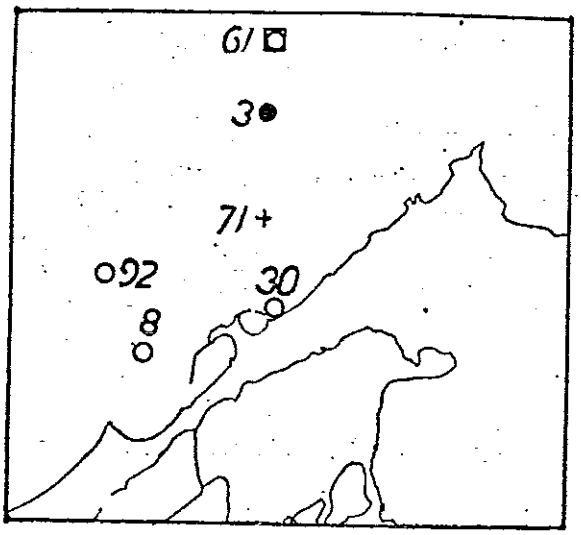

FIG. 4.

○ *Haliclona implexa* (Schmidt). + *Haliclona fibulata* (Schmidt).
● *Haliclona viridis* (Keller). □ *Haliclona steueri* sp. n.

(For synonymy and discussion *see* Burton 1930, p. 515).

Occurrence.—Stn. 8, 15 fathoms, September 16; Stn. 30, 7 fathoms, September 25; Stn. 61, 50 fathoms, October 30; Stn. 92, 24½ fathoms, November 6.

Distribution.—Arctic; North Atlantic; Azores; Mediterranean (Adriatic, Naples); Black Sea; Indian Ocean; Red Sea; Malay Area; Australia; New Zealand.

10.—*Haliclona fibulata* (SCHMIDT).

(Fig. 4).

(= *Gellius fibulatus* (Schmidt) Auctt.). (*See* Topsent 1925, p. 706).

Occurrence.—Stn. 71, 23 fathoms, November 4.

Remarks.—The megascleres are usually about ·3 mm. long instead of ·2 mm. as shown by Topsent (1925) but Babic (1922) has recorded megascleres in this species of ·266 mm. length.

Distribution.—Mediterranean (Adriatic, Naples).

11.—*Haliclona viridis* (Keller).

(Fig. 4).

Dactylochalina viridis Keller 1889, p. 391, pl. xxiii, figs. 37–43.

Occurrence.—Stn. 3, 34 fathoms, September 6.

Remarks.—The single fragment appears to agree closely with the holotype of this species.

Distribution.—Red Sea.

12.—*Haliclona steueri* sp. n.

(Fig. 4).

Occurrence.—Stn. 61, 50 fathoms, October 30.

Diagnosis.—Sponge massive, irregularly rounded; surface uneven, minutely hispid; texture firm, incompressible, friable; pores and oscules not apparent; colour, in spirit, yellowish-grey to yellowish-brown; skeleton a series of ascending multispicular fibres connected by an irregular unispicular network; spicules oxea, gently curved or, sometimes, slightly bent in middle, 18 by ·004 mm.

Remarks.—The external form suggests *Adocia grossa* (Schmidt), as does the skeleton, but the species is a well-marked *Haliclona*. The skeleton tends in parts to become very confused and the description of the skeleton of *Adocia grossa* given by Topsent (1925, p. 711) would be equally applicable to that of *Haliclona steueri*.

Genus Adocia Gray

13.—*Adocia cinerea* (Grant).

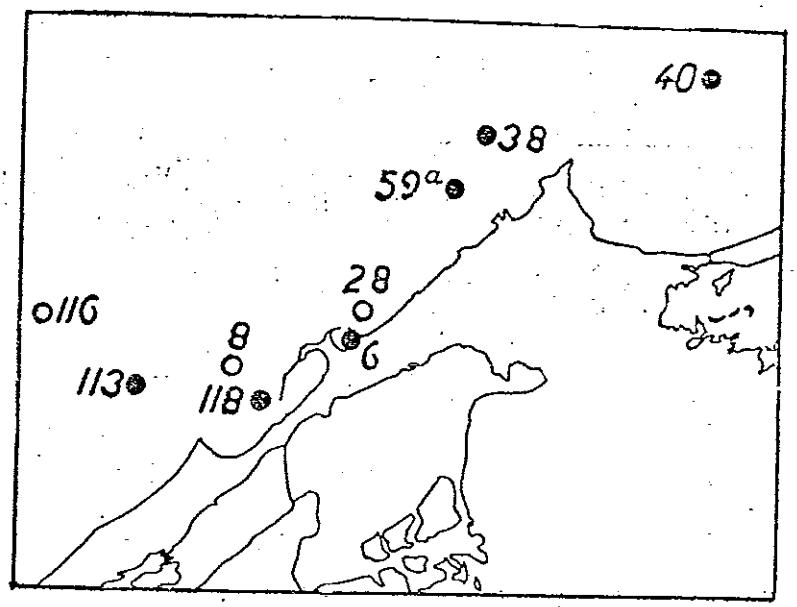

Fig. 5.

● *Adocia cinerea* (Grant).
○ *Adocia grossa* (Schmidt).

(= *Reniera cinerea* (Grant) Auctt.).

(*See* Burton 1926, pp. 415–424).

Occurrence.—Stn. 6, 3 fathoms, September 11 ; Stn. 38, 17 fathoms, October 12 ; Stn. 40, 8 fathoms, October 12 ; Stn. 59*a*, 17 fathoms, October 28; Stn. 113, 20 fathoms, November 9; Stn. 118, 5 fathoms, November 12.

Remarks.—All specimens consist of fragments of cylindrical branches differing in no way from the examples from Western Europe.

Distribution.—Arctic ; North and West coasts of Europe ; Mediterranean (Adriatic, Naples, Thau, Tunis) ; etc. (The exact distribution and the synonymy of this species are at present unknown. The range of distribution is probably greater than that recorded here, but of this there is no certainty although many specimens from other parts of the world have been recorded under this name).

14.—*Adocia grossa* (Schmidt).

(Fig. 5).

Reniera grossa Schmidt 1864, p. 37 ; (?) *Amorphina grossa* Czerniavsky 1879, p. 91 ; (?) *Halichondria grossa* Swartschewsky 1905, p. 6, pl. i., fig. 1 ; *Reniera grossa* Topsent 1925, p. 711.

Occurrence.—Stn. 8, 15 fathoms, September 16 ; Stn. 28, 10–12 fathoms, September 25 ; Stn. 116, 35 fathoms, November 11.

Distribution.—Mediterranean (Adriatic, Naples) ; ? Black Sea ; ? Caspian Sea.

15.—*Adocia semitubulosa* (Lieberkühn).

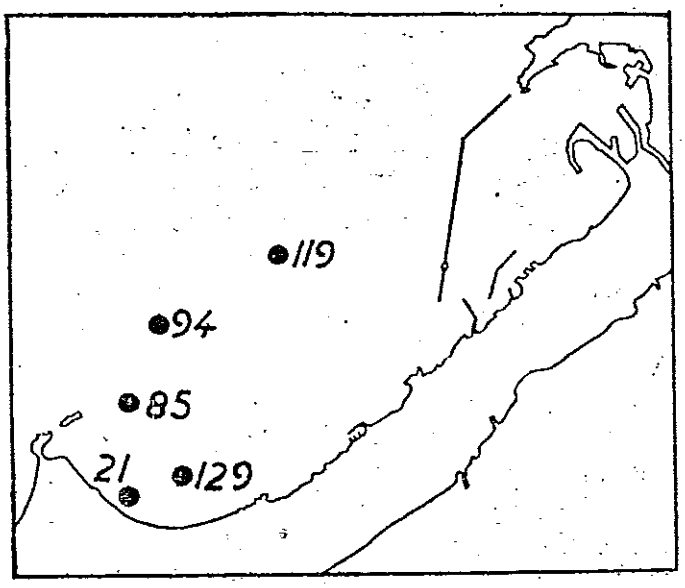

Fig. 6.

● *Adocia semitubulosa* (Lieberkühn).

(*See* Topsent 1925, p. 709).

Occurrence.—Stn. 21, 1½ fathoms, September 20 ; Stn. 85, 4½ fathoms, November 5 ; Stn. 94, 4½ fathoms. November 6 ; Stn. 119, 5½ fathoms, November 12 ; Stn. 129, 7 fathoms, November 13.

Remarks.—The species appears to be confined to the Mediterranean, possibly occurring also in the Black Sea, and such records as those of Dendy (1921) and Hanitsch (1889) are clearly wrong. Both of these refer to specimens belonging to entirely different species.

Distribution.—Mediterranean (Adriatic, Naples) ; ? Black Sea.

Genus Petrosia Vosmaer

16.—*Petrosia dura* (Nardo).

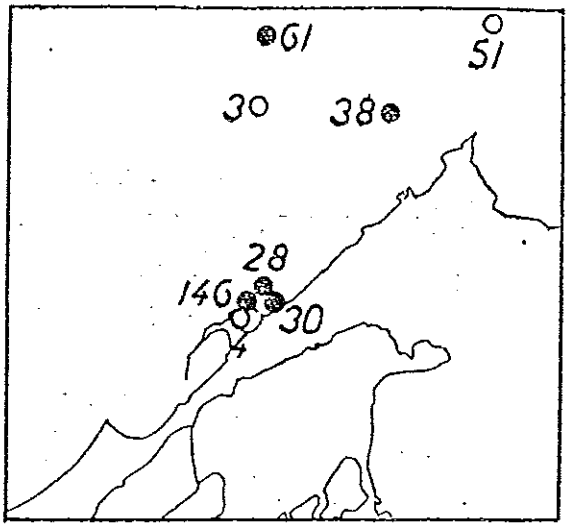

Fig. 7.

● *Petrosia dura* (Nardo).
O *Oceanapia tuber* (Lundbeck.)

Occurrence.—Stn. 28, 10–12 fathoms, September 25 ; Stn. 30. 7 fathoms, September 25 ; Stn. 38, 17 fathoms, October 12 ; Stn. 61, 50 fathoms, October 30 ; Stn. 146, 10–11 fathoms, November 15,

Remarks.—The five examples are very different in shape ; two closely resemble *Schmidtia ficiformis* Crivelli (1863) in shape, two are intermediate in form between the two figured specimens of *S. fungiformis* Crivelli, and the last has features in common with *S. clavata* Crivelli. It seems probable, therefore, that these three species are synonymous with *Petrosia dura* (Nardo).

Distribution.—Mediterranean (Adriatic, Naples, Tunis).

Genus Oceanapia Norman

17.—*Oceanapia tuber* (Lundbeck).
(Fig. 7).

Phloeodictyon tuber Lundbeck 1902, p. 57, pl. vi., figs. 11–13, pl. xii, figs. 6–7.

Occurrence.—Stn. 3, 34 fathoms, September 6 ; Stn. 4, 3 fathoms, September 11 ; Stn. 51, 13 fathoms, October 18.

Distribution.—Denmark Strait, Arctic,

AMILY DESMACIDONIDÆ

SECTION MYCALEÆ

Genus Mycale Gray

18.—*Mycale massa* (SCHMIDT).

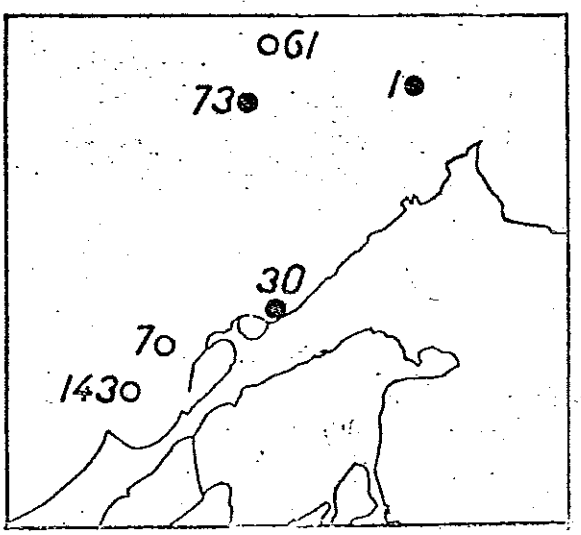

FIG. 8.

● *Mycale massa* (Schmidt).
⊙ *Mycale retifera* Topsent.

(*See* Topsent 1934, p. 88).

Occurrence.—Stn. 1, 21 fathoms, September 3; Stn. 30, 7 fathoms, September 25; Stn. 73, 38 fathoms, November 4.

Distribution.—West Indies; southern North Atlantic; Mediterranean (south of France, Naples, Adriatic).

19.—*Mycale retifera* TOPSENT.

(Fig. 8).

M. retifera Topsent 1924, p. 104, fig. 10; 1925, p. 704.

Occurrence.—Stn. 7, 17 fathoms, September 16; Stn. 61, 50 fathoms, October 30; Stn. 143, 13 fathoms, November 15.

Distribution.—Mediterranean (Naples).

SECTION MYXILLEÆ

Genus Myxilla Schmidt

20.—*Myxilla rosacea* (Lieberkühn).

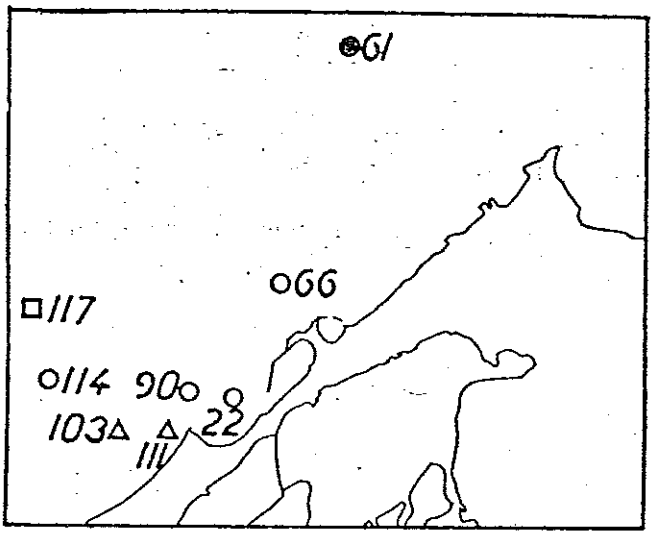

Fig. 9.

● *Myxilla rosacea* (Lieberkühn).
O *Myxilla prouhoi* (Topsent).
△ *Tedania nigrescens* (Schmidt).
□ *Clathria gradalis* Topsent.

Occurrence.—Stn. 61, 50 fathoms, October 30.

Distribution.—North Atlantic (from the Faröes to the Azores), North and West coasts of Europe; Mediterranean (Adriatic, Naples; Thau, Algeria).

21.—*Myxilla prouhoi* Topsent.

(Fig. 9).

Damiria prouhoi Topsent 1892, p. xxii; *Myxilla prouhoi* Topsent 1925, p. 697, pl. viii, figs. 7, text-fig. 25.

Occurrence.—Stn. 22, 7 fathoms, September 20; Stn. 61, 50 fathoms, October 30; Stn. 66, 20 fathoms, November 2; Stn. 90, 18 fathoms, November 6; Stn. 114, 25 fathoms, November 11.

Distribution.—Mediterranean (Banyuls, Naples).

SECTION TEDANIEAE.

Genus Tedania Gray

22.—*Tedania nigrescens* (SCHMIDT)

(Fig. 9).

Reniera nigrescens Schmidt 1862, p. 74; *Tedania nigrescens* Burton and Srinivasa Rao 1932, p. 353.

Occurrence.—Stn. 103, 16 fathoms, November 7; Stn. 111, 10 fathoms, November 9.

Remarks.—There are several specimens all of a deep bluish-green colour and it is interesting to note that of those from Stn. 111 the collector has recorded: "Dunkler Schwamm, gibt beim Pressen rot-violette Farbe ab."

Distribution.—Distributed generally throughout the world between latitudes 45° north and south (*see* Burton 1932, p. 346, fig. 44); Mediterranean (Adriatic, Naples, Tunis).

SECTION CLATHRIEÆ

Genus Clathria Schmidt

23.—*Clathria gradalis* TOPSENT.

(Fig. 9).

C. gradalis Topsent 1925, p. 651, fig. 10.

Occurrence.—Stn. 117, 55 fathoms, November 11.

Remarks.—The specimen, an irregular incrustation, agrees closely with the type in spiculation except that chelae appear to be absent. The arrangement of the megascleres is typically "hymedesmioid."

Distribution.—Mediterranean (Naples, Monaco).

Genus Thalysias Duchassaing and Michelotti

24.—*Thalysias jolicoeuri* (Topsent).

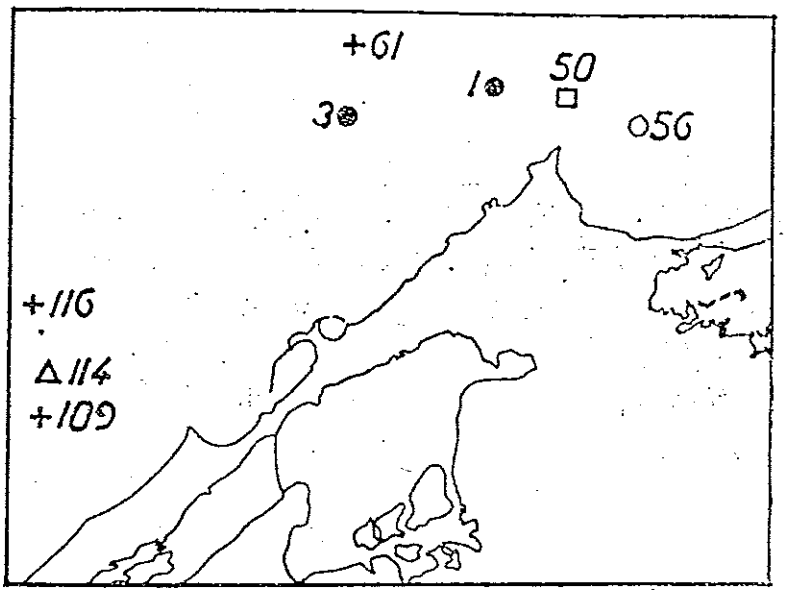

Fig. 10.

+ *Thalysias jolicoeuri* (Topsent.) O *Crambe crambe* (Schmidt).
● *Agelas oroides* (Schmidt). △ *Ciocalypta penicillus* Bowerbank.
□ *Bubaris vermiculata* (Bowerbank).

Rhaphidophlus jolicoeuri Topsent 1892, p. xxv; 1925, p. 658, fig. 14.

Occurrence.—Stn. 61, 50 fathoms, October 30; Stn. 109, 20 fathoms, November 8; Stn. 116, 35 fathoms, November 11.

Remarks.—Of the four specimens, 2 are encrusting, as are all the other specimens so far described, but two are branching, possibly repent. In one the branches measure 3–5 mm. in diameter, in the other 8–10 mm. in diameter.

Distribution.—Mediterranean (Naples, Banyuls).

Genus Crambe Vosmaer

25.—*Crambe crambe* (Schmidt).

(Fig. 10).

(*See* Babic 1922, p. 255 and Topsent 1925, p. 694).

Occurrence.—Stn. 56, 4 fathoms, October 28.

Distribution.—Mediterranean (Adriatic, Naples).

SECTION AGELEÆ

Genus Agelas Duchassaing and Michelotti

26.—*Agelas oroides* (Schmidt).

(Fig. 10).

Clathria oroides Schmidt 1864, p. 35, pl. iv, figs. 1–2;

Oroidea adriatica Gray 1867, p. 520.

Occurrence.—Stn. 1, 21 fathoms, September 3; Stn. 3, 34 fathoms, September 6.

Distribution.—Mediterranean (Adriatic).

FAMILY AXINELLIDÆ

Genus Ciocalypta Bowerbank

27.—*Ciocalypta penicillus* Bowerbank.

(Fig. 10).

(For synonymy *see* Topsent 1921, p. 687).

Occurrence.—Stn. 114, 25 fathoms, November 11.

Distribution.—Eastern Atlantic, from Northern Europe to South Africa; Indian Ocean; Malay Area; Australia; Mediterranean, (Naples).

Genus Bubaris Gray

28.—*Bubaris vermiculata* (Bowerbank).

(Fig. 10).

(For synonymy *see* Dendy 1924, p. 351).

Occurrence.—Stn. 50, 9 fathoms, October 18.

Distribution.—Throughout Eastern Atlantic; Kerguelen; Tristan da Cunha; New Zealand; Mediterranean (Naples, Banyuls, La Ciotat).

Genus Eumastia Schmidt

29.—*Eumastia sitiens* Schmidt.

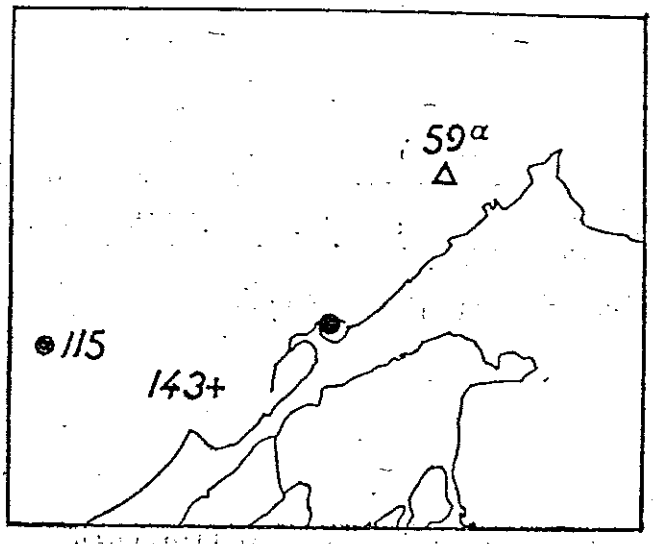

Fig. 11.

+ *Eumastia sitiens* Schmidt. O *Rhaphidostyla pelligera* (Schmidt).
● *Rhaphidostyla kitchingi* Burton. △ *Rhaphidostyla marsillii* (Topsent).

(For synonymy *see* Burton 1932, p. 200).

Occurrence.—Stn. 143, 13 fathoms, November 15.

Distribution.—Norway; Greenland; N.E. Greenland; Japan.

Genus Rhaphidostyla Burton

30.—*Rhaphidostyla pelligera* (Schmidt).
(Fig. 11).

Clathria pelligera Schmidt 1864, p. 34, pl. iii, fig. 13; Topsent 1925, p. 638.

Occurrence.—Mersa Matruh Reef, 26 fathoms, November 3; Stn. 115, 30 fathoms, November 11.

Remarks.—The specimens agree closely with Schmidt's description of the type except that the spicules are little more than half as long.

Distribution.—Mediterranean (Adriatic).

31.—*Rhaphidostyla kitchingi* Burton.

(Fig. 11).

R. kitchingi Burton 1935, p. 651.

Occurrence.—Eastern Harbour, September 10; Stn. 115, 30 fathoms, November 11.

Remarks.—Several small encrusting specimens, or fragments of pyramidal specimens, resemble the species so closely as to be indistinguishable from it.

Distribution.—West coast of Scotland.

32.—*Rhaphidostyla marsillii* (Topsent).

(Fig. 11).

Stylotella marsillii Topsent 1893, p. xli; Id. 1925, p. 642, pl. viii, fig. 13, text-fig. 6.

Occurrence.—Stn. 59*a*, 17 fathoms, October 28.

Distribution.—Mediterranean (Naples, Banyuls).

FAMILY CLAVULIDÆ

Genus Cliona Grant

33.—*Cliona viridis* (SCHMIDT).

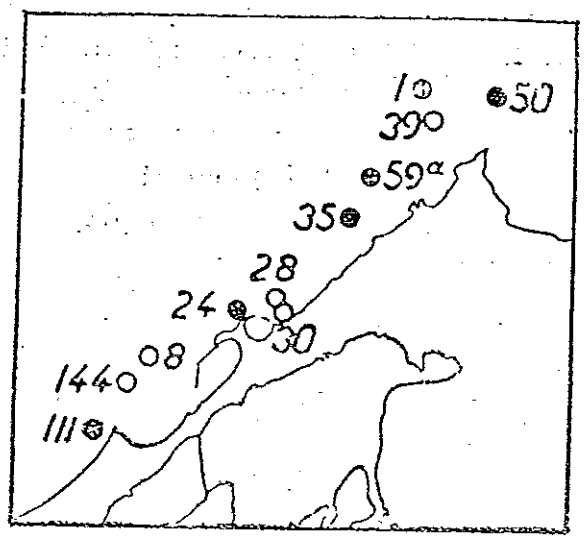

FIG. 12.

● *Cliona viridis* (Schmidt). O *Spirastrella cunctatrix* Schmidt.

Vioa viridis Schmidt 1862, p. 77, pl. vii, fig. 14 ; *Cliona viridis* Topsent 1900, p. 84, pl. ii, figs. 11–14, pl. iii, figs. 2–3, pl. iv, fig. 2 ; Annandale 1915, p. 13 ; Ferrer 1922, p. 248 ; Topsent 1925, p. 630 ; Id. 1928, p. 146.

(For further synonymy *see* Topsent 1900, p. 84).

Occurrence.—Stn. 1, 21 fathoms, September 3 ; Stn. 24, 10 fathoms, September 21 ; Stn. 35, 7 fathoms, October 7 ; Stn. 50, 9 fathoms, October 18 ; Stn. 59*a*, 17 fathoms, October 28 ; Stn. 111, 10 fathoms, November 11.

Distribution.—Gulf of Mexico ; Antilles ; Madeira ; Atlantic coast of Spain ; Burma ; Mergui Archipelago ; Red Sea ; Mediterranean (Adriatic, Naples, south coast of France, Algeria, Tunis).

Genus Spirastrella Schmidt

34.—*Spirastrella cunctatrix* Schmidt.

(Fig. 12).

(*See* Topsent 1918, p. 542).

Occurrence.—Stn. 1, 21 fathoms, September 3 ; Stn. 8, 15 fathoms, September 16 ; Stn. 28, 10–12 fathoms, September 25 ; Stn. 30, 7 fathoms, September 25 ; Stn. 39, 17 fathoms, October 12 ; Stn. 144, 18 fathoms, November 15.

Distribution.—West Indies ; San Thomé ; Amboina ; ? Australia ; Mediterranean (Naples, Tunis, Algeria).

Genus Tethya Lamarck

35.—*Tethya aurantium* (Pallas).

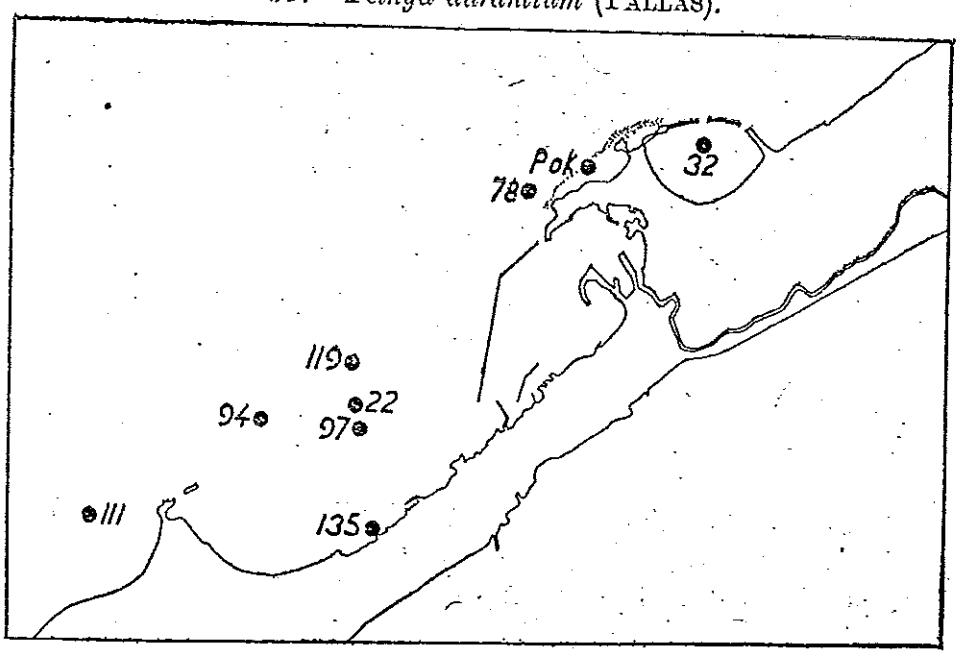

Fig. 13.

● *Tethya aurantium* (Pallas).

(*See* Topsent 1900, p. 294).

Occurrence.—St. 22, 7 fathoms, September 20 ; Stn. 32, 5½ fathoms, September 27 ; POK, October 10 ; Stn. 78, 5–6 fathoms, November 5 ; Stn. 94, 4½ fathoms, November 6 ; Stn. 97, 4 fathoms, November 6 ; Stn. 111, 10 fathoms, November 9 ; Stn. 119, 5½ fathoms, November 12 ; Stn. 135, 4 fathoms, November 14.

Distribution.—Arctic and North Atlantic Oceans ; Mediterranean (Adriatic, Naples, south coast of France, Tunis).

Genus Aaptos Gray

36.—*Asptos aaptos* (Schmidt).

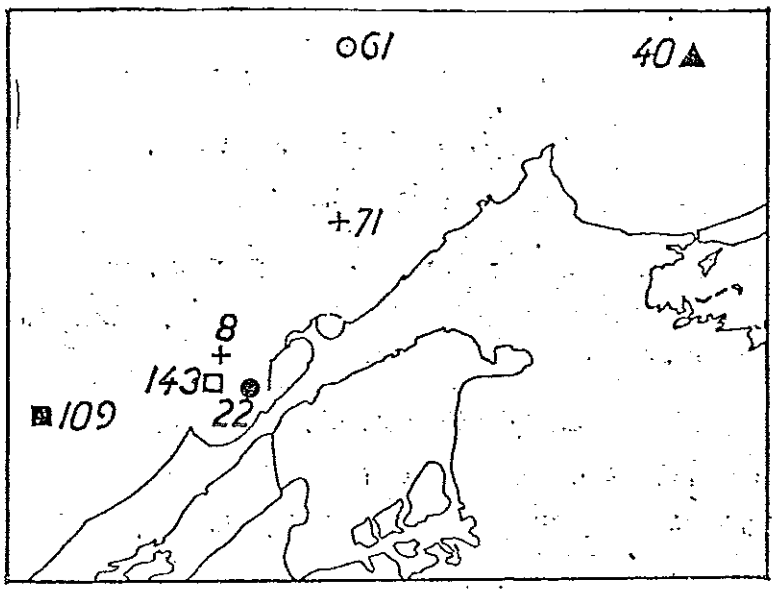

Fig. 14.

+ *Aaptos aaptos* (Schmidt). ○ *Didiscus placospongioid.es* Dendy.
● *Spongia officinalis* Linnaeus. ▲ *Sp. off.* var. *tubulifera* Schulze.
Sp. off. var. *adriatica* Schulze. □ *Spongia equina* (Schmidt.)

(For synonymy *see* Dendy and Frederick 1924, p. 508).

Occurrence.—Stn. 8, 15 fathoms, September 16; Stn. 71, 23 fathoms, November 4.

Distribution.—Gulf of Mexico; Porto Rico; Indian Ocean; Malay Area; Australia; Mediterranean (Adriatic, Naples, south coast of France, Algeria, Tunis).

Genus Didiscus Dendy

37.—*Didiscus placospongioides* Dendy.
(Fig. 14).

D. placospongioides Dendy 1921, p. 135, pl. vii, fig. 10, pl. xviii, fig. 3.

Occurrence.—Stn. 61, 50 fathoms, October 30.

Remarks.—A very small specimen was obtained which differs in no important respect, so far as the skeleton is concerned, from the holotype. In external form, the same smooth surface is seen but the general characters are obscured by the fact that the sponge is agglutinating, the body containing many fragments of shell, etc.

Distribution.—Cargados Carajos, Indian Ocean.

ORDER KERATOSA

Genus Spongia Linnæus

38.—*Spongia officinalis* (Linnaeus).

(Fig. 14).

Occurrence.—Stn. 22, 7 fathoms, September 20.

Remarks.—A very small specimen, a few mm. across, too small to assign to any particular variety.

var. *tubulifera* Schulze.

Occurrence.—Stn. 40, 8 fathoms, October 12.

Distribution.—Mediterranean (Adriatic, Naples).

var. *adriatica* Schulze.

Occurrence.—Stn. 109, 20 fathoms, November 8.

Distribution.—Mediterranean (Adriatic).

39.—*Spongia equina* (Schmidt).

(Fig. 14).

Occurrence.—Stn. 143, 13 fathoms, November 15.

Remarks.—The specimen is too small to assign to any particular variety, so that the distribution can only be spoken of in general terms.

Distribution.—Mediterranean and West Indies generally.

Genus Cacospongia Schmidt

40.—*Cacospongia scalaris* Schmidt.

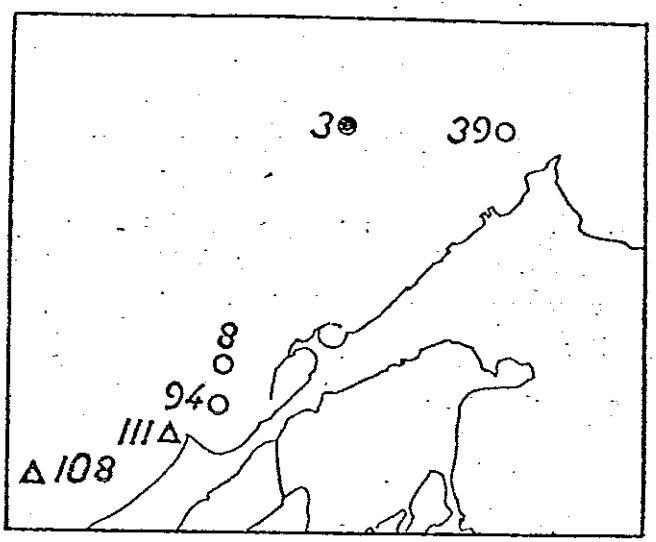

Fig. 15.

● *Cacospongia scalaris* Schmidt. O *Cacospongia cavernosa* Schmidt.
△ *Cacospongia mollior* Schmidt.

Occurrence.—Stn. 3, 34 fathoms, September 6.

Distribution.—Mediterranean (Adriatic, Naples, south coast of France).

41.—*Cacospongia cavernosa* Schmidt.

(Fig 15).

Occurrence.—Stn. 3, 34 fathoms, September 6 ; Stn. 8, 15 fathoms, September 16 ; Stn. 39, 17 fathoms, October 12 ; Stn. 94, 4½ fathoms, November 6.

Distribution.—Mediterranean (Adriatic, Naples, south coast of France).

42.—*Cacospongia mollior* Schmidt.

(Fig. 15).

Occurrence.—Stn. 108, 14 fathoms, November 8 ; Stn. 111, 10 fathoms, November 9.

Distribution.—Mediterranean (Adriatic, Tunis).

Genus Hircinia Nardo

43.—*Hircinia variabilis* Schmidt.

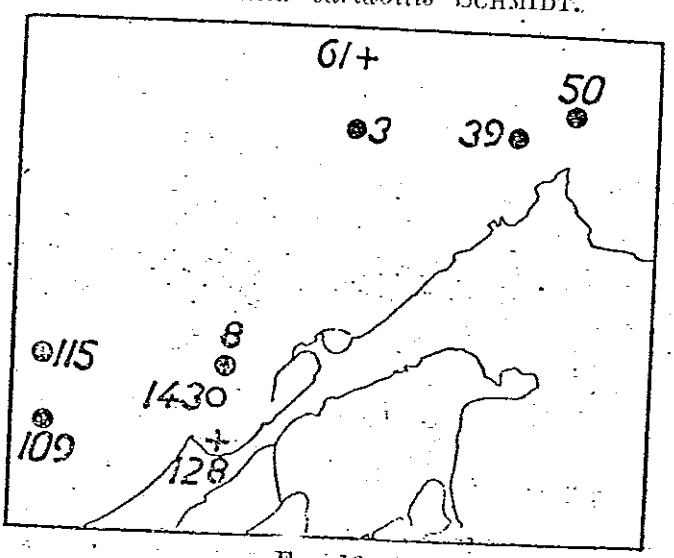

Fig. 16.

● *Hircinia variabilis* Schmidt. ○ *Hircinia oros* Schmidt.
+ *Dysidea fragilis* (Montagu).

Occurrence.—Stn. 3, 34 fathoms, September 6 ; Stn. 8, 15 fathoms, September 16 ; Stn. 39, 17 fathoms, October 12 ; Stn. 50, 9 fathoms, October 18 ; Stn. 109, 20 fathoms, November 8 ; Stn. 115, 30 fathoms, November 11.

Distribution.—Indian Ocean ; Red Sea ; Malay Area ; Australia ; Mediterranean (Adriatic, Naples, south coast of France, Tunis).

44.—*Hircinia oros* Schmidt.

(Fig. 16).

Occurrence.—Stn. 143, 13 fathoms, November 15.

Distribution.—Mediterranean (Adriatic, Naples).

Genus Dysidea Johnston

45.—*Dysidea fragilis* (Montagu).

(Fig. 16).

(For synonymy *see* Burton 1934, p. 583).

Occurrence.—Stn. 61, 50 fathoms, October 30 ; Stn. 128, 7 fathoms, November 13).

Distribution.—Almost cosmopolitan ; Mediterranean (Adriatic, Naples, south coast of France, Tunis).

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