REPORT ON THE SCIENTIFIC RESULTS OF THE "MICHAEL SARS" NORTH ATLANT. DEEP-SEA EXPED. 1910

CARRIED OUT UNDER THE AUSPICES OF THE NORWEGIAN GOVERNMENT AND THE SUPERINTENDENCE OF
SIR JOHN MURRAY, K. C. B. and DR. JOHAN HJORT

TINTINNOINEA

FROM THE

"MICHAEL SARS" NORTH ATLANTIC DEEP-SEA EXPEDITION 1910

BY

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Corrections.

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»	21	»	2	»	20 »	11, 18, 19	» 12, 18
»	21	»	2	»	21 »	36—38	» 36—39
»	23	»	2	»	16 f. b.	*fraknóii*.....	» *lusus-undae*
»	24	»	1	»	1-11 »	**Undella dilatata** to be referred to **Undella hyalina** (also in the tables).	
»	25	»	2	»	5 f. a.	18, 22	» 18, 20, 22
»	28	»	2	»	11 »	Tintinodeen..... ..	» Tintinnodeen

Table I *Tintinnus pinguis* present (×) in 10, 1000—500

» II *Acanthostomella lata* absent (-) in 28, 200—0

» II *Acanthostomella minutissima* singly (○) in 28, 200—0, in 34, 50—0 and in 34, 100 - 50

» II *Codonellopsis lagenula* singly (○) in Pump sample 8/5

» II *Coxliella declivis* i. o. *C. laciniosa*

» III *Coxliella laciniosa* singly (○) in 60, 100—0

INTRODUCTION

During the examination of the phytoplankton samples from the "Michael Sars" Expedition specimens of the zooplanktonic suborder *Tintinnoinea* were constantly observed. As these small individuals usually pass through the meshes of the zooplankton nets, it was natural to deal with this group in connection with the study of the phytoplankton. The results are presented separately in this paper.

In this preserved material the empty lorica was the only part of the animal available for identification. I have, therefore, followed the classification in KOFOID and CAMPBELL'S Conspectus (1929), based entirely upon the lorica. (A few exceptions only have been made: *Codonellopsis lagenula, Epiplocylis acuminata, Parafavella denticulata* and *P. edentata, Tintinnopsis ventricosoides, Undella hyalina, Undellopsis marsupialis.* — Cp. the text.) The nomenclature in this Conspectus has been followed, but I have consistently used one 'i' only in specific names derived from names of persons. For synonyms reference is also made to this work, where a full list is to be found.

When it was found necessary or desirable, original figures are given; otherwise I have referred to those earlier published figures with which the "Michael Sars" specimens show most agreement.

In his preliminary description of the phytoplankton from the "Michael Sars" Expedition GRAN (1912) divides the part of the Atlantic which was traversed, into 5 areas:

I. The coast banks of North Europe.
II. The coast banks of South Europe and North Africa.
III. The Central Atlantic from the Canaries to the Azores, and from the Azores to the Newfoundland Bank.
IV. The Newfoundland Bank.
V. The northern Atlantic section.

These areas have been used for reference in the report of the results of the phytoplankton studies, and I have found it natural to make use of them in the tintinnid tables too. In the following text the short form: Area I—V has been used. (In V the stations near Rockall and Shetland are now included.)

List of Stations.

Number of station	Date	Position	Number of station	Date	Position	Number of station	Date	Position
	AREA I.							
1	9/4	49° 27′ N 8° 36′ W	20	5/5	35° 25′ N 6° 25′ W	39	20/5	26° 3′ N 15° 0′ W
2	10/4	49° 30′ N 9° 42′ W	Pump sample	5/5	*Spanish Bay.*	40	22/5	28° 15′ N 13° 29′ W
3	10/4	49° 32′ N 10° 49′ W	22	5/5	35° 42′ N 6° 51′ W			
4	10/4	49° 38′ N 11° 35′ W	23	5/5	35° 32′ N 7° 7′ W		AREA III.	
Pump sample	15/4	*Queenstown.*	25	8/5	35° 46′ N 8° 16′ W	44	28/5	28° 37′ N 19° 8′ W
5	16/4	51° 24′ N 9° 27′ W	Pump sample	8/5	*Spanish Bay.*	46	29/5	28° 56′ N 21° 45′ W
7	17/4	49° 54′ N 12° 10′ W	27	9/5	36° 31′ N 7° 1′ W	48	31/5	28° 54′ N 24° 14′ W
9	18/4	47° 49′ N 10° 52′ W	28	9/5	36° 0′ N 7° 19′ W	49 c	2/6	29° 7′ N 25° 32′ W
10	19/4	45° 26′ N 9° 20′ W	29	9/5	35° 10′ N 7° 55′ W	50	4/6	30° 8′ N 31° 19′ W
			30	10/5	34° 38′ N 8° 22′ W	51	6/6	31° 20′ N 35° 7′ W
	AREA II.		31	10/5	33° 47′ N 8° 27′ W	53	9/6	34° 59′ N 33° 1′ W
11	21/4	44° 25′ N 9° 18′ W	32	10/5	33° 27′ N 8° 32′ W	54	10/6	35° 37′ N 30° 15′ W
12	21/4	43° 11′ N 9° 26′ W	Pump sample	11/5	*Coast of Marocco.*	58	12/6	37° 38′ N 29° 20′ W
13	22/4	41° 32′ N 9° 5′ W	34	13/5	28° 52′ N 14° 16′ W	Fayal	17/6	
Pump sample	22/4	*Coast of Portugal.*	35	18/5	27° 27′ N 14° 52′ W	59	17/6	38° 30′ N 28° 37′ W
—»—	25/4	*Gibraltar Strait.*	36	19/5	26° 12′ N 14° 26′ W	60	20/6	37° 9′ N 38° 5′ W
18	29/4	35° 56′ N 5° 43′ W	37	20/5	26° 1′ N 14° 33′ W	63	22/6	36° 5′ N 43° 58′ W
19	2/5	36° 5′ N 4° 42′W	38	20/5	26° 3′ N 14° 36′ W	64	24/6	34° 44′ N 47° 52′ W

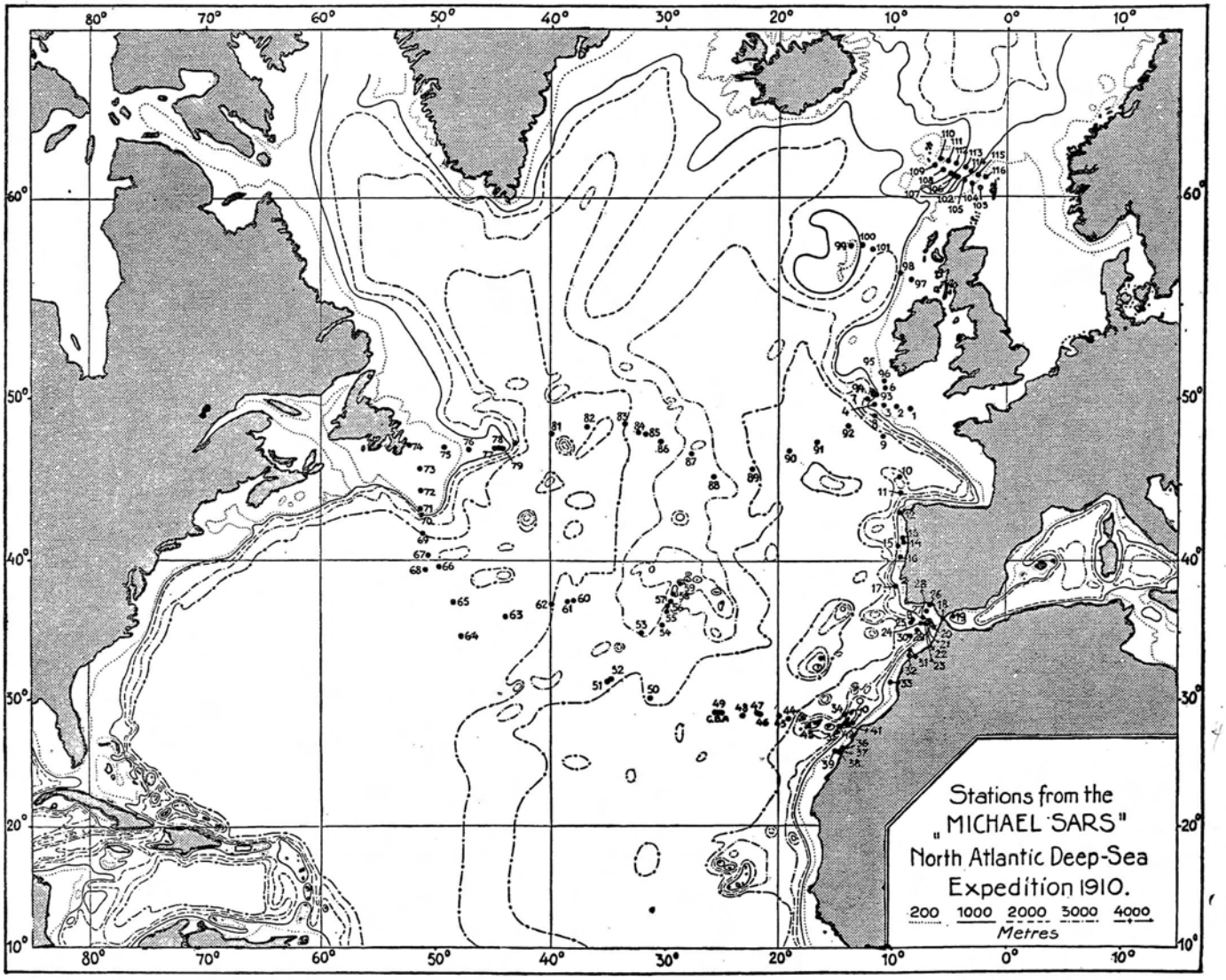

Fig. 1.

Number of station	Date	Position
65	25/6	37° 12′ N 48° 30′ W
66	26/6	39° 30′ N 49° 42′ W
68	28/6	39° 20′ N 50° 50′ W
69	29/6	41° 39′ N 51° 4′ W
	AREA IV.	
70	30/6	42° 59′ N 51° 15′ W
76	9/7	47° 11′ N 47° 6′ W
77	10/7	47° 18′ N 44° 54′ W
80	11/7	47° 34′ N 43° 11′ W
	AREA V.	
81 a	12/7	48° 2′ N 39° 55′ W
83	14/7	48° 30′ N 33° 35′ W
84	15/7	48° 4′ N 32° 25′ W
85	15/7	47° 58′ N 31° 41′ W
86	16/7	47° 29′ N 30° 20′ W
87	17/7	46° 48′ N 27° 46′ W
88	18/7	45° 26′ N 25° 45′ W
90	21/7	46° 58′ N 19° 6′ W
92	23/7	48° 29′ N 13° 55′ W
97	4/8	56° 15′ N 8° 28′ W
98	5/8	56° 33′ N 9° 30′ W
99	6/8	57° 45′ N 13° 40′ W
103	10/8	60° 26′ N 2° 34′ W

Tables I—V (pp. 29—37) give the tintinnid representation in each of the 5 areas.

In area I neritic species belonging to the genera *Tintinnopsis* and *Stenosemella* were most prominent and besides these *Codonellopsis lagenula*. Oceanic species represented by *Dictyocysta* and *Parundella* spp. were also rather common.

The same genera were represented along the coasts

of South Europe and North Africa, but here a series of more southern species were also observed, such as *Climacocylis, Cyttarocylis, Tintinnus, Undella* and *Xystonella* spp.

The tropical character of the tintinnid plankton became more and more conspicuous along the southern Atlantic route. Especially in the Sargasso Sea many rather rare tropical tintinnids were observed, and the number of species was very high. From Station 64 no less than 59 species have been recorded.

On the Newfoundland Banks and the nearest stations to the south (66, 69) the tintinnid fauna was poor, dominated by typical north Atlantic species, such as *Acanthostomella norvegica, Parafavella* and *Ptychocylis* spp. This poor fauna occurred again on the last part of the "Michael Sars" route, near Rockall and Shetland.

The tintinnid plankton observed in the north Atlantic section was mainly composed of species recorded from area III, but the number of genera as well as of species was considerably reduced. More northern species, such as *Parundella edentata* and the neritic *Codonellopsis lagenula*, were also represented.

More details about the distribution of the different species are to be found in the following, where the species are arranged alphabetically.

SYSTEMATIC PART

Acanthostomella lata Kofoid and Campbell.
Text-fig. 2 a.

Acanthostomella lata, Kofoid and Campbell 1929, p. 192.

Area II: Pump sample 25/4, Sts. 18, 22, 23, 27, 29, 34.

The few specimens recorded agree well with KOFOID and CAMPBELL's description and figure (1929, p. 192, fig. 364) except in having more outspreading oral teeth.

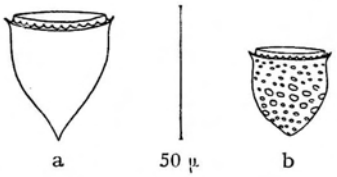

Fig. 2.
a. *Acanthostomella lata*. St. 34.
b. *A. minutissima*. St. 28.

Length 40—46 μ.

KOFOID and CAMPBELL record this species from the South Equatorial Drift of the Pacific. In the "Michael Sars" area it occurred at Gibraltar, in the Spanish Bay and near the Canary Islands.

Acanthostomella minutissima Kofoid and Campbell.
Text-fig. 2 b.

Acanthostomella minutissima, Kofoid and Campbell 1929, p. 192.

Area II: Sts. 28, 34.

Only four specimens were observed. They differed from KOFOID and CAMPBELL's figure (1929, p. 192, fig. 358) in the more subconical aboral end.

Length 32—33 μ.

Also this species has been recorded from the South Equatorial Drift of the Pacific and, besides, from the Peruvian Current. The "Michael Sars" specimens are from the Spanish Bay and from near the Canary Islands.

Acanthostomella norvegica (Daday) Jørgensen.

Acanthostomella norvegica, Jørgensen 1927, p. 13, fig. 23.
Acanthostomella norvegica, Kofoid and Campbell 1929, p. 193.

Area IV: Sts. 70, 76, 77.
» V: Sts. 81 a, 103.

This northern-oceanic species was observed on the Newfoundland Banks and near the Shetland Islands.

Amphorella quadrilineata (Claparède and Lachmann) Daday.

Amphorella quadrilineata, Kofoid and Campbell 1929, p. 308, fig. 587 and p. 311.

Area II: Sts. 12, 25, 27—30, 34, 35, 39.
» III: Sts. 44, 46, 49 c—54, 59—65, 68.
» V: Sts. 81 a, 85, 87, 88.

This species, widely distributed in temperate and warm seas, occurred regularly along the "Michael Sars" route from Portugal to Cape Bojador, from the Canary Islands to the Newfoundland Banks (not on the Banks themselves) and also on the first part of the northern Atlantic route.

Amphorella sp. (?).
Text-fig. 3.

Area II: St. 30.

In the 200—0 m sample from Station 30 in the Spanish Bay one specimen was observed which resembles the preceding species. It only differed in having a toothed oral rim as in the genus *Odontophorella* KOFOID and CAMPBELL (1929, p. 317).

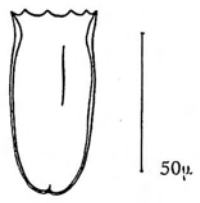

Fig. 3. *Amphorella* sp. (?). St. 30.

This specimen was sketched, but it was lost before a closer examination could be made. Similar specimens did not occur in the rest of the material. (It may probably have been a deformed specimen of *Amphorella quadrilineata*).

Length 66 μ.

Amphorellopsis acuta (Schmidt) Kofoid and Campbell.

Amphorella acuta, Schmidt 1901, p. 185, fig. 2.
Amphorellopsis acuta, Kofoid and Campbell 1929, p. 315.

Area III: St. 64.

In the 200—0 m sample from the Sargasso Sea station 64 a single specimen was observed which was classified as belonging to this species. It has previously been recorded from the Gulf of Siam, the coast of West Africa and the Great Barrier Reef (Australia).

Amplectella collaria (Brandt) Kofoid and Campbell.
Text-fig. 4a.

Amplectella collaria Kofoid and Campbell 1929, p. 253.

Area III: Sts. 44, 46, 51, 64.

The "Michael Sars" specimens (Fig. 4 a) do not quite agree with the figure 488 in KOFOID and CAMBELL'S Conspectus (1929). They show most accordance with JØRGENSEN'S figure (1924, p. 39, fig. 49), but the maximum diameter is relatively smaller. From BRANDT'S figure (1906, pl. 63, fig. 12) they differ in having a less flattened aboral end.

Length about 115 μ.

This species occurred at 2 stations west of the Canary Islands and also at Sts. 51 and 64 on the border of the Sargasso Sea. Previously it has been recorded from the Sargasso Sea and the Eastern Mediterranean.

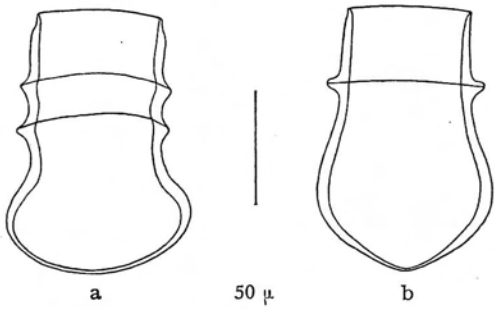

Fig. 4. a. *Amplectella collaria*. St. 46.
b. *A. occidentalis*. St. 64.

Amplectella occidentalis Kofoid and Campbell.
Text-fig. 4b.

Amplectella occidentalis, Kofoid and Campbell 1929, p. 252.

Area III: St. 64.

In the 100-0 m sample from the Sargasso Sea station 64 there occurred one single specimen belonging to this species. Fig. 4 b differs from that of KOFOID and CAMPBELL (1929, p. 252, fig. 487) in the curvation of the aboral part.

Length 115 μ.

The species has previously been recorded from the South Equatorial Drift of the Eastern Tropical Pacific.

Brandtiella palliata (Brandt) Kofoid and Campbell.

Brandtiella palliata, Kofoid and Campbell 1929, p. 325, fig. 623.

Area III: Sts. 50, 64.

Single specimens of this characteristic species were observed in the 200—100 m sample from Station 50, south of the Azores, and in all three samples from the Sargasso Sea station 64. It has previously been recorded from the same area.

Bursaopsis bursa (?) (Cleve) Kofoid and Campbell.
Text-fig. 5.

Bursaopsis bursa, Kofoid and Campbell 1929, p. 304, fig. 577.

Area III: St. 65.

In the 200—0 m sample from Station 65, on the border of the Sargasso Sea, one single specimen occurred, which probably belongs to this species. It differs from the figure of CLEVE (1899, p. 969, fig. 1) in having a quite even oral rim, a more rotund bowl and smaller size.

Length 70 μ.

The species has previously been recorded from off the Azores and from the Adriatic Sea.

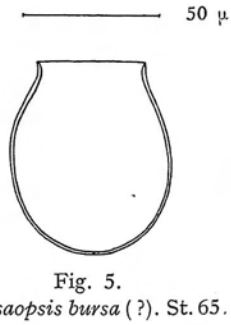

Fig. 5.
Bursaopsis bursa (?). St. 65.

Climacocylis sp.

Climacocylis, Kofoid and Campbell 1929, p. 92.

Area II: Pump sample 25/4, Sts. 18—20, 22—25, 27, 28, 34, 35, 39, 40.
» III: Sts. 49c—54, 58, Fayal, 59—65, 68.
» V: Sts. 81a, 87—92.

In the "Michael Sars" material there occurred a number of forms, which did not closely agree with any of the KOFOID and CAMPBELL species. They were not subjected to further classification, but listed under this name.

The genus was fairly common on the route from Gibraltar to Cape Bojador (where it occurred in abundance), and likewise along the southern as well as along the last part of the northern Atlantic route.

Codonella amphorella Biedermann.
Text-fig. 6 a.

Codonella amphorella, Kofoid and Campbell 1929, p. 53.

Area II: Sts. 34, 35, 39, 40.
» III: Sts. 44—46, 49c—53, 58—68.
» IV: St. 80.
» V: St. 81a.

The caudal prolongation seems less acute than shown on BRANDT's figure (1906, pl. 9, fig. 3). This may partly be due to the agglutinated coccoliths. But even after treatment with diluted acid it appeared to be rather blunt, at any rate far from being as acute as shown on JØRGENSEN's figure (1924, p. 91, fig. 104).

Length 90—98 μ.

This species has previously been recorded from the Mediterranean and from the southern Atlantic. It was now observed near the Canary Islands; it was common along the southern Atlantic route, and occurred in abundance at Station 63 on the border of the Sargasso Sea. It was also represented on the Bank station 80 and the nearest deep-sea station.

Codonella elongata Kofoid and Campbell.

Codonella galea, Brandt 1906, pl. 12, fig. 4.
Codonella elongata, Kofoid and Campbell 1929, p. 59.

Area I: St. 7.
» II: Sts. 11, 12, 18, 19, 22—25, 27—32, 34, 35, 39, 40.
» III: Sts. 44—46, 49c—54, 58, Fayal, 59—65, 68, 69.
» V: Sts. 81a, 87—92.

Length 100—105 μ.

This widely distributed species was quite common along the whole route of the "Michael Sars" from Ireland and back. It was, however, not recorded from the Newfoundland Banks.

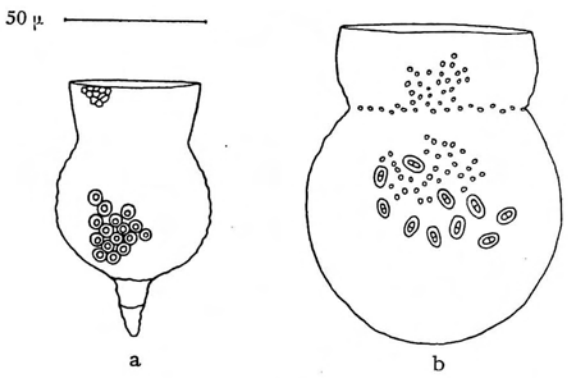

Fig. 6. a. *Codonella amphorella*. St. 34.
b. *C. nationalis*. St. 19.

Codonella nationalis Brandt.
Text-fig. 6 b.

Codonella nationalis, Kofoid and Campbell 1929, p. 63.

Area II: St. 19.

In the 50—0 m sample from Station 19 in the Mediterranean there occurred one single specimen that probably belonged to this species.

Length 115 μ.

It has also previously been recorded from the Mediterranean.

Codonella oceanica Brandt.

Codonella cistellula var. a *oceanica*, Brandt 1906, pl. 10, fig. 2.
Codonella oceanica, Kofoid and Campbell 1929, p. 63.

Area II: Sts. 25, 27, 28, 30, 34, 35, 39, 40.
» III: Sts. 44—46, 49c—54, 58, Fayal, 59—68.
» V: Sts. 81a, 87, 88.

At Station 34, near the Canaries, and at Station 59, off the Azores, specimens were observed which were thickly covered, also upon the collar, with coccoliths, and accordingly they looked a little ragged. See Text-fig. 7.

In the "Michael Sars" area this species was first observed in the Spanish Bay. Otherwise its occurrence was nearly parallell to that of *C. elongata*, although it was a little rarer.

It has previously been recorded from the same area.

Fig. 7.
Codonella oceanica.
St. 34.

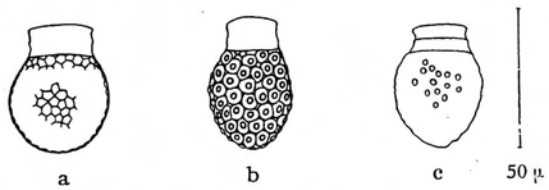

Fig. 8. *Codonella lagenula.*
a. St. 7. b. St. 88. c. St. 60.

Codonellopsis lagenula (Claparède and Lachmann) Jørgensen.
Text-fig. 8.

Codonellopsis lagenula, Jørgensen 1924, p. 100.

Area I: Sts. 3, 4, 7, 9, 10.
» II: Sts. 11, 13, 20, 25, Pump sample 8/5, St. 40.
» III: Sts. 60, 63.
» IV: St. 80.
» V: Sts. 81a, 85, 87, 88, 90, 92.

The figures show that this species varies considerably in shape as well as in structure and covering. Intermediate forms are also seen. I refer the "Michael Sars" specimens to *Codonellopsis* because of their more or less visible annulation of the collar, and I agree with JØRGENSEN (1924) in his limitation of the species.

The structure of the bowl, when visible, consists of pentagonal and hexagonal meshes (as shown in Fig. 8a). Generally the structure is concealed by a cover of coccoliths (Fig. 8b). Fig. 8c shows a specimen with 2 distinct annuli. Windows in the collar (JØRGENSEN 1924, p. 101) were never seen in the "Michael Sars" material.

Length 40—55 μ.

The species was fairly common on the coastal banks of Europe and Africa from Ireland to the Canary Islands, likewise along the northern route of the "Michael Sars". It also occurred at two stations from the Azores to the border of the Sargasso Sea.

It has previously been recorded from several localities in the North Atlantic and the Arctic. If synonymous with *Codonellopsis contracta* Kofoid and Campbell, it also occurs in the Peruvian Current.

Codonellopsis orthoceras (Haeckel) Jørgensen.
Text-fig. 9.

Codonellopsis orthoceras, Kofoid and Campbell 1929, p. 84.

Area II: Sts. 18, 19, 22, 34, 40.
» III: Sts. 46, 50—53, 59, 63, 64, 68.

The species varies much with regard to length of the collar as shown in fig. 9 (a, b). Intermediate forms are also seen. HOFKER (1931) considers the various shapes of the collar a consequence of outer circumstances, while JØRGENSEN (1924) looks upon the short collars as presumably unfinished ones. The covering of the lorica proper mainly consists of coccoliths.

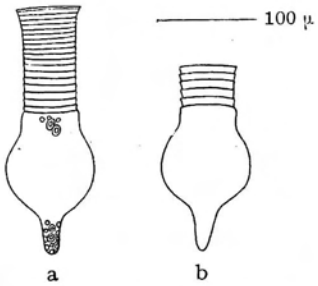

Fig. 9.
Codonellopsis orthoceras. St. 18.

Length of shortcollared specimens 175—190 μ.
» « longcollared — 210—250 μ.

This warm-water species was observed at the Mediterranean station and occured rather frequently along the "Michal Sars" route from Gibraltar to the Newfoundland Banks.

Coxliella ampla (Jørgensen) Brandt.

Coxliella ampla, Jørgensen 1924, p. 73, fig. 81.
Coxliella ampla, Kofoid and Campbell 1929, p. 103.

Area II: Sts. 39, 40.
» III: Sts. 60, 63, 64.
» V: Sts. 81a, 85.

This species has its main distribution in cold northern waters. In the "Michael Sars" material it was very rare and scarce. It was observed off Cape Bojador, near the Canaries and on the border of the Sargasso Sea. Single specimens were also seen at two stations along the first part of the northern Atlantic route.

Fig. 10.
Coxliella ampla (?).
St. 60.

At Station 60 between the Azores and the Sargasso Sea two small (36 μ long) specimens were observed having an everted oral margin of the 2 first spiral turns like *C. meunieri* Kofoid and Campbell. Otherwise they showed the closest agreement with *C. ampla*, and I have placed them under that name. See Text-fig. 10.

Coxliella laciniosa (Brandt) Brandt.

Cyttarocylis? (*Coxliella*) *ampla* (?) var. a *laciniosa*, Brandt 1906, pl. 28, fig. 2.
Coxliella laciniosa, Kofoid and Campbell 1929, p. 100.

Area II: St. 39.
» III: Sts. 50, 60, 64.

This common warm-water species occurred together with *C. ampla* off Cape Bojador and besides at three stations along the southern Atlantic route of the "Michael Sars".

Coxliella longa (Brandt) Laackmann.

Cyttarocylis (?) *ampla* (?) var. c *longa*, Brandt 1906, pl. 28, fig. 3.
Coxliella longa, Kofoid and Campbell 1929, p. 101.

Area III: St. 64.

On the Sargasso Sea station 64, where all the *Coxliella* species in this material were represented, a single specimen of this species was observed.

It is previously known from the southern Atlantic and the western Tropical Pacific.

Coxliella sp.

Area III: Sts. 46, 64.

On each of the stations 46, west of the Canaries, and 64, in the Sargasso Sea, there occurred single specimens of the genus *Coxliella*. They were a little defect and consequently not subjected to further classification.

Craterella acuta Kofoid and Campbell.

Amphorella urceolata, Jørgensen 1924, p. 17, fig. 25 a.
Craterella acuta, Kofoid and Campbell 1929, p. 195.

Area II: St. 35.
» III: Sts. 53, 54, 60, 63.

JØRGENSEN (1924) recorded this species from the Ionian Sea (Mediterranean). In the "Michael Sars" area it was observed near the Canaries and between the Azores and the Sargasso Sea.

Craterella armilla Kofoid and Campbell.

Craterella armilla, Kofoid and Campbell 1929, p. 195, fig. 371.

Area III: Sts. 59, 60.

One specimen was observed off the Azores, and also at Station 60 between the Azores and the Sargasso Sea the species was represented. It has previously been recorded from the South Equatorial Drift and the Galapagos Eddy.

Craterella obscura (Brandt) Kofoid and Campbell.

Cyttarocylis obscura, Brandt 1906, pl. 62, fig. 1.
Craterella obscura, Kofoid and Campbell 1929, p. 196.

Area IV: St. 77.
» V: St. 88.

Single specimens were recorded from the Newfoundland Banks and at Station 88 north of the Azores. The species is previously known from the coast of Brazil.

Craterella urceolata (Ostenfeld) Kofoid and Campbell.

Tintinnus urceolatus, Ostenfeld 1899, p. 437, fig. 2 g.
Craterella urceolata, Kofoid and Campbell 1929, p. 196.

Area I: St. 10.
» II: St. 37.
» III: St. 49c.
» V: Sts. 81a—85, 87—90.

This north Atlantic species was common along the northern route of the "Michael Sars", from Newfoundland to Ireland. Besides it occurred singly north of Spain, off Cape Bojador and between the Canaries and the Azores.

Cyttarocylis cassis (Haeckel) Fol.

Cyttarocylis cassis var. a, Brandt 1906, pl. 34, fig. 2.
Cyttarocylis cassis, Kofoid and Campbell 1929, p. 112.

Area II: Sts. 18—20, 22—25, 27—31, 34, 35, 39, 40.
» III: Sts. 46, 49c—51, 54, 59—65, 68.

Length 175—210 μ.

This warm-water species was common on the route from Gibraltar to Cape Bojador and likewise along the southern Atlantic route.

Cyttarocylis conica (Brandt) Kofoid and Campbell.

Cyttarocylis cassis var. b *conica*, Brandt 1906, pl. 34, fig. 6.
Cyttarocylis conica, Kofoid and Campbell 1929, p. 112.

Area III: Sts. 64, 65.

At the Sargasso Sea station 64 this species occurred in all the three samples, and a single specimen was observed from the next station to the north. It has also previously been recorded from the Sargasso Sea and, besides, from the North and the South Equatorial Current.

Cyttarocylis longa Kofoid and Campbell.

Cyttarocylis plagiostoma var. a, Brandt 1906, pl. 36, fig. 1.
Cyttarocylis longa, Kofoid and Campbell 1929, p. 113.

Area II: Sts. 22, 25, 27, 28, 30, 31, 34, 35, 39, 40.
» III: Sts. 44—46, 49c—54, 58, 59, 63, 64, 68.
» V: St. 88.

Length about 120 μ.

Like *C. cassis* this is a warm-water species, distributed in the Mediterranean as well as in the Atlantic, the Pacific, and the Indian Ocean. In the "Michael Sars" area it had about the same occurrence as the above mentioned species, but it was also observed at Station 88, north of the Azores.

Cyttarocylis magna (Brandt) Kofoid and Campbell.

Cyttarocylis cassis var. c *magna*, Brandt 1906, pl. 34, fig. 3.
Cyttarocylis magna, Kofoid and Campbell 1929, p. 114.

Area II: Sts. 23, 27—30, 32, 34, 40.
» III: St. 46.

Length about 300 μ.

This species occurred sparsely from the Spanish Bay to Cape Bojador and also at one station west of the Canaries. It is previously known from the Sargasso Sea, the Benguela Current, the North Equatorial Current of the Atlantic, between Australia and the Tonga Islands, and from Mutsu Bay (Japan).

Dadayiella acuta (Jørgensen) Kofoid and Campbell.

Amphorella ganymedes f. *acuta*, Jørgensen 1924, p. 17, fig. 22 d.
Dadayiella acuta, Kofoid and Campbell 1929, p. 320.

Area III: St. 49c.

One single specimen was observed in the 500—200 m sample from Station 49c between the Canaries and the Azores. It has previously been recorded from the Mediterranean.

Dadayiella ganymedes (Entz, Sr.) Kofoid and Campbell.
Text-fig. 11 a.

Dadayiella ganymedes, Kofoid and Campbell 1929, p. 321.

Area II: Sts. 34, 39.
» III: Sts. 49c, 54, 60—65.
» V: Sts. 81a—85, 87—92.

All the specimens had some of the ribs prolonged above the oral rim as shown on Fig. 11 a.

The species is represented in the Mediterranean, the Atlantic, Pacific and the Indian Ocean. In the "Michael Sars" material it occurred off the Canary Islands and Cape Bojador, at a few stations along the southern route and was common along the northern Atlantic route. It always occurred sparsely, often singly.

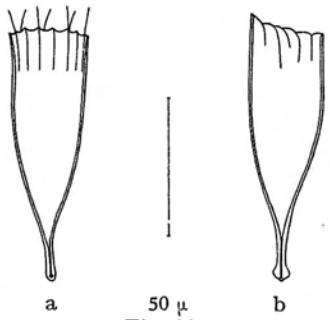

Fig. 11.
a. *Dadayiella ganymedes*. St. 49 c. b. *D.* sp. St. 34.

Dadayiella sp.
Text-fig. 11 b.

Area II: St. 34.
» III: St. 66.

In the 500—200 m sample from Station 34, north of the Canary Islands, as well as in the 100—0 m sample from Station 66, south of the Newfoundland Banks, there occurred some specimens which were probably defect, showing a rather slack and pressed oral part.

I did no attempt to define them more closely, but recorded them as *Dadayiella* sp. (They show most accordance with *Tintinnus bulbosus*, BRANDT 1906, pl. 70, fig. 3 in the development of the aboral part.)

Daturella gaussi Kofoid and Campbell.

Tintinnus datura, Laackmann 1910, pl. 50, fig. 4.
Daturella gaussi, Kofoid and Campbell 1929, p. 344.

Area V: St. 90.

One single specimen was observed in the 200—100 m sample from Station 90, south-west of Ireland. The species is otherwise known from the border of the Guinea Current and from the South Equatorial Current.

Dadurella magna Kofoid and Campbell.

Daturella magna, Kofoid and Campbell 1929, p. 343, fig. 662 and p. 345.

Area III: St. 64.

One single specimen was observed at the Sargasso Sea station 64; it has previously been recorded from the California Current.

Daturella stramonium Kofoid and Campbell.

Daturella stramonium, Kofoid and Campbell 1929, p. 343, fig. 664 and p. 346.

Area III: St. 64.

This species, with a wide distribution in the Pacific, was in the "Michael Sars" material observed only at the Sargasso Sea station 64.

Daturella sp.

Area II: Sts. 18, 28.

The specimens, only found singly at two stations in the Gibraltar region, were not identical with any of the KOFOID and CAMPBELL species. As it was very difficult to decide whether the lorica was defect or not, I have confined myself to referring them to the genus *Daturella*.

Dictyocysta dilatata (Brandt) Kofoid and Campbell.

Dictyocysta mitra var. a *dilatata*, Brandt 1906, pl. 1, fig. 4.
Dictyocysta dilatata, Kofoid and Campbell 1929, p. 288.

Area I: St. 10.
» II: Sts. 23—25, Pump sample 8/5, Sts. 30, 34, 35, 37—40.
» III: Sts. 44—46, 49c—54, 58, Fayal, 59—69.
» IV: St. 80.
» V: Sts. 81a—85, 87, 88.

Length about 70 μ.

This species was fairly common from the Spanish Bay along the whole route back to Station 88 north of the Azores. It appeared in abundance at Station 39 off Cape Bojador and at Station 60 west of the Azores. The species is previously known from the margin of the Labrador and the Florida Currents as well as from the Sargasso Sea and the Peruvian Current.

Dictyocysta duplex Brandt.
Text-fig. 12 a.

Dictyocysta duplex, Kofoid and Campbell 1929, p. 289.

Area I: St. 7.
» II: Sts. 19, 22, 39, 40.
» III: St. 60.

The single specimen observed at station 7 south-west of Ireland was not so thickly set with coccoliths as the others, but the general shape agreed well with that of the rest, and the bowl showed no "windows".

Length 70—75 μ.

This species, distributed in the Mediterranean, the Atlantic and the Pacific Oceans, was also here represented at the Mediterranean station, in the Spanish Bay, off Cape Bojador and at Station 60 west of the Azores.

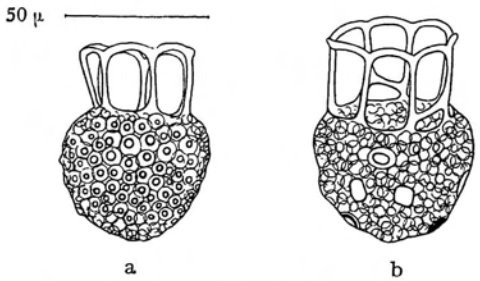

Fig. 12.
a *Dictyocysta duplex*. St. 19. b. *D. nidulus*. St. 3.

Dictyocysta elegans Ehrenberg.

Dictyocysta elegans, Brandt 1906, pl. 1, fig. 8.
Dictyocysta elegans, Kofoid and Campbell 1929, p. 289.

Area I: St. 10.
» II: Sts. 11, 18, 22—25, 27, 29, 34, 35.
» III: Sts. 46, 50, 53, 58, 60, 65, 66.
» IV: St. 80.

The species appeared at about the same stations as *D. dilatata*, but was missing at Cape Bojador and along the northern Atlantic route. It never occurred in abundance but often singly. According to JØRGENSEN (1924) its chief area of distribution is in the northern Atlantic.

Dictyocysta minor (Jørgensen) Kofoid and Campbell.

Dictyocysta mitra var. c, Brandt 1906, pl. 1, fig. 5.
Dictyocysta minor, Kofoid and Campbell 1929, p. 295.

Area II: Sts. 28, 30, 31.
» III: Sts. 44, 46.

Length about 50 μ.

This species, known from the Mediterranean, the Atlantic and the Pacific, was observed west and south-west of Gibraltar and at two stations west of the Canary Islands.

Dictyocysta mülleri (Imhof) Jørgensen.

Dictyocysta elegans var. e *mülleri*, Brandt 1906, pl. 2, fig. 5.
Dictyocysta mülleri, Kofoid and Campbell 1929, p. 296.

Area III: Sts. 46, 49c, 64.

This species occurred sparsely at two stations west of the Canary Islands and at the Sargasso Sea station 64. It is previously known from the same area.

Dictyocysta nidulus Kofoid and Campbell.
Text-fig. 12 b.

Dictyocysta nidulus, Kofoid and Campbell 1929, p. 297.

Area I: Sts. 3, 7, 10.
» II: Sts. 12, 13.

On most of the specimens two of the windows were divided as shown in Fig. 12b. At Stations 10 and 13, however, there occurred single specimens with only one divided window.

Length about 75 μ.

This species was observed merely on the first part of the "Michael Sars" route, from Ireland to Portugal.

The type locality is in the outskirts of the Florida and the Labrador Currents.

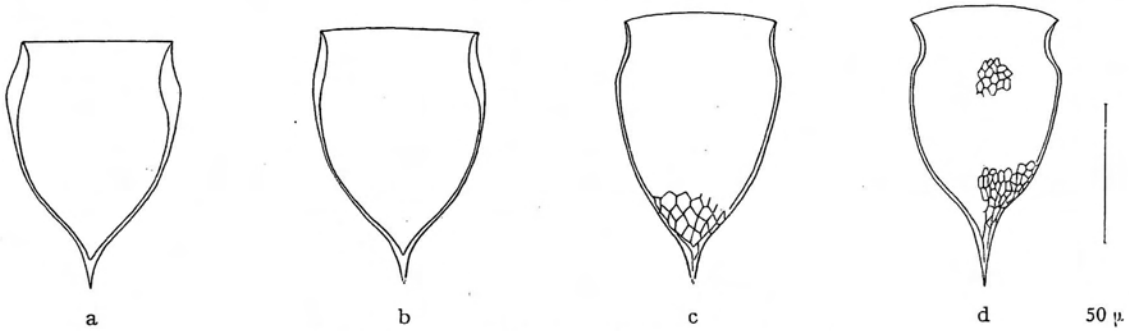

Fig. 13. *Epiplocylis acuminata*. a—b. St. 60. c—d. St. 35.

Dictyocysta reticulata Kofoid and Campbell.

Dictyocysta templum var. b, Brandt 1906, pl. 3, fig. 8.
Dictyocysta reticulata, Kofoid and Campbell 1929, p. 300.

Area I: Sts. 3, 4, 7—10.
» II: Sts. 11—13, 18, 20, 22—25. 27—29, 31, 32, 34, 35, 39, 40.
» III: Sts. 44—46, 49c—54, 58, 59—69.
» V: Sts. 81a, 85, 87, 92.

Length 70—80 µ.

This species was not recorded from the Newfoundland Banks; otherwise it was fairly common along the first part of the route, rare along the northern Atlantic route.

The species has been observed in the Mediterranean and in the Indian and the Pacific Oceans besides in the Atlantic.

Dictyocysta speciosa (Jørgensen) Kofoid and Campbell.

Dictyocysta elegans var. *speciosa*, Jørgensen 1924, p. 82, fig. 93.
Dictyocysta speciosa, Kofoid and Campbell 1929, p. 300.

Area I: Sts. 3, 7, 10.
» II: Sts. 12, 18, 22, 34, 39, 40.
» III: Sts. 44, 59—64.
» V: Sts. 81a—85, 87—92.

Length 77—80 µ.

Unlike the preceding species this one was most common along the northern Atlantic route and abundant at Station 90. But also this species was lacking on the Newfoundland Banks.

The type locality is in the Mediterranean.

Epiplocylis acuminata (Daday) Jørgensen.
Text-fig. 13.

Ptychocylis acuminata var. a *semireticulata*, Brandt 1906, pl. 58, fig. 9.
Epiplocylis acuminata, Jørgensen 1924, p. 56.

Area II: Sts. 25, 27, 30, 31, 34, 37—40.
» III: Sts. 44, 46, 49c—51, 53, 54, 59, 60, 63—66.
» IV: St. 80.
» V: Sts. 81a, 83, 85, 87.

I agree with JØRGENSEN in the limitation of this species, which is characterized by a swollen part a little below the mouth and by the coarse reticulation being extended up to this part (JØRGENSEN 1924). The specimens looked rather uniform, but on closer examination they showed some variation.

The typical form (Fig. 13a) showed the closest agreement with the above mentioned figure of BRANDT. The wall was in most cases thickened in the swollen part of the lorica, but the thickness varied. The shape showed in Fig. 13b was not rare. At Station 35 specimens were observed with no partial wall-thickening at all (Fig. 13c), and in the same samples (35, 100—0 m and 200—100 m) there occurred specimens which were dilated above the swollen part so that the oral rim had about the same diameter as the swollen part (Fig. 13d).

Length 80—98 µ.

This widely distributed species was common from Gibraltar to Cape Bojador and along the entire southern Atlantic route, abundant at Stations 39 and 60. It also occurred on the last Bank station and along the first part of the northern Atlantic route.

Epiplocylis acuta Kofoid and Campbell.

Epiplocylis acuta, Kofoid and Campbell 1929, p. 174, fig. 322 and p. 175.

Area III: St. 65.

One single specimen was observed in the 200—0 m sample from Station 65 on the border of the Sargasso Sea.

The species has previously been recorded from different parts of the Pacific Ocean.

Epiplocylis blanda (Jørgensen) Kofoid and Campbell.

Ptychocylis undella var. b, Brandt 1906, pl. 61, fig. 3.
Epiplocylis blanda, Kofoid and Campbell 1929, p. 176.

Area II: St. 39.
» III: Sts. 46, 64, 68.

One single specimen was observed off Cape Bojador, otherwise it occurred at one station west of the Canary Islands and at two stations on the border of the Sargasso Sea where it was rather abundant. The species has previously been recorded from the Sargasso Sea, the Mediterranean and also from the Great Barrier Reef (Australia).

Epiplocylis brandti Kofoid and Campbell.

Ptychocylis reticulata, Brandt 1906, pl. 58, fig. 1.
Epiplocylis brandti, Kofoid and Campbell 1929, p. 177.

Area III: Sts. 46, 63.

This species occurred west of the Canary Islands and on the border of the Sargasso Sea. It is previously known from the southern Atlantic and from the Mediterranean.

Epiplocylis constricta Kofoid and Campbell.

Ptychocylis undella var. c, Brandt 1906, pl. 59, fig. 2.
Epiplocylis constricta, Kofoid and Campbell 1929, p. 177.

Area III: St. 46.

In the 500—200 m sample from Station 46 west of the Canary Islands this species was observed together with *E. acuminata*, *E. blanda* and *E. brandti*. Previously it has only been recorded from the Pacific.

Epiplocylis nervosa (Cleve) Jørgensen.

Ptychocylis nervosa, Brandt 1906, pl. 55, fig. 6.
Epiplocylis nervosa, Kofoid and Campbell 1929, p. 173.

Area III: St. 64.

This characteristic species was in the "Michael Sars" material only represented at the Sargasso Sea station 64. From this area it has also previously been recorded.

Favella arcuata (Brandt) Jørgensen.

Cyttarocylis arcuata, Brandt 1906, pl. 40, fig. 2.
Favella arcuata, Kofoid and Campbell 1929, p. 150.

Area II: Sts. 37, 38.

The genus *Favella* was very sparsely represented in the "Michael Sars" material and occurred only at the stations along the coast banks of Africa. The species observed have all of them previously been recorded from the same area.

Favella arcuata occurred off Cape Bojador.

Favella attingata Kofoid and Campbell.

Cyttarocylis serrata var. a, Brandt 1906, pl. 40, fig. 1.
Favella attingata, Kofoid and Campbell 1929, p. 150.

Area II: Pump sample 25/4.

Length 265 μ.

In this sample from the Strait of Gibraltar there was observed one single specimen belonging to this species.

Favella serrata (Møbius) Jørgensen.

Cyttarocylis serrata, Brandt 1906, pl. 39, fig. 6.
Favella serrata, Kofoid and Campbell 1929, p. 156.

Area II: Sts. 18, 37.

Length 245—295 μ.

This species was recorded from the Strait of Gibraltar as well as from Cape Bojador.

Helicostomella subulata (Ehrenberg) Jørgensen.

Helicostomella subulata, Jørgensen 1924, p. 25, fig. 26 b.
Helicostomella subulata, Kofoid and Campbell 1929, p. 107.

Area II: Sts. 36—39.
» V: St. 103.

One specimen of this neritic species was observed at the Shetland station 103, and off Cape Bojador it was rather frequent.

Metacylis lucasensis Kofoid and Campbell.

Metacylis lucasensis, Kofoid and Campbell 1929, p. 198, fig. 372 and p. 199.

Area III: St. 60.

This species, recorded from the California Current (by KOFOID and CAMPBELL), was observed in the 100—0 m sample from Station 60 between the Azores and the Sargasso Sea.

Ormosella bresslaui Kofoid and Campbell.

Ormosella bresslaui, Kofoid and Campbell 1929, p. 322, fig. 616 and p. 323.

Area III: St. 54.

This species was observed in the 200—0 m sample from Station 54 south of the Azores. It is previously known from the South Equatorial Drift of the Eastern Tropical Pacific.

Ormosella sp.

Area III: St. 60.

One defect specimen in the 500—200 m sample from Station 60, between the Azores and the Sargasso Sea, could not be classified as belonging to any definite species.

Parafavella denticulata (Ehrenberg).

Area IV: Sts. 70, 76, 77, 80.
» V: St. 103.

In the "Michael Sars" material I have only distinguished between denticulate and edentate forms of the genus *Parafavella* and recorded them as *P. denticulata* (Ehrenberg) and *P. edentata* (Brandt).

P. denticulata was represented at all four stations on the Newfoundland Banks, and at the Shetland station it occurred in abundance.

Parafavella edentata (Brandt).

Area III: St. 66.
» IV: Sts. 70, 77, 80.
» V: Sts. 81a, 85, 87, 92, 97, 103.

P. edentata was more frequent than *P. denticulata*. At Station 66 south of the Newfoundland Banks it was rather abundant, it was common on the Banks, and not rare along the route from the Banks to Shetland.

Parundella aculeata (Jørgensen) Kofoid and Campbell. Text-fig. 14.

Parundella aculeata, Kofoid and Campbell 1929, p. 226.

Area I: Sts. 3, 4, 7, 10.
» II: Sts. 11, 18, 23, 27, 29, 32, 34, 36, 38.
» III: St. 66.
» V: St. 103.

According to JØRGENSEN (1924) this species may be furnished with edges or ribs from the upper portion of the caudal prolongation up to the lower part of the lorica, but the ribs are generally narrow and inconspicuous. On most of the "Michael Sars" specimens the ribs were very conspicuous but not so large as shown on BRANDT's figure (1906, pl. 64, fig. 14), and there was always more than four of them.

The lorica generally looked very dark owing to a thick agglomeration of minute "foreign particles". These particles may be dissolved with diluted acid. Fig. 14 a shows a specimen set with foreign particles, Fig. 14 b another specimen after elucidation.

Length 122—185 μ.

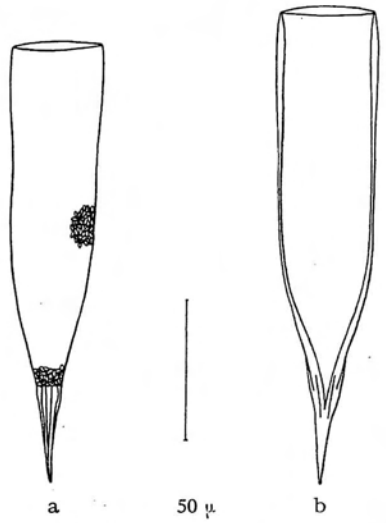

Fig. 14. *Parundella aculeata*. St. 3.

The species, previously recorded from the Mediterranean and scattered localities in the Atlantic, was fairly common from Ireland to Cape Bojador. Otherwise it occurred at a single station between the Sargasso Sea and the Newfoundland Banks, and one single specimen was observed at the Shetland station.

Parundella acuta Kofoid and Campbell.

Parundella acuta, Kofoid and Campbell 1929, p. 227, fig. 434 and p. 226.

Area II: St. 40.

Some few specimens of this species, very different from all other *Parundella* species in the "Michael Sars" material, were observed in the 1000—200 m sample from Station 40, between Fuerteventura (the Canaries) and the African coast.

KOFOID and CAMPBELL record it from the South Equatorial Drift of the Pacific.

Parundella attenuata Kofoid and Campbell.

Undella messinensis var. a, Brandt 1906, pl. 64, fig. 15.
Parundella attenuata, Kofoid and Campbell 1929, p. 226.

Area I: Sts. 7, 10.
» II: Sts. 18, 20, 25, 38.

Length 165—190 μ.

This species occurred between Ireland and Spain, in the Spanish Bay, in the Strait of Gibraltar, and off Cape Bojador. Previously it has been recorded from the Mediterranean and the southern Atlantic and Pacific.

Parundella caudata (Ostenfeld) Kofoid and Campbell.

Tintinnus caudatus, Ostenfeld 1899, p. 437, fig. 2 e.
Parundella caudata, Kofoid and Campbell 1929, p. 228.

Area I: Sts. 3, 4, 7—10.
» II: Sts. 11,13.

The lorica was often thickly set with similar particles to those seen on *Parundella aculeata*. They were also dissolved with diluted acid.

Length 70—126 μ.

This cold-temperated species was exclusively found at the first stations between Ireland and Portugal.

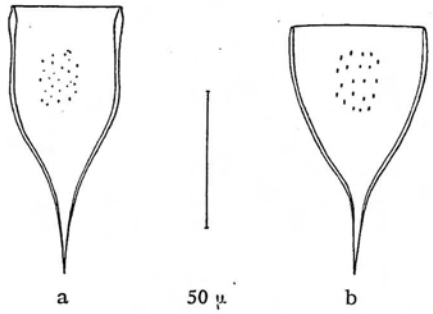

Fig. 15. a. *Parundella difficilis*. St. 10.
b. *P. lata*. St. 10.

Parundella difficilis Kofoid and Campbell.
Text-fig. 15 a.

Parundella difficilis, Kofoid and Campbell 1929, p. 228.

Area I: St. 10.
» II: Sts. 20, 22, 34.

The lorica was also here often set with minute particles.

Length 97—105 μ.

A few specimens of this species, which has previously been recorded from the Peruvian Current, the South Equatorial Drift, and the Galapagos and the Easter Island Eddies, were observed north of Spain, in the Spanish Bay and near the Canary Islands.

Parundella grandis Kofoid and Campbell.

Undella lachmanni var. a, Brandt 1906, pl. 64, fig. 27.
Parundella grandis, Kofoid and Campbell 1929, p. 229.

Area V: Sts. 81a, 84, 85, 87—90.

The species was fairly common along the northern route of the "Michael Sars". It has previously been recorded from the Florida Current.

Parundella lata n. sp.
Text-fig. 15 b.

Area I: St. 10.

In the 1000—500 m sample from Station 10 north of Spain there occurred a few specimens differing from all the KOFOID and CAMPBELL species. At present it must be regarded as a new species. The material does not permit any exact description, only an indication of the main characters may be added to the figure.

Lorica wide chalice-shaped, about 1.9 oral diameter in length. Slightly dilated just below the mouth, then tapering, with convex outlines, and ending in an acute slender caudal prolongation, about 0.33 total length in length. Lamellae along the lorica proper at an even distance, narrowing gradually in the upper third of the caudal prolongation, then merging into a single thin wall. Wall set with minute foreign particles, which are dissolved with action of acid.

Length 90—92 μ.

Parundella lohmanni Jørgensen.

Undella lohmanni, Jørgensen 1924, p. 39, fig. 54.
Parundella lohmanni, Kofoid and Campbell 1929, p. 231.

Area II: Sts. 12, 18, 28, 29, 34, 35, 40.
» III: Sts. 46, 49c, 50, 53, 54, 58, Fayal, 59—64.
» IV: Sts. 70, 80.
» V: Sts. 81a, 84, 85, 87—92.

With the exception of *P. longa* this was the most common of the *P.* species in the material. It was first observed off Cape Finisterre (Spain). On the whole route from Gibraltar to Ireland it occurred regularly.

JØRGENSEN (1924) records it from the Mediterranean.

Parundella longa (Jørgensen) Kofoid and Campbell.

Undella aculeata f. *longa*, Jørgensen 1924, p. 39, fig. 53.
Parundella longa, Kofoid and Campbell 1929, p. 231.

Area II: Sts. 18, 28, 30, 31, 34, 35, 39, 40.
» III: Sts. 46, 49c—53, 59—64, 66.
» V: Sts. 81a, 84, 85, 87—92.

This species, which is nearly allied to *P. aculeata*, may also be set with similar foreign particles.

Length 150—175 μ.

The species was very common on the whole route from Gibraltar to Ireland, but was missing on the Newfoundland Banks. It occurred alternately with *P. aculeata* in the "Michael Sars" material. Station 66, between the Sargasso Sea and the Newfoundland Banks, was the only

station where the 2 species were observed in the same sample (100—0 m).

JØRGENSEN (1924) records it from the Mediterranean.

Parundella messinensis (Brandt) Jørgensen.

Undella messinensis, Brandt 1906, pl. 64, fig. 30.
Parundella messinensis, Kofoid and Campbell 1929, p. 232.

Area II: St. 18.

Length about 155 μ.

Two specimens probably belonging to this species were observed in the Strait of Gibraltar. It is previously known from the Mediterranean.

Petalotricha ampulla (Fol) Kent.

Petalotricha ampulla, Jørgensen 1924, p. 89, fig. 99.
Petalotricha ampulla, Kofoid and Campbell 1929, p. 203.

Area II: Sts. 18—20, 25, 27—30, 35, 39, 40.
» III: Sts. 58—65.
» IV: St. 80.
» V: Sts. 81a—83, 85, 87—90.

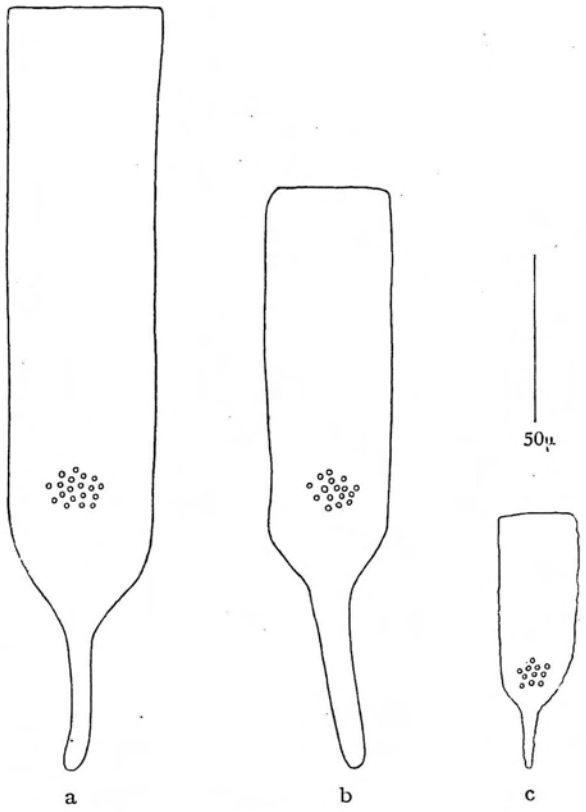

Fig. 16.
Poroecus apiculatus. a. St. 64. b. St. 68. c. St. 54.

This widely distributed species was fairly common from Gibraltar to Cape Bojador. It occurred also from the Azores to the Sargasso Sea and from the Newfoundland Banks to Ireland.

Petalotricha major (Jørgensen) Kofoid and Campbell.

Petalotricha ampulla var. b, Brandt 1906, pl. 62, fig. 8.
Petalotricha major, Kofoid and Campbell 1929, p. 204.

Area II: Sts. 23, 30, 34.
» III: Sts. 44—46, 49c—51, 58, 63—68.
» V: St. 81a.

This species was found, sparse but rather regularly scattered, along the whole southern route from the Spanish Bay to the Newfoundland Banks. It was also observed at the first station, 81a, on the northern Atlantic route.

The species is known from the Mediterranean, the Atlantic north to the Sargasso Sea, and the Indian Ocean.

Poroecus apiculatus (Cleve) Cleve.
Text-fig. 16.

Poroecus apiculatus, Kofoid and Campbell 1929, p. 118.

Area III: Sts. 54, 59, 64, 68.

The specimens varied considerably both in form and size, as shown in the figures (16a—c). All of them were thickly covered with small coccoliths.

Length 85—225 μ.

The species was limited to the area between the Azores and the Newfoundland Banks, and was very sparse. It is known from the Mediterranean, the southern Indian Ocean and the Atlantic north to the Azores.

Poroecus curtus Kofoid and Campbell.

Poroecus curtus, Kofoid and Campbell 1929, p. 117, fig. 224 and p. 118.

Area III: Sts. 54, 59, 63.

Also this species was thickly covered with coccoliths. It occurred still more sparsely than the preceding species in the same area. Previously it has been recorded from the Pacific.

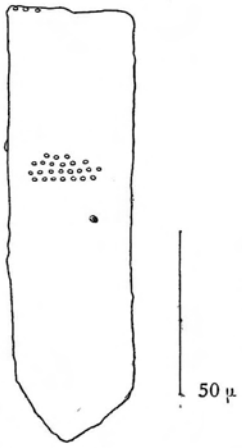

Fig. 17. *Poroecus* sp. (?). St. 49 c.

Poroecus sp. (?)
Text-fig. 17.

Area III: St. 49c.

One specimen most probably belonging to this genus was observed in the 200—100 m sample from Station 49c between the Canaries and the Azores. Unfortunately it disappeared before it could be more closely examined.

Length 135 μ.

Proplectella acuta (Jørgensen) Kofoid and Campbell.

Undella subacuta f. *acuta*, Jørgensen 1924, p. 39, fig. 43 a.
Proplectella acuta, Kofoid and Campbell 1929, p. 273.

Area II: Sts. 27, 28, 34, 39, 40.
» III: Sts. 49c, 60.
» V: St. 81a.

Length 56—57 μ.

This species never occurred in any abundance, but most frequently singly. It was observed in the Spanish Bay, near the Canary Islands, at Cape Bojador, at one station between the Canaries and the Azores, at one between the Azores and the Sargasso Sea, and at the first station on the northern route.

It has previously been recorded from the Mediterranean and the Great Barrier Reef (Australia).

Proplectella angustior (Jørgensen) Kofoid and Campbell.

Undella claparèdei var. *angustior*, Jørgensen 1924, p. 39, fig. 42 d.
Proplectella angustior, Kofoid and Campbell 1929, p. 275.

Area II: St. 39.

Together with *P. acuta* and *P. fastigata* there occurred in the 220—110 m sample from Station 39, off Cape Bojador, a specimen, which was classified as belonging to this species. It is known from the South Atlantic, the Mediterranean and the Eastern Tropical Pacific.

Proplectella claparèdei (Entz, Sr.) Kofoid and Campbell.

Undella claparedei, Brandt 1906, pl. 64, fig. 2.
Proplectella claparèdei, Kofoid and Campbell 1929, p. 276.

Area I: Sts. 9, 10.
» II: St. 11, Pump sample 25/4, Sts. 18—20, 22—25, 27—31, 34—36, 40.
Area III: Sts. 46, 50—54, 58, Fayal, 59—68.
» IV: St. 80.
» V: Sts. 81a—83, 85, 87—92.

At Station 11, 50—0 m there occurred specimens differing a little from the others in shape. They show more agreement with the figure of Brandt (1906, pl. 64, fig. 1). See Text-fig. 18.

Length 60—85 μ.

This common warm-water species occurred in abundance at Stations 25 and 27 in the Spanish Bay, likewise at Stations 46 and 50 between the Canaries and the Azores. Otherwise it was regularly distributed along the whole route from Station 9 to Station 92.

Fig. 18. *Proplectella claparèdei*. St. 11.

Proplectella ellipsoida Kofoid and Campbell.

Proplectella ellipsoida, Kofoid and Campbell 1929, p. 274, fig. 538 and p. 277.

Area II: Sts. 28, 30, 31, 34.
» III: Sts. 46, 50—54, 58, 59, 60, 64.
» V: Sts. 87—90.

This species, only known from the Pacific, occurred along the coast of Africa. In addition, it was fairly often recorded from the southern route and the latter part of of the northern route.

It was found together with *P. acuta* only at Station 60, between the Azores and the Sargasso Sea, otherwise they occurred alternately.

Proplectella fastigata (Jørgensen) Kofoid and Campbell.

Undella claparèdei f. *fastigata*, Jørgensen 1924, p. 39, fig. 42 b.
Proplectella fastigata, Kofoid and Campbell 1929, p. 278.

Area II: Sts. 27, 35, 38—40.
» III: Sts. 44, 46, 49c—54, 59—65.
» IV: St. 80.
» V: St. 85.

Together with *P. claparèdei* this widely distributed species occurred in abundance at Stations 46 and 50 between the Canaries and the Azores. Further it was recorded from the Spanish Bay, around the Azores and off Cape Bojador. On the southern Atlantic route it was common, and it was also observed at the last station on the Banks and at one station on the first part of the northern route.

Proplectella ovata (Jørgensen) Kofoid and Campbell.

Undella claparèdei f. *ovata*, Jørgensen 1924, p. 39, fig. 42 c.
Proplectella ovata, Kofoid and Campbell 1929, p. 280.

Area III: St. 64.

One single specimen occurred in the 100—0 m sample from the Sargasso Sea station 64. It is also previously known from the same area.

Proplectella praelonga Kofoid and Campbell.

Proplectella praelonga, Kofoid and Campbell 1929, p. 274, fig. 527 and p. 282.

Area III: St. 64.

One single specimen, classified as belonging to this species, was observed in the 200—0 m sample from the Sargasso Sea station 64. The species has previously been recorded from the Peruvian Current and the Eastern Tropical Pacific.

Proplectella subcaudata (Jørgensen) Kofoid and Campbell.

Undella subacuta var. *subcaudata*, Jørgensen 1924, p. 39. fig. 43 b.
Proplectella subcaudata, Kofoid and Campbell 1929, p. 283.

Area II: St. 34.

This species occurred singly in the 200—100 m sample from Station 34 off Lanzarote (Canary Is.). JØRGENSEN records it from the Mediterranean and the Atlantic south-west of England.

Proplectella tenuis Kofoid and Campbell.

Undella claparèdei var. c, Brandt 1906, pl. 64, fig. 5.
Proplectella tenuis, Kofoid and Campbell 1929, p. 283.

Area II: St. 25.

In the 200—0 m sample from Station 25 in the outer part of the Spanish Bay area *P. claparèdei* occurred in abundance. Among them were observed some specimens, which must be classified as *P. tenuis*.

This species has previously been recorded from the tropical Atlantic, the Indian Ocean south of Madagascar, and from the Great Barrier Reef (Australia).

Ptychocylis obtusa Brandt.

Ptychocylis obtusa, Brandt 1906, pl. 57, fig. 8.
Ptychocylis obtusa, Kofoid and Campbell 1929, p. 188.

Area III: St. 66.
» IV: Sts. 70—80.
» V: St. 81a.

This species, which is common in the North Atlantic, was found exclusively on the Newfoundland Banks and in their nearest neighbourhood. It was especially abundant at Station 70.

It is also known from the Mutsu Bay and the Sea of Okhotsk.

Ptychocylis urnula (Claparède and Lachmann) Brandt.

Ptychocylis urnula, Brandt 1906, pl. 57, fig. 1.
Ptychocylis urnula, Kofoid and Campbell 1929, p. 189.

Area III: St. 66.
» IV: Sts. 70—80.
» V: St. 103.

This is a typical North Atlantic species with about the same occurrence as the preceding species. But it was also observed at the Shetland Station 103.

Rhabdonella amor (Cleve) Brandt.

Cyttarocylis amor, Cleve 1899, p. 971 (4).
Rhabdonella amor, Kofoid and Campbell 1929, p. 212.

Area I: St. 10.
» II: Sts. 11, 34, 35, 39.
» III: Sts. 50, 54, 60, 68.
» IV: St. 80.
» V: Sts. 81a, 84, 85, 87—90.

Length 56—62 μ.

This widely distributed species occurred, but sparsely, north of Spain, near the Canaries, off Cape Bojador, at 4 stations on the southern route, at the last Bank Station and at 7 stations on the northern route.

Rhabdonella brandti Kofoid and Campbell.

Ptychocylis (*Rhabdonella*) *amor* var. a *cuspidata*, Brandt 1906, pl. 54, fig. 3.
Rhabdonella brandti, Kofoid and Campbell 1929, p. 213.

Area III: Sts. 49c, 50.

Between the Canaries and the Azores this species was observed at 2 stations. It has previously been recorded from the warm parts of the Atlantic, the Karajak Fiord, the Mediterranean, the Red Sea, off Borneo and from the Great Barrier Reef (Australia).

Rhabdonella chavesi (Brandt) Kofoid and Campbell.

Ptychocylis (*Rhabdonella*) *spiralis* var b *chavesi*, Brandt 1906, pl. 53, fig. 3.
Rhabdonella chavesi, Kofoid and Campbell 1929, p. 213.

Area II: Sts. 34, 39.
» III: Sts. 44, 46, 48, 51, 63—65.
» V: St. 88.

In the surface sample from St. 48 west of the Canary Islands this species occurred in abundance. It was further represented near the Canaries, off Cape Bojador, between the Canaries and the Azores, on the border of the Sargasso Sea and at Station 88 north of the Azores.

It has also previously been recorded from the same area.

Rhabdonella conica Kofoid and Campbell.

Rhabdonella conica, Kofoid and Campbell 1929, p. 210, fig. 418 and p. 214.

Area II: Pump sample 22/4, Sts. 19, 20, 25, 31, 39.
» III: Sts. 44, 46, 63, 64.
» V: Sts. 88—92.

Length 270—410 μ.

This species occurred in the outskirts of the Sargasso Sea. Otherwise it was limited to the eastern part of the "Michael Sars" area. It was observed along the coast of Portugal, at the Mediterranean station, along the African coast, west of the Canaries, and at 3 stations on the latter part of the northern route.

It is known from the margins of the Labrador and the Florida Currents in the Atlantic, the Mediterranean, and from several places in the Pacific.

Rhabdonella elegans Jørgensen.

Rhabdonella elegans, Jørgensen 1924, p. 59, fig. 67.
Rhabdonella elegans, Kofoid and Campbell 1929, p. 215.

Area III: Sts. 44, 46, 50, 51, 64.

It occurred between the Canaries and the Sargasso Sea (Sts. 44—51) and at the Sargasso Sea station 64.

JØRGENSEN (1924) records it from the Mediterranean.

Rhabdonella hebe (Cleve) Kofoid and Campbell.

Cyttarocylis Hebe, Cleve 1899, p. 971 (5 right).
Rhabdonella hebe, Kofoid and Campbell 1929, p. 216.

Area II: Pump sample 5/5, Sts. 22, 35, 36.
» III: Sts. 46, 64.
» V: Sts. 88, 90, 92.

Length 245—285 μ.

The species was observed in the Spanish Bay, near the Canaries, off Cape Bojador, at the Sargasso Sea station 64 and along the latter part of the northern route.

BRANDT (1907) records it from the Florida Current and the Sargasso Sea.

Rhabdonella henseni (Brandt) Brandt.

Rhabdonella spiralis var. e *henseni*, Brandt 1906, pl. 54, fig. 2.
Rhabdonella henseni, Kofoid and Campbell 1929, p. 216.

Area II: Sts. 35, 38—40.
» III: Sts. 46, 48.

This species, which alternated with *R. hebe*, occurred around the Canaries and off Cape Bojador. It was especially abundant at St. 48 west of the Canaries. BRANDT (1907) records it from the South Equatorial Drift of the Pacific.

Rhabdonellopsis apophysata (Cleve) Kofoid and Campbell.

Ptychocylis (*Rhabdonella*) *apophysata* var. b, Brandt 1906, pl. 51, fig. 1.
Rhabdonellopsis apophysata, Kofoid and Campbell 1929, p. 221.

Area III: St. 48.

A single specimen in the surface sample at Station 48 west of the Canaries was referred to this species.

It has previously been recorded from the same area.

Rhabdonellopsis longicaulis Kofoid and Campbell.

Rhabdonellopsis longicaulis, Kofoid and Campbell 1929, p. 222, fig. 419 and p. 223.

Area II: Sts. 34, 39.
» III: Sts. 46, 64.

This species was observed north and west of the Canaries, off Cape Bojador, and at the Sargasso Sea station. Previously it has only been recorded from the Pacific.

Salpingacantha ampla Kofoid and Campbell.

Salpingacantha ampla, Kofoid and Campbell 1929, p. 356, fig. 689.

Area III: St. 54.

It was previously recorded from the South Equatorial Drift of the Pacific, and was here only observed in one single sample (St. 54, 200—0 m) south of the Azores.

Salpingacantha undata (Jørgensen) Kofoid and Campbell.

Salpingacantha undata, Kofoid and Campbell 1929, p. 356, fig. 695, and p. 358.

Area I: St. 9.
» V: St. 92.

This northern species was found between Ireland and Spain and at the last deep-sea station on the northern Atlantic route.

Salpingacantha sp.

Area II: St. 32.

A defect specimen at Station 32, 100—0 m was not subjected to further examination.

Salpingella acuminata (Claparède and Lachmann) Jørgensen.

Tintinnus acuminatus, Brandt 1906, pl. 67, fig. 1.
Salpingella acuminata, Kofoid and Campbell 1929, p. 350.

Area I: Sts. 3, 10.
» II: Sts. 18—20, 22, 23, 31, 34, 39, 40.
» III: Sts. 49c, 50, 63—65.
» IV: Sts. 77, 80.
» V: Sts. 81a, 84, 85, 87—90, 103.

This northern Atlantic species occurred regularly, but never abundantly, in the whole "Michael Sars" area.

Salpingella curta Kofoid and Campbell.

Salpingella curta, Kofoid and Campbell 1929, p. 348, fig. 675 and p. 352.

Area III: St. 49c.

A single specimen observed in the 200—100 m sample from St. 49c between the Canaries and the Azores was referred to this species.

It has previously been recorded from the Baltic Sea, the Galapagos Eddy and the South Equatorial Drift.

Salpingella decurtata Jørgensen.

Salpingella decurtata, Jørgensen 1924, p. 14, fig. 10.
Salpingella decurtata, Kofoid and Campbell 1929, p. 352.

Area V: Sts. 87, 90.

Single specimens were observed at two stations on the latter half of the northern Atlantic route of the "Michael Sars".

JØRGENSEN (1924) records it from the Mediterranean, Cadiz Bay and the Atlantic Current.

Salpingella gracilis Kofoid and Campbell.

Salpingella gracilis, Kofoid and Campbell 1929, p. 348, fig. 681 and p. 353.

Area I: St. 10.
» II: St. 22, Pump sample 8/5, Sts. 28, 30, 34, 35, 40.
» III: Sts. 46, 49c—58, 59—65, 68.
» IV: St. 77.
» V: Sts. 81a, 85, 87, 92, 98.

Length 350—420 μ.

This species had about the same occurrence as *S. acuminata;* north of Spain, in the Spanish Bay, around the Canaries, along the whole of the southern and northern Atlantic routes, at one Bank station, and at Station 98 north of Ireland

It is known from the South Equatorial Drift of the Pacific.

Salpingella minutissima Kofoid and Campbell.

Salpingella minutissima, Kofoid and Campbell 1929, p. 348, fig. 669 and p. 354.

Area I: St. 10.
» II: St. 22.

Length 78—133 μ.

One specimen (78 μ long) was found north of Spain and some more in the Spanish Bay. At both stations they occurred in the 500—200 m sample.

It has previously been recorded from the California Current.

Steenstrupiella steenstrupi (Claparède and Lachmann) Kofoid and Campbell.

Steenstrupiella steenstrupi, Kofoid and Campbell 1929, p. 312, fig. 596 and p. 314.

Area II: Sts. 12, 13, 25, Pump sample 8/5, Sts. 27, 30, 39.
» III: Sts. 54—60.
» V: Sts. 81a, 85, 87, 90, 92.

Length about 155 μ.

This species, which is widely distributed in the Mediterranean, the Atlantic and the Indian Oceans, has also been recorded from the Great Barrier Reef (Australia). In our material it was observed along the Spanish—African coast, around the Azores and scattered along all the northern Atlantic route.

Stelidiella stelidium (Biedermann) Kofoid and Campbell.

Tintinnus stelidium, Brandt 1906, pl. 69, fig. 11.
Stelidiella stelidium, Kofoid and Campbell 1929, p. 327.

Area II: Sts. 35, 40.
» III: St. 46.

Single specimens were observed from 2 stations near the Azores, and from one station between the Azores and the Sargasso Sea. The species has previously been recorded from the Sargasso Sea, the North and the South Equatorial Currents and the Guinea Current.

Stenosemella nivalis (Meunier) Kofoid and Campbell.

Tintinnopsis nucula, Campbell 1926, pl. 12, fig. 8.
Stenosemella nivalis, Kofoid and Campbell 1929, p. 69.

Area I: St. 3.
» II: St. 38.

This species occurred together with *S. oliva* and *S. ventricosa* south of Ireland and off Cape Bojador. It is previously known from the coast of Europe, the Mediterranean, Mutsu Bay (Japan) and Great Barrier Reef (Australia).

Stenosemella oliva (Meunier) Kofoid and Campbell.

Tintinnopsis oliva, Meunier 1910, pl. XIII, fig. 9.
Stenosemella oliva, Kofoid and Campbell 1929, p. 70.

Area I: Sts. 1—3, 5.
» II: St. 12, Pump sample 22/4, Sts. 18, 28, 30, 34—38.
» III: Sts. 49c, 51, 59, 60.

The specimens varied considerably in form and size as well as in structure and covering. Fig. 19a—d show the form variations. The "foreign bodies" were often coccoliths. At Station 3, south of Ireland, where the species occurred in great numbers, the bowl most frequently had the usual *Stenosemella* covering of coarse sand particles. Also some specimens with coccoliths among the sand particles occurred, and finally a type shown in Fig. 19b, where the bowl had a distinct structure, a rather coarse reticulation, and "foreign particles" scattered on it. On these specimens were also observed some few transverse oral windows on the collar.

Fig. 19d shows a specimen totally covered with coccoliths of different sizes. This type was especially common in the area between Gibraltar and the Canary Isles. At Cape Bojador the usual type occurred again.

Under influence of diluted acid upon the specimens partially covered with coccoliths, these were dissolved and

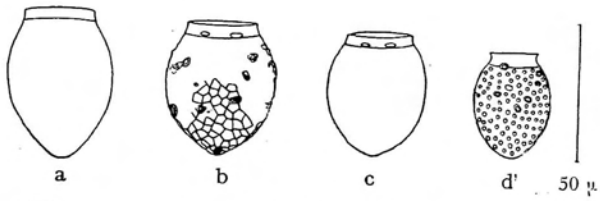

Fig. 19. *Stenosemella oliva*. a—c. St. 3. d. St. 28.

a coarse reticulation beneath the covering was revealed. Also some of these specimens had windows on the collar.

The specimens with the bowl totally covered with coccoliths unfortunately were so few that they could not be gathered and subjected to treatment with acid. Consequently nothing can be said about the eventual basic structure of these bowls.

Length 30—54 μ.

The species was practically confined to the banks along the coasts of Europe and Africa. Further single specimens were found at only 4 stations in the Azoric area.

This species is mainly distributed in northern coastal waters.

Stenosemella ventricosa (Claparède and Lachmann) Jørgensen.

Tintinnopsis ventricosa, Brandt 1906, pl. 17, fig. 9.
Stenosemella ventricosa, Kofoid and Campbell 1929, p. 71.
Non *Tintinnopsis ventricosoides*, Meunier 1910, pl. XIII, fig. 1—8.

Area I: Sts. 1—3, 5.
» II: Sts. 11, 18, 19, 32, Pump sample 11/5, Sts. 36—38.
» III: St. 44.
» V: St. 99.

Like the preceding species *S. ventricosa* mainly occurred along the European—African coasts. A single specimen was observed at the first station west of the Canaries. Besides it was found at Station 99 off Rockall.

It seems to have a wide distribution in warmer coastal waters.

Tintinnopsis beroidea Stein.

Tintinnopsis beroidea, Jørgensen 1924, p. 67, fig. 72 a.
Tintinnopsis beroidea, Kofoid and Campbell 1929, p. 28.

Area I: Pump sample 15/4.
» II: St. 12, Pump sample 22/4, Sts. 18, 23, 36—38.
» III: Fayal, St. 59.
» V: St. 88.

This species, which is widely distributed in temperate neritic waters, occurred off Queenstown (Ireland), along the coasts of Spain, Portugal and North-west Africa, and off the Azores.

Tintinnopsis campanula (Ehrenberg) Daday.

Tintinnopsis campanula, Brandt 1906, pl. 20, fig. 1.
Tintinnopsis campanula, Kofoid and Campbell 1929, p. 30.

Area II: Pump sample 25/4, Sts. 18, 20, 27, Pump sample 11/5, Sts. 36—40.

It was found only in the Spanish Bay and along the North-west African coast from Gibraltar to Cape Bojador.

The species is known from the Atlantic, the Mediterranean and the Baltic.

Tintinnopsis coronata Kofoid and Campbell.

Tintinnopsis davidoffi var. *cylindrica* forma *annulata*, Wailes 1925, pl. 2, fig. 3.
Tintinnopsis coronata, Kofoid and Campbell 1929, p. 32.

Area III: St. 44.

This species was recorded only from one station west of the Canary Islands. It is previously known from the Strait of Georgia (British Columbia).

Tintinnopsis lobiancoi Daday.

Tintinnopsis lobiancoi, Brandt 1906, pl. 26, fig. 7.
Tintinnopsis lobiancoi, Kofoid and Campbell 1929, p. 38.

Area II: St. 37.

One single specimen that must be referred to this species, was observed off Cape Bojador in the 20—0 m sample from Station 37.

In the Atlantic this species is known from the Sargasso Sea.

Tintinnopsis parvula Jørgensen.

Tintinnopsis beroidea, Brandt 1906, pl. 16, fig. 5.
Tintinnopsis parvula, Kofoid and Campbell 1929, p. 43.

Area I: Pump sample 15/4.
» II: Pump sample 22/4, Sts. 18, 36, 37.

The species was observed off Queenstown (Ireland), near the coast of Portugal, at Gibraltar and off Cape Bojador.

Tintinnopsis rapa Meunier.
Text-fig. 20.

Tintinnopsis rapa, Kofoid and Campbell 1929, p. 45.

Area I: Pump sample 15/4.

Together with *T. parvula* in the pump sample from Queenstown there occurred a few specimens that must be referred to this species. They showed the best agreement with the figure of HADA (1937, p. 172, fig. 22) but the aboral aperture was lacking.

Length 50—54 μ.

It has previously been recorded from the Kara Sea and the Barents Sea, from the coast of Norway and from the Akkeshi Bay, Japan.

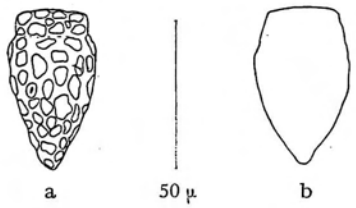

Fig. 20.
Tintinnopsis rapa. Pump sample 15/4. (Queenstown).

Tintinnopsis undella Meunier.

Tintinnopsis undella, Meunier 1910, pl. XIII, fig. 28.
Tintinnopsis undella, Kofoid and Campbell 1929, p. 49.

Area I: Pump sample 15/4.

In the Queenstown pump sample there also occurred some specimens, which were determined as belonging to this species. It is previously known from the Kara Sea.

Tintinnopsis ventricosoides Meunier.

Tintinnopsis ventricosoides, Meunier 1910, pl. XIII, figs. 1—8.
Non *Tintinnopsis ventricosa*, Meunier 1919, p. 28.

Area I: Sts. 1—3, 5.

KOFOID and CAMPBELL'S figure 18 (1929, p. 39), referred to *Tintinnopsis major* Meunier, is in reality an illustration of *T. ventricosoides* Meunier. It has erroneously been reproduced instead of pl. XII, fig. 1 (MEUNIER 1910).

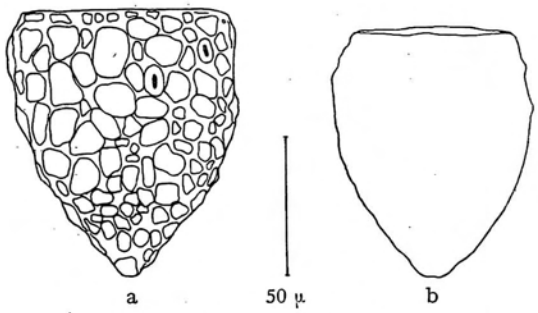

Fig. 21. *Tintinnopsis ventricosoides*. St. 1.

The present specimens belong to the species *T. ventricosoides* Meunier. It is very like *Stenosemella ventricosa* (Claparède and Lachmann) Jørgensen, to which species Kofoid and Campbell refer it. The hyaline collar, however, which characterizes the genus *Stenosemella*, is lacking.

Some of the specimens differ somewhat from the usual form (Text-fig. 21a—b).

Length 90—105 μ.

This species was exclusively found in the area south of Ireland. Meunier records it from the Barents Sea.

Tintinnus apertus Kofoid and Campbell.

Tintinnus apertus, Kofoid and Campbell 1929, p. 330, fig. 648 and p. 331.

Area II: Sts. 25, 34.
» III: Sts. 51, 53, 60, 64.

This species was always found attached to *Chaetoceros* spp. It was observed in the Spanish Bay, near the Canary Islands, in the vicinity of the Azores and at the Sargasso Sea station 64.

Previously it is known from the coast of Norway, the Mediterranean, the eastern Pacific, and the Great Barrier Reef (Australia).

Tintinnus elongatus (Jørgensen) Kofoid and Campbell.

Tintinnus fraknóii f. *elongata*, Jørgensen 1924, p. 12, fig. 5 b.
Tintinnus elongatus, Kofoid and Campbell 1929, p. 334.

Area II: Sts. 18—20, 22—32, 34, 35, 39, 40.
» III: Sts. 46, 48, 50—68.
» V: Sts. 81a, 87—92.

Length 390—450 μ.

This species has previously been recorded by Jørgensen from the Mediterranean. On the "Michael Sars" Expedition it was found regularly on the coastal banks from Gibraltar to Cape Bojador and along the southern as well as the northern Atlantic route.

Tintinnus fraknói Daday.

Tintinnus fraknóii, Jørgensen 1924, p. 12, fig. 5 a.
Tintinnus fraknóii, Kofoid and Campbell 1929, p. 334.

Area II: Sts. 12, 13, Pump sample 22/4, Pump sample 25/4, St. 20, Pump sample 5/5, Sts. 22—35, 39.
» III: Sts. 46, 48, 50—68.
» V: Sts. 87—92.

Length 290—475 μ.

According to Jørgensen (1924) this species is widely distributed in the Indian Ocean and the Pacific, as well as in the Mediterranean and the warmer parts of the Atlantic.

It had about the same occurrence as *T. elongatus*, but it was also observed along the coast of Portugal.

Tintinnus latus (Jørgensen) Kofoid and Campbell.

Tintinnus fraknóii var. *latus*, Jørgensen 1924, p. 12, fig. 6.
Tintinnus latus, Kofoid and Campbell 1929, p. 334.

Area III: St. 64.

In the 100—0 m sample from the Sargasso Sea station 64 some specimens belonging to this species were observed. It is previously known from the Mediterranean.

Tintinnus lusus-undae Entz, Sr.

Tintinnus lusus-undae, Jørgensen 1924, p. 10, fig. 1.
Tintinnus lusus-undae, Kofoid and Campbell 1929, p. 335.

Area II: Sts. 13, 22.

This species has previously been recorded from the Mediterranean, it is also widely distributed in the warmer parts of the Atlantic and in the Indo-Pacific region.

In the "Michael Sars" material only two specimens were observed, one from the coast of Portugal (length 170 μ) and another from the Spanish Bay (length 265 μ).

Tintinnus macilentus (Jørgensen) Kofoid and Campbell.

Tintinnus fraknóii var. *macilentus*, Jørgensen 1924, p. 10, fig. 4.
Tintinnus macilentus, Kofoid and Campbell 1929, p. 335.

Area II: St. 12.

One single specimen was observed off Cape Finisterre (Spain). Length 305 μ.

Tintinnus pinguis Kofoid and Campbell.

Tintinnus pinguis, Kofoid and Campbell 1929, p. 328, fig. 640 and p. 338.

Area I: St. 10.
» V: St. 81a.

Length about 142 μ.

The species has previously been recorded from the California Current and the Mexican Current by Kofoid and Campbell. It occurred at one of the stations between Ireland and Spain and at the first deep-sea station east of the Newfoundland Banks.

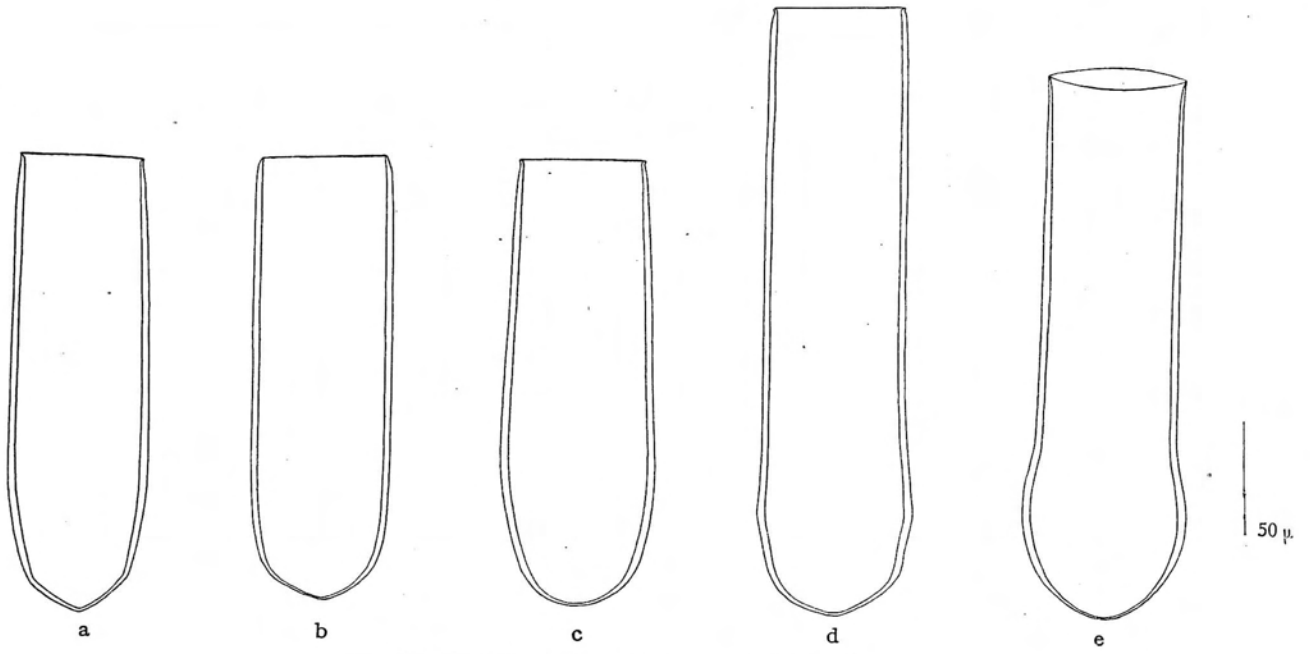

Fig. 22. *Undella hyalina*. a—c. St. 30. d—e. St. 18.

Tintinnus tubulosus Ostenfeld.

Tintinnus lusus-undae var. *tubulosus*, Jørgensen 1924, p. 10, fig. 2.
Tintinnus tubulosus, Kofoid and Campbell 1929, p. 340.

Area II: Sts. 11, 12.

Some of the specimens observed had lengths exceeding those given by other authors. JØRGENSEN (1924) observed specimens of this species 94—150 μ long and HADA (1937) some only 85 μ long. From the "Michael Sars" material lengths between 150 μ and 210 μ were measured. The general shape agreed closely with the figure of JØRGENSEN.

This species was exclusively observed from the north-west coast of Spain. JØRGENSEN records it from the Mediterranean, the west coast of Norway and from Skagerrak, HADA from the Akkeshi Bay, Japan.

Undella dilatata Kofoid and Campbell.

Undella hyalina var. c, Brandt 1906, pl. 64, fig. 19.
Undella dilatata, Kofoid and Campbell 1929, p. 262.

Area II: Sts. 30, 34, 35, 39, 40.
» III: Sts. 46, 49c.

Length about 155 μ.

This characteristic species was observed along the North-west African Coast, around the Canary Islands and at two stations west of these islands.

Previously it has been recorded from the North Equatorial Current of the Atlantic.

Undella hyalina Daday.
Text-fig. 22.

Undella hyalina, Daday 1887, p. 564.
Undella hyalina, Brandt 1907, p. 358 (incl. var. a, c, excl. var. b).
Undella hyalina, Jørgensen 1924, p. 42 (incl. f. *attenuata*).
Undella attenuata, Kofoid and Campbell 1929, p. 260.
Undella dilatata, Kofoid and Campbell 1929, p. 262 (excl. *U. dohrni* forma? Jørgensen).
Undella hyalina. Kofoid and Campbell 1929, p. 263.
Undella parva, Kofoid and Campbell 1929, p. 264.
Undella hyalina, Alzamora, 1933, p. 10.

Area II: Sts. 18, 19, 23, 27, 28, 30, 34, 35, 39, 40.
» III: Sts. 46, 49c—58, 59—65, 68.

The specimens varied considerably in form and size as shown in the figure (22a—e). Intermediate forms are also seen. The aboral part of the lorica may either be contracted, as seen on *f. attenuata* JØRGENSEN (1924 p. 39, fig. 45b), or be more or less bulbous, as seen on fig. 27 (lám. III) of ALZAMORA (1933).

Bulbing was most common in the longest specimens, and contracting in the shortest ones, but the rule was not without its exceptions.

Length 170—280 μ.

This species was common along the whole of the "Michael Sars" route from Gibraltar to the Newfoundland Banks. It has previously been recorded from the same area.

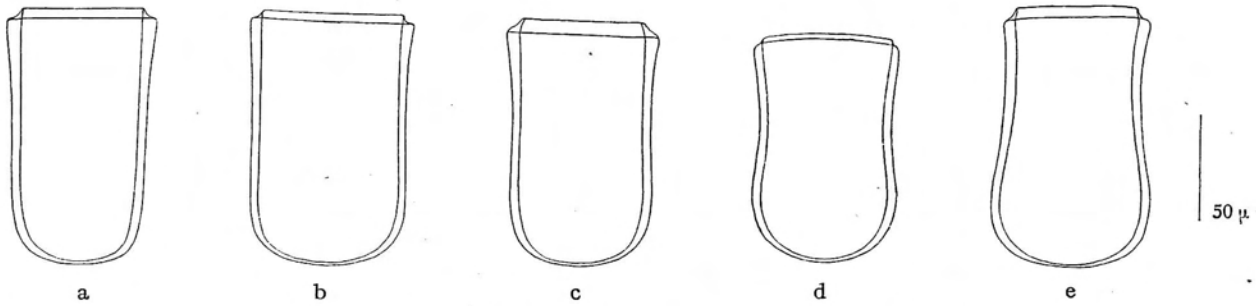

Fig. 23. *Undellopsis marsupialis*. a and c. St. 22. b, d and e. St. 18.

Undellopsis marsupialis (Brandt) Kofoid and Campbell. Text-fig. 23.

Undella marsupialis, Brandt 1907, p. 360.
Undella marsupialis, Jørgensen 1924, p. 43 (non f. *subangulata*).
Undellopsis lineata, Kofoid and Campbell 1929, p. 269.
Undellopsis marsupialis, Kofoid and Campbell 1929, p. 269.
Undellopsis pacifica, Kofoid and Campbell 1929, p. 270.

Area II: Sts. 18, 19, 22—25, 27—31, 34.
» III: Sts. 44, 46, 49c, 53, 54, 60.

Like the preceding species also this one showed great variation. There seems to be a gradual transition from forms like Fig. 23a, which no doubt is identic with *U. pacifica* Kofoid and Campbell, to forms represented by Fig. 23e, which is closely related to *U. lineata* Kofoid and Campbell.

The material was not abundant enough to be used statistically, but a and e seemed to be the rarest forms and c the most common one.

The specimens were often covered with minute foreign particles similar to those on *Parundella aculeata*. These were dissolved under influence of diluted acid.

Length 100—125 µ.

It occurred scattered on the route from Gibraltar and the Mediterranean station to Station 60 between the Azores and the Sargasso Sea. It was lacking, however, at Cape Bojador and at the Azores. It has previously been recorded from the same area.

Undellopsis tricollaria (Laackmann) Kofoid and Campbell.

Undella tricollaria, Jørgensen 1924, p. 39, fig. 50.
Undellopsis tricollaria, Kofoid and Campbell 1929, p. 272.

Area III: Sts. 46, 51, 64.

One specimen was observed at each of Stations 46 and 51 between the Canary Islands and the Sargasso Sea, and some more at the Sargasso Sea station 64.

The species has previously been recorded from the Mediterranean (Ionian Sea) and from the Brazil Current, west of South Africa.

Xystonella lohmanni (Brandt) Brandt.

Cyttarocylis (*Xystonella*) *acus* var. *lohmanni*, Brandt 1906, pl. 50, fig. 6.
Xystonella lohmanni, Kofoid and Campbell 1929, p. 236.

Area II: Sts. 11, 18, 22, 25, Pump sample 8/5, Sts. 27—31, 34, 35, 39, 40.
» III: Sts. 46, 50—60.
» V: Sts. 81a, 85, 87—92.

The specimens were often covered with foreign particles similar to those on *Parundella aculeata*. Consequently the net structure was not always visible.

Length 375—430 µ.

The species was first observed north of Spain. From the Spanish Bay it was fairly common along the whole of the route to St. 92 south-west of Ireland. But it was lacking on the Newfoundland Banks.

It has previously been recorded from the Mediterranean, the Bay of Biscay, off New Amsterdam and from the Benguela and the Brazil Currents.

Xystonella treforti (Daday) Laackmann.

Xystonella treforti, Jørgensen 1924, p. 33, fig. 37.
Xystonella treforti, Kofoid and Campbell 1929, p. 238.

Area II: Sts. 34, 35, 39, 40.
» III: Sts. 58, 59—64, 68, 69.
» IV: St. 80.
» V: Sts. 81a, 85, 88.

Length 350—400 µ.

This species was not so common as the preceding one. It was observed near the Canary Islands and off Cape Bojador, besides it only occurred from the Azores to the Newfoundland Banks and at 3 stations on the first part of the northern Atlantic route.

It is also previously known from numerous localities in the Atlantic, and it is recorded from the Mediterranean, and from the Indian and the Pacific Oceans.

Xystonellopsis armata (Brandt) Kofoid and Campbell.

Undella armata var. a, Brandt 1906, pl. 43, fig. 6.
Xystonellopsis armata, Kofoid and Campbell 1929, p. 241.

Area III: St. 64.

One single specimen was observed in the 100—0 m sample from the Sargasso Sea station 64.

It is known from the Pacific and from the Brazil Current.

Xystonellopsis crassispinosa (Brandt) Kofoid and Campbell.

Cyttarocylis (*Xystonella*) *cymatica* var. b, Brandt 1906, pl. 45, fig. 1.
Xystonellopsis crassispinosa, Kofoid and Campbell 1929, p. 244.

Area III: Sts. 44, 46, 49c, 51—58, 64.

KOFOID and CAMPBELL record *X. cymatica* var. b Brandt as synonymous with *X. cyclas* Kofoid and Campbell. In my opinion this variety is identic with *X. crassispinosa*.

It occurred between the Canary Islands and the Azores and also at the Sargasso Sea station 64. At this station it was observed together with the closely allied *X. cymatica*.

Previously this species has been recorded from the South Equatorial Drift, the Peruvian Current and the Galapagos Eddy and, if identic with the above mentioned variety of BRANDT, also in the North Equatorial Current of the Atlantic.

Xystonellopsis cymatica (Brandt) Jørgensen.

Cyttarocylis (*Xystonella*) *cymatica*, Brandt 1906, pl. 44, fig. 3.
Xystonellopsis cymatica, Kofoid and Campbell 1929, p. 245.

Area II: Sts. 18, 28, 30, 40.
» III: Sts. 63, 64, 68.

Length 225—245 μ.

This species is previously known from many localities in the Atlantic and from the Mediterranean as well as from the Pacific and the Indian Oceans.

In the "Michael Sars" area it occurred in the Strait of Gibraltar, in the Spanish Bay, near the Canaries, and on the border of the Sargasso Sea, but was generally very sparse.

Xystonellopsis dicymatica (Brandt) Kofoid and Campbell.

Cyttarocylis (*Xystonella*) *dicymatica*, Brandt 1906, pl. 46, fig. 1.
Xystonellopsis dicymatica, Kofoid and Campbell 1929, p. 245.

Area III: Sts. 44, 46, 49c—51, 60, 63, 64, 68.

Length 276—300 μ.

The species occurred scattered along the whole of the southern Atlantic route from the Canaries to the Newfoundland Banks. It is also previously known from the same area.

Xystonellopsis epigrus Kofoid and Campbell.

Xystonellopsis epigrus, Kofoid and Campbell 1929, p. 242, fig. 476 and p. 246.

Area II: Sts. 18, 34, 35.
» III: Sts. 46, 49c, 50, 53, 60.

Length about 130 μ.

It occurred in the Strait of Gibraltar, near the Canaries, between these islands and the Azores, and at Station 60 west of the Azores.

Previously this species has been recorded from the South Equatorial Drift and the Easter Island Eddy.

Xystonellopsis gaussi (Laackmann) Kofoid and Campbell.

Xystonellopsis gaussi, Kofoid and Campbell 1929, p. 242, fig. 480 and p. 246.

Area III: Sts. 64, 68.

It was recorded only from two stations between the Sargasso Sea and the Newfoundland Banks.

The species is known from the South Equatorial and the Guinea Currents of the Atlantic and from the California Current.

Xystonellopsis hastata (Biedermann) Kofoid and Campbell.

Cyttarocylis (*Xystonella*) *hastata*, Brandt 1906, pl. 49, fig. 2.
Xystonellopsis hastata, Kofoid and Campbell 1929, p. 247.

Area II: Sts. 18, 28, 34, 35.
» III: Sts. 46, 50—53, 60, 63.

BIEDERMANN (1892) gives the number of oral teeth to about 40, and BRANDT (1907) to about 24, the "Michael Sars" specimens, however, show a variation in the number from 12 to 19, most frequently 16. See Text-fig. 24.

The pedicel is supplied with 6 short lists (seldom 5) ending in a sort of teeth. BRANDT here mentions 7 slightly oblique lists, but on his fig. 2, pl. 49 they are drawn straight.

The lorica is often covered with minute foreign particles, which are dissolved in diluted acid.

Length 210—220 μ.

This species has previously been recorded from the Guinea Current and the North and the

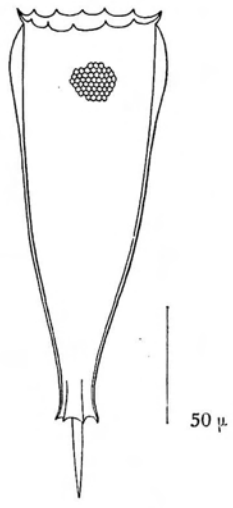

Fig. 24.
Xystonellopsis hastata.
St. 18.

South Equatorial Currents. It occurred at one station in the Spanish Bay, in the Strait of Gibraltar, and off the Canaries. Besides it was found scattered in the area south of the Azores, between the Canaries and the Sargasso Sea.

With the exception of the Gibraltar station the species was always found in the deep-water samples at each station.

Xystonellopsis inaequalis Kofoid and Campbell.

Cyttarocylis (*Xystonella*) *dicymatica* var. a, Brandt 1906, pl. 45, fig. 3.
Xystonellopsis inaequalis, Kofoid and Campbell 1929, p. 247.

Area III: St. 51.

One single specimen was observed in the 200—100 m sample from Station 51 on the border of the Sargasso Sea.

It is previously known from the South Equatorial Current of the Atlantic, and from several localities in the Pacific.

Xystonellopsis paradoxa (Cleve) Jørgensen.

Cyttarocylis? (*Xystonella*) *paradoxa*, Brandt 1906, pl. 48, fig. 4.
Xystonellopsis paradoxa, Kofoid and Campbell 1929, p. 249.

Area II: Sts. 27, 30, 34, 40.
» III: Sts. 44, 46, 49c—58, 59—65, 68.

Length about 220 μ.

This species was observed in the Spanish Bay and near the Canaries. It also occurred along all the southern Atlantic route from the Canaries to the Newfoundland Banks and was especially abundant at Station 46 straight west of the Canaries.

It has also previously been recorded from the same area.

Xystonellopsis spicata (Brandt) Jørgensen.

Xystonellopsis cymatica var. *spicata*, Jørgensen 1924, p. 51, fig. 58.
Xystonellopsis spicata, Kofoid and Campbell 1929, p. 250.

Area II: Sts. 20, 22, 25, 27, 28, 30, 34, 35, 40.
» III: Sts. 44, 46, 49c—51, 58, 64, 65.
» V: St. 87.

The species had practically the same occurrence as the preceding one, but it was also represented on the northern Atlantic route, at Station 87 straight north of the Azores.

It is previously known from Cadiz Bay, from the North and the South Equatorial Currents, and from Ceylon.

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Table I. *The coast banks of North Europe. (April 9th—20th).*

Date and position of the stations are given on p. 3. ○ singly, × present, ● abundant.

Station	1				2	3					4	Pump sample 15/4	5	7			9	10					
Depth in metres	140—77	140—79	80—40	40—0	15—0	160—80	160—110	80—40	40—0	180—110	50—0		50—0	20—0	50—20	100—45	50—0	500—200	200—100	250—150	100	100—0	1000—500
Codonella elongata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—
Codonellopsis lagenula	—	—	—	—	—	×	—	×	×	—	×	—	—	×	×	×	×	×	×	×	○	×	×
Craterella urceolata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—
Dictyocysta dilatata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○
— *duplex*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—
— *elegans*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	—	×	×
— *nidulus*	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	×	—	—	—	○	—	—	○
— *reticulata*	—	—	—	—	—	×	×	×	×	×	×	—	—	—	×	×	×	×	×	×	×	×	×
— *speciosa*	—	—	—	—	—	—	—	×	—	—	—	—	—	—	○	—	—	×	×	×	×	×	—
Parundella aculeata	—	—	—	—	—	×	○	—	○	—	×	—	—	○	—	—	—	—	×	○	—	—	×
— *attenuata*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	×	○	—	—	○	○
— *caudata*	—	—	—	—	—	×	—	×	—	—	×	—	—	○	—	—	×	×	×	—	×	×	×
— *difficilis*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	×
— *lata*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×
Proplectella claparèdei	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	—	—	—	—	×
Rhabdonella amor	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	×	○	—	×	×
Salpingacantha undata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—
Salpingella acuminata	—	—	—	—	—	○	—	×	—	—	—	—	—	—	—	—	—	×	○	—	—	○	—
— *gracilis*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—
— *minutissima*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—
Stenosemella nivalis	—	—	—	—	—	×	×	×	○	×	—	—	—	—	—	—	—	—	—	—	—	—	—
— *oliva*	×	—	×	×	×	×	×	×	×	×	—	—	○	—	—	—	—	—	—	—	—	—	—
— *ventricosa*	×	—	×	×	×	○	×	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—
Tintinnopsis beroidea	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—
— *parvula*	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—
— *rapa*	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—
— *undella*	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—
— *ventricosoides*	×	—	×	×	×	—	×	○	—	×	—	—	×	—	—	—	—	—	—	—	—	—	—

Table II. *The coast banks of South*

Date and position of the stations are given

Station	11	12	13		Pump sample 22/4	Pump sample 22/4	18				19				20		Pump sample 6/5	22				23			25			Pump sample 8/6
Depth in metres	50—0	50—0	75—40	40—0			350—200	200—100	100—50	50—0	200—0	400—200	100—50	50—0	130—80	80—0		500—200	200—100	100—50	50—0	200—100	100—50	50—0	100—50	50—0	200—100	
Acanthostomella lata	—	—	—	—	—	×	—	—	×	O	—	—	—	—	—	—	—	—	—	×	—	O	—	—	—	—	—	—
Amphorella quadrilineata	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—
Amphorella sp. (?)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Climacocylis sp.	—	—	—	—	—	O	—	—	O	—	—	O	—	—	—	O	—	—	—	O	—	×	—	O	×	×	—	—
Codonella amphorella	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *elongata*	O	O	—	—	—	—	×	×	×	×	×	×	O	O	—	—	—	×	×	O	O	O	×	×	O	×	×	—
— *nationalis*	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *oceanica*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *sp.*	—	—	—	—	—	O	—	—	—	—	O	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Codonellopsis lagenula	×	—	O	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	×	—	O	—
— *orthoceras*	—	—	—	—	—	—	×	×	×	—	×	×	×	×	—	—	—	O	—	—	—	—	—	—	—	—	—	—
Coxliella ampla	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *declivis*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Craterella acuta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *urceolata*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cyttarocylis cassis	—	—	—	—	—	—	—	—	×	—	×	—	O	—	O	O	—	—	×	—	—	×	—	—	O	—	×	—
— *longa*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	O	—	—	—	—	—	—	—	×	—
— *magna*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—
Dadayiella ganymedes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *sp.*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daturella sp.	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dictyocysta dilatata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	×	O
— *duplex*	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	×	—	—	—	—	—	—	—	—	—
— *elegans*	×	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	O	O	—	—	O	—	×	—
— *minor*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *nidulus*	×	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *reticulata*	×	×	O	—	—	—	×	—	×	—	—	—	—	—	O	—	—	—	×	×	O	×	×	—	×	×	×	—
— *speciosa*	—	×	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	O	×	—	—	—	—	—	—	—	—
Epiplocylis acuminata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—
— *blanda*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Favella arcuata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *attingata*	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *serrata*	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *sp.*	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Helicostomella subulata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parundella aculeata	×	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—
— *acuta*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *attenuata*	—	—	—	—	—	—	O	×	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	×	—
— *caudata*	×	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *difficilis*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	O	—	—	—	—	—	—	—	—	—	—
— *lohmanni*	—	O	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *longa*	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *messinensis*	—	—	—	—	—	—	O	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Petalotricha ampulla	—	—	—	—	—	—	—	×	—	O	×	—	—	—	—	O	—	—	—	—	—	—	—	—	O	—	—	—
— *major*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—
Proplectella acuta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *angustior*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *claparèdei*	×	—	—	—	—	×	×	×	×	×	×	×	O	×	×	×	—	×	×	×	—	×	×	—	×	—	●	—
— *ellipsoida*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *fastigata*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *subcaudata*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *tenuis*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—

Europe and North Africa. (*April 21st - May 22nd*).

on p. 3. ○ singly, × present, ● abundant.

27			28			29	30	31	32	Pump sample 11/6	34				35			36	37		38		39		40			Station
200—100	100—50	50—0	200—0	500—200	100—0	100—0	200 0	180—0	100—0		50—0	100—50	200—100	500—200	100—0	200—100	500—200	40—0	20—0	40—5	80—40	40—0	220—100	100—0	100—0	200—100	1000—200	Depth in metres
○	—	—	○	—	—	○	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*Acanthostomella lata*
×	—	—	×	—	×	×	×	—	—	—	—	×	×	—	—	○	—	—	—	—	—	—	—	×	—	—	—	*Amphorella quadrilineata*
—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*Amphorella sp.* (?)
—	—	×	×	—	—	—	—	—	—	—	—	○	×	—	×	—	—	—	—	—	—	—	●	×	×	×	—	*Climacocylis sp.*
—	—	—	—	—	—	—	—	—	—	—	—	×	×	×	—	○	—	—	—	—	—	—	×	×	○	×	—	*Codonella amphorella*
×	×	×	×	×	×	×	×	×	×	—	×	×	×	×	○	×	×	—	—	—	—	—	×	×	○	×	×	— *elongata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *nationalis*
×	×	○	×	—	×	—	×	—	—	—	—	×	×	×	—	×	×	—	—	—	—	—	○	×	—	—	○	— *oceanica*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *sp.*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	*Codonellopsis lagenula*
—	—	—	—	—	—	—	—	—	—	—	—	×	—	×	—	—	—	—	—	—	—	—	—	—	—	—	○	— *orthoceras*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	—	—	○	*Coxliella ampla*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	— *declivis*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	*Craterella acuta*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	— *urceolata*
×	×	—	×	×	—	×	×	○	—	—	—	—	×	—	—	○	○	—	—	—	—	—	○	—	—	—	○	*Cyttarocylis cassis*
—	○	—	×	×	×	—	×	×	—	—	—	×	×	×	—	—	×	—	—	—	—	—	×	×	○	—	—	— *longa*
○	—	○	×	×	×	×	×	—	○	—	×	×	×	×	—	—	—	—	—	—	—	—	—	—	—	—	○	— *magna*
—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	○	○	—	—	—	*Dadayiella ganymedes*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	— *sp.*
—	—	—	—	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*Daturella sp.*
—	—	—	—	—	—	—	○	—	—	—	—	×	×	×	×	×	×	—	—	○	×	—	●	×	×	×	×	*Dictyocysta dilatata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	○	— *duplex*
○	×	—	—	—	—	—	×	—	—	—	—	×	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	— *elegans*
—	—	—	×	—	○	—	×	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *minor*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *nidulus*
○	×	×	×	○	×	○	—	×	○	—	○	×	×	×	—	×	×	—	—	—	—	—	×	×	—	—	×	— *reticulata*
—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	○	×	×	—	— *speciosa*
○	—	—	—	—	—	—	×	×	—	—	—	×	×	×	×	×	×	—	—	○	×	—	●	×	×	×	×	*Epiplocylis acuminata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	— *blanda*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	○	○	—	—	—	—	—	*Favella arcuata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *attingata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	— *serrata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *sp.*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	×	×	×	—	○	—	—	—	*Helicostomella subulata*
×	—	—	—	—	—	○	—	—	○	—	—	—	○	—	—	—	—	×	—	—	×	—	—	—	—	—	—	*Parundella aculeata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	— *acuta*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	— *attenuata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *caudata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	— *difficilis*
—	—	—	—	○	○	×	—	—	—	—	—	—	×	×	—	×	×	—	—	—	—	—	—	—	—	×	×	— *lohmanni*
—	—	—	×	○	○	—	×	×	—	—	○	×	×	○	×	×	×	—	—	—	—	—	×	×	×	×	○	— *longa*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *messinensis*
○	—	—	—	—	○	○	×	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	×	×	×	×	—	*Petalotricha ampulla*
—	—	—	—	—	—	—	○	—	—	—	—	○	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	— *major*
○	—	—	×	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	○	○	—	×	—	*Proplectella acuta*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	— *angustior*
●	×	—	×	×	×	×	×	×	—	—	—	×	×	×	—	×	×	×	—	—	—	—	—	—	×	—	—	— *claparèdei*
—	—	—	—	—	○	—	×	×	—	—	—	○	×	○	—	—	—	—	—	—	—	—	—	—	—	—	—	— *ellipsoida*
—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	—	—	—	×	—	○	×	×	×	○	— *fastigata*
—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *subcaudata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *tenuis*

Table II. (Cont.)

Station	11	12	13				18				19				20			22				23			25			
Depth in metres	50—0	50—0	75—40	40—0	Pump sample 22/4	Pump sample 26/4	350—200	200—100	100—50	50—0	200—0	400—200	100—50	50—0	130—80	80—0	Pump sample 5/5	500—200	200—100	100—50	50—0	200—100	100—50	50—0	100—50	50—0	200—100	Pump sample 9/5
Rhabdonella amor	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *chavesi*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *conica*	—	—	—	—	O	—	—	—	—	—	—	O	—	—	—	×	—	—	—	—	—	—	—	—	—	×	—	—
— *hebe*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	O	—	—	—	—	—	—	—	—	—	—
— *henseni*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *sp.*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rhabdonellopsis longicaulis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salpingacantha sp.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salpingella acuminata	—	—	—	—	—	—	—	—	×	—	—	O	—	—	—	×	—	—	O	—	—	—	O	—	—	—	—	—
— *gracilis*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—
— *minutissima*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—
Steenstrupiella steenstrupi	—	O	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	×
Stelidiella stelidium	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stenosemella nivalis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *oliva*	—	×	—	—	O	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *ventricosa*	—	O	—	—	—	—	×	×	O	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tintinnopsis beroidea	—	O	—	—	×	—	—	×	—	O	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—
— *campanula*	—	—	—	—	—	×	×	×	×	—	—	—	—	—	O	O	—	—	—	—	—	—	—	—	—	—	—	—
— *lobiancoi*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *parvula*	—	—	—	—	O	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tintinnus apertus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—
— *elongatus*	—	—	—	—	—	—	×	×	×	—	×	×	—	×	×	×	—	—	—	—	×	O	O	×	—	×	—	×
— *fraknói*	—	×	×	×	×	×	—	—	—	—	—	—	—	—	—	×	×	×	—	×	×	O	×	×	×	×	×	×
— *lusus-undae*	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—
— *macilentus*	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *tubulosus*	×	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *sp.*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Undella dilatata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *hyalina*	—	—	—	—	—	—	×	×	—	—	O	×	×	×	—	—	—	—	—	—	—	—	O	—	—	—	—	—
Undellopsis marsupialis	—	—	—	—	—	—	—	—	×	—	—	—	O	—	—	—	—	—	×	O	—	×	O	—	—	—	×	—
Xystonella lohmanni	×	—	—	—	—	—	—	×	—	—	—	—	—	—	—	×	—	—	O	—	—	—	—	—	O	×	O	×
— *treforti*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Xystonellopsis cymatica	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *epigrus*	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *hastata*	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *paradoxa*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *spicata*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	×	—	—	—	—	—	—	—	×	—

27			28			29	30	31	32	Pump sample 21/5	34				35			36	37		38		39		40			Station
200—100	100—50	50—0	200—0	500—200	100—0	100—0	200—0	180—0	100—0		50—0	100—50	200—100	500—200	100—0	200—100	500—200	40—0	20—0	40—5	80—40	40—0	220—100	100—0	100—0	200—100	1000—200	Depth in metres
—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	×	—	—	—	—	—	—	—	—	×	—	—	—	*Rhabdonella amor*
—	—	—	—	—	—	—	—	×	—	—	—	×	×	×	—	—	—	—	—	—	—	—	×	O	—	—	—	— *chavesi*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	O	—	—	—	—	—	O	—	—	—	— *conica*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	×	—	—	—	O	×	—	×	×	×	×	— *henseni*
—	—	—	—	—	O	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	— *sp.*
—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	*Rhabdonellopsis longicaulis*
—	—	—	—	—	—	—	—	O	—	—	—	×	×	—	—	—	—	—	—	—	—	—	—	—	—	×	—	*Salpingacantha sp.*
O	—	—	×	O	×	—	×	—	—	—	—	—	—	×	—	O	×	—	—	—	—	—	—	—	—	O	—	*Salpingella acuminata*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	— *gracilis*
O	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *minutissima*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	O	*Steenstrupiella steenstrupi*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	*Stelidiella stelidium*
—	—	—	—	O	—	—	×	—	—	—	O	O	×	—	—	—	O	×	O	×	O	×	—	—	—	—	—	*Stenosemella nivalis*
—	—	—	—	—	—	—	—	—	O	O	—	—	—	—	—	—	—	×	×	×	×	O	O	—	—	—	—	— *oliva*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	—	—	×	—	—	—	—	—	— *ventricosa*
—	—	O	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	×	×	×	×	×	O	—	—	—	O	*Tintinnopsis beroidea* — *campanula*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	— *lobiancoi*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	O	O	—	—	—	—	—	—	—	— *parvula*
—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*Tintinnus apertus*
O	—	×	×	—	×	×	×	×	×	—	—	O	×	O	—	—	×	—	—	—	—	—	×	×	—	×	—	— *elongatus*
×	—	×	×	O	×	×	×	×	×	O	—	×	—	—	—	×	—	—	—	—	—	—	×	×	—	—	—	— *fraknói*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *lusus-undae*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *macilentus*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	— *tubulosus*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	— *sp.*
—	—	—	—	—	—	—	O	—	—	—	—	×	×	×	—	—	×	—	—	—	—	—	×	×	—	×	—	*Undella dilatata*
—	×	—	×	×	×	—	×	—	—	—	—	O	O	—	—	—	×	—	—	—	—	—	×	—	—	—	×	— *hyalina*
×	—	—	×	O	×	O	×	O	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*Undellopsis marsupialis*
—	—	×	×	×	×	×	O	O	—	—	—	×	×	O	×	×	×	—	—	—	—	—	×	×	×	×	×	*Xystonella lohmanni*
—	—	—	—	—	—	—	—	—	—	—	—	O	×	×	—	O	O	—	—	—	—	—	—	O	O	×	—	— *treforti*
—	—	—	O	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	*Xystonellopsis cymatica*
—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	×	—	—	—	—	—	—	—	—	—	—	— *epigrus*
—	—	—	—	O	—	—	—	—	—	—	—	—	×	—	—	—	×	—	—	—	—	—	—	—	—	—	—	— *hastata*
O	—	—	—	—	—	—	O	—	—	—	—	—	×	×	—	—	—	—	—	—	—	—	—	—	—	O	—	— *paradoxa*
×	—	—	—	O	—	—	O	—	—	—	—	—	×	×	—	×	—	—	—	—	—	—	—	—	—	O	×	— *spicata*

Table III. *The Central Atlantic from the Canaries to the Azores, and from the Azores to the Newfoundland Banks. (May 28th — June 29th).* Date and position of the stations are given on p. 3—4. ○ singly, × present, ● abundant.

Station	44		46		48	49c			50			51		53			54	58	Fayal	59		60		63				64			65	66			68	69
Depth in metres	100—0	200—100	100—0	500—200	200—100	0	100—0	200—100	500—200	100—0	200—100	500—200	100—0	200—100	100—0	200—100	500—200	200—0	200—0	0	50—0	200—0	100—0	500—200	100—0	200—100	500—200	200—0	200—0	200—100	100—0	200—0	500	100—0	500—200	200—0	200—0
Amphorella quadrilineata	—	○	—	○	—	—	—	×	○	×	×	—	×	×	×	—	—	×	—	—	○	×	×	—	×	○	—	×	×	×	×	×	—	—	—	×	—
Amphorellopsis acuta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—
Amplectella collaria	—	○	—	×	—	—	—	—	—	—	—	—	○	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	○	—	—	—	—	—	—	—
— *occidentalis*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—
Brandtiella palliata	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	○	○	—	—	—	—	—	—
Bursaopsis bursa (?)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—
Climacocylis sp.	—	—	—	—	—	—	×	×	—	×	×	—	○	×	×	—	×	×	○	○	×	×	×	—	×	×	×	×	×	×	×	×	—	—	—	×	—
Codonella amphorella	—	×	—	×	×	—	—	×	×	—	×	○	—	×	—	—	×	×	×	×	×	×	×	×	×	×	×	×	×	×	—	○	×	—	—	○	×	—
— *elongata*	○	×	—	×	×	—	×	○	×	—	×	×	×	×	×	×	×	×	×	×	○	×	×	×	×	×	●	×	×	×	×	×	—	—	—	×	×	○
— *oceanica*	—	×	—	×	×	—	○	×	×	×	×	×	×	×	×	—	×	×	×	○	×	×	×	×	×	×	×	×	×	×	×	×	—	—	—	×	×	—
Codonellopsis lagenula	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—
— *orthoceras*	—	—	—	×	○	—	—	—	—	—	○	×	×	—	○	—	—	—	—	—	—	○	—	×	×	—	○	×	○	×	—	—	—	—	—	×	—
Coxliella ampla	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	○	○	○	—	—	—	—	—	—	—
— *laciniosa*	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—
— *longa*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—
— *sp.*	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—
Craterella acuta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	×	—	—	—	—	×	—	○	—	—	—	○	—	—	○	—	—	—	—	—
— *armilla*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *urceolata*	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cyttarocylis cassis	—	—	—	○	○	—	—	—	○	—	○	—	○	○	—	—	—	×	—	—	○	×	—	○	×	×	×	○	×	×	×	×	—	—	—	×	—
— *conica*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	×	○	—	—	—	—	—
— *longa*	—	×	×	×	×	—	—	×	×	×	×	×	×	×	○	×	×	○	×	—	—	×	—	—	×	—	—	—	×	×	—	—	—	—	—	×	—
— *magna*	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dadayiella acuta	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *ganymedes*	—	—	—	—	—	—	—	×	×	—	—	—	—	—	—	—	—	×	—	—	—	—	○	—	○	×	—	—	○	—	—	○	—	—	—	—	—
— *sp.*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—
Daturella magna	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—
— *stramonium*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	×	—	—	—	—	—	—
Dictyocysta dilatata	—	×	—	○	—	—	×	—	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	×	×	×	×	×	×	×	×	×	—	×	○	×	○
— *duplex*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—
— *elegans*	—	—	—	—	×	—	—	—	—	—	×	—	—	—	×	—	—	×	—	—	—	—	×	—	—	—	—	—	—	—	×	—	—	○	—	—	—
— *minor*	—	○	—	○	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *mülleri*	—	—	—	○	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	○	—	—	—	—	—	—
— *reticulata*	—	—	○	×	×	—	—	×	×	—	×	×	×	×	×	×	×	×	×	—	×	○	×	×	○	×	×	×	×	×	×	○	—	○	×	×	○
— *speciosa*	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	×	×	×	—	○	×	×	—	—	—	—	—	—	—	—	—
Epiplocylis acuminata	—	×	—	×	×	—	×	×	×	×	×	×	×	×	—	×	×	—	—	—	×	×	●	×	×	×	×	×	×	×	×	×	—	×	×	—	—
— *acuta*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—
— *blanda*	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	●	—	—	—	×	—	—
— *brandti*	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—
— *constricta*	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *nervosa*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	○	—	—	—	—	—	—
Metacylis lucasensis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ormosella bresslaui	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *sp.*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parafavella edentata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●	×	—	—	—
Parundella aculeata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—
— *lohmanni*	—	—	—	×	—	—	—	○	×	—	×	×	—	—	—	—	×	×	×	○	—	×	—	×	×	—	×	×	×	—	—	—	—	—	—	—	—
— *longa*	—	—	—	—	○	—	—	×	×	—	—	○	—	○	○	—	○	—	—	—	×	×	×	×	×	×	×	×	×	×	—	×	—	—	×	—	—	—
Petalotricha ampulla	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	×	×	×	×	○	—	—	×	×	—	—	○	—	—	—	—	—	—
— *major*	—	×	—	×	—	—	—	○	×	—	○	○	×	×	—	—	—	—	×	—	—	—	—	—	×	×	—	×	×	×	×	○	—	—	○	×	—
Poroecus apiculatus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—	○	—	—	—	—	—	—	—	○	—	×	—	—	—	—	○	—
— *curtus*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	○	—	—	—	—	—	—	○	—	—	—	—	—	—	—	—	—

Table III. (Cont.)

Station	44			46		48	49c			50			51		53			54	58	Fayal	59		60		63				64			65	66			68	69
Depth in metres	100—0	200—100	100—0	500—200	200—100	0	100—0	200—100	500—200	100—0	200—100	500—200	100—0	200—100	100—0	200—100	500—200	200—0	200—0	0	50—0	200—0	100—0	500—200	100—0	200—100	500—200	200—0	200—0	200—100	100—0	200—0	500	100—0	500—200	200—0	200—0
Poroecus sp. (?)	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Proplectella acuta	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	—	—	—	—	—	—	—	—	—	—	—	—	—
— *claparèdei*	—	—	—	×	●	—	—	—	—	—	×	●	×	×	×	—	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	—	×	O	×	—
— *ellipsoida*	—	—	—	×	—	—	—	—	—	—	×	×	×	×	×	—	O	×	×	—	×	×	×	×	×	×	×	—	—	×	O	—	—	—	—	—	—
— *fastigata*	×	×	—	×	●	—	×	×	×	O	×	●	×	×	×	×	×	×	—	—	×	×	×	—	×	×	O	×	×	×	×	×	—	—	—	—	—	—
— *ovata*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—
— *praelonga*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ptychocylis obtusa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *urnula*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rhabdonella amor	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	O	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *brandti*	—	—	—	—	—	—	×	—	×	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—
— *chavesi*	—	×	—	×	—	●	—	—	—	—	—	—	×	×	—	—	—	—	—	—	—	—	—	—	×	×	O	×	×	O	×	—	—	—	—	—	—
— *conica*	—	×	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	×	—	—	—	—	—	—	O	—
— *elegans*	—	×	—	×	×	—	—	—	—	×	—	×	×	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	×	—	—	—	—	—	—
— *hebe*	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—
— *henseni*	—	—	—	×	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rhabdonellopsis apophysata	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *longicaulis*	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—
— *sp.*	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salpingacantha ampla	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salpingella acuminata	—	—	—	—	—	—	×	—	O	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—
— *curta*	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	×	×	—	—	—	—	—	—	—	—	—
— *gracilis*	—	—	—	×	O	—	—	O	—	×	×	—	×	×	×	—	×	×	×	—	—	×	×	—	×	O	—	O	×	—	×	O	—	—	—	O	—
Steenstrupiella steenstrupi	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	×	×	×	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stelidiella stelidium	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stenosemella oliva	—	—	—	—	—	—	—	O	—	—	—	—	O	—	—	—	—	—	—	—	O	O	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *ventricosa*	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tintinnopsis beroidea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●	O	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *coronata*	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tintinnus apertus	—	—	—	—	—	—	—	—	—	—	—	—	×	—	O	—	—	—	—	—	—	—	×	—	—	—	—	—	×	—	—	—	—	—	—	—	—
— *elongatus*	—	—	—	×	×	O	—	—	—	×	—	—	×	×	×	—	O	×	×	O	×	×	—	—	×	O	×	—	×	×	×	×	—	O	—	×	—
— *fraknói*	—	—	—	×	—	O	—	—	—	O	×	—	×	×	×	—	O	×	×	×	×	×	×	×	×	O	×	×	—	×	×	×	—	O	—	×	—
— *latus*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Undella dilatata	—	—	—	×	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—
— *hyalina*	—	—	—	×	×	—	—	×	×	O	×	×	×	×	×	—	×	×	×	—	—	O	O	×	O	—	×	×	×	×	×	×	—	—	—	×	—
Undellopsis marsupialis	—	O	—	×	—	—	—	—	O	—	—	—	—	×	—	—	×	—	×	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *tricollaria*	—	—	—	O	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Xystonella lohmanni	—	—	—	O	—	—	—	—	×	—	—	×	—	×	—	×	×	×	×	×	×	×	×	×	×	×	×	×	O	—	O	×	—	—	O	—	—
— *treforti*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	O	—	×	—	×	×	×	×	×	O	×	—	—	—	—	—	×	×
Xystonellopsis armata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—
— *crassispinosa*	—	×	—	O	×	—	—	O	—	—	—	—	—	×	×	—	—	×	O	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—
— *cymatica*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	×	—	—	—	—	—	—	O	—
— *dicymatica*	—	O	—	×	—	—	—	O	—	—	O	—	—	O	—	—	—	—	—	—	—	—	O	—	O	—	—	—	O	—	—	—	—	—	—	×	—
— *epigrus*	—	—	—	×	—	—	—	×	—	—	×	—	—	—	—	×	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—
— *gaussi*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	O	—
— *hastata*	—	—	—	×	—	—	—	—	—	—	×	—	O	—	—	×	—	—	—	—	—	—	×	—	—	×	—	—	—	—	—	—	—	—	—	—	—
— *inaequalis*	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *paradoxa*	—	×	—	×	●	—	—	×	×	O	×	×	—	×	×	—	—	×	×	—	—	×	×	—	×	O	—	×	×	×	×	O	—	—	—	×	—
— *spicata*	—	×	—	×	—	—	—	×	—	×	×	×	×	×	—	—	—	—	O	—	—	—	—	—	—	—	—	—	×	O	×	O	—	—	—	—	—

Table IV. *The Newfoundland Banks.* (*June 30th-July 11th*).
Date and position of the stations are given on p. 4.
○ singly, × present, ● abundant.

Station	70			76	77		80	
Depth in metres	100—0	350—150	20—0	100—0	50—0	150—50	50—0	200—50
Acanthostomella norvegica	—	×	—	×	×	×	—	—
Codonella amphorella	—	—	—	—	—	—	—	○
Codonellopsis lagenula	—	—	—	—	—	—	—	○
Craterella obscura	—	—	—	—	—	○	—	—
Dictyocysta dilatata	—	—	—	—	—	—	—	×
— *elegans*	—	—	—	—	—	—	—	×
Epiplocylis acuminata	—	—	—	—	—	—	—	○
Parafavella denticulata	×	×	×	×	×	×	—	×
— *edentata*	×	○	—	—	×	●	×	×
Parundella lohmanni	—	×	—	—	—	—	—	×
Petalotricha ampulla	—	—	—	—	—	—	—	×
Proplectella claparèdei	—	—	—	—	—	—	—	×
— *fastigata*	—	—	—	—	—	—	—	×
Ptychocylis obtusa	●	●	●	×	×	×	—	×
— *urnula*	—	×	○	×	×	×	—	×
Rhabdonella amor	—	—	—	—	—	—	—	○
Salpingella acuminata	—	—	—	—	—	×	—	×
— *gracilis*	—	—	—	—	×	—	—	—
Xystonella treforti	—	—	—	—	—	—	—	×

Table V. *The northern Atlantic section.* (*July 12th—23rd*). *Ireland—Rockall—Shetland.* (*August 4th—10th*).

Date and position of the stations are given on p. 4. o singly, × present, ● abundant.

Station	81a			83	84	85		86	87			88				90		92		97	98	99		103	
Depth in metres	50—0	100—0	200—100	100—0	0	100—0	200—100	10	1000—0	100—0	200—100	100	1000—0	100—0	200—40	100—0	200—100	50—0	200—50	50—0	100—0	130—50	50—0	50—0	150—50
Acanthostomella norvegica	×	—	o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×
Amphorella quadrilineata	×	—	—	—	—	×	×	—	—	×	—	—	—	—	o	—	—	—	—	—	—	—	—	—	—
Climacocylis sp.	o	—	—	—	—	—	—	—	—	×	×	—	—	×	×	×	×	×	×	—	—	—	—	—	—
Codonella amphorella	×	o	o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *elongata*	×	—	×	—	—	—	—	—	o	×	×	×	—	×	×	×	×	×	×	—	—	—	—	—	—
— *oceanica*	—	—	×	—	—	—	—	—	—	×	×	×	—	×	×	—	—	—	—	—	—	—	—	—	—
Codonellopsis lagenula	o	—	—	—	—	×	×	—	×	o	×	o	—	×	o	×	×	×	×	—	—	—	—	—	—
Coxliella ampla	×	—	o	—	—	o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Craterella obscura	—	—	—	—	—	—	—	—	—	—	—	o	—	—	—	—	—	—	—	—	—	—	—	—	—
— *urceolata*	×	—	o	×	×	×	o	—	—	×	—	×	—	×	—	×	—	—	—	—	—	—	—	—	—
Cyttarocylis longa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—
Dadayiella ganymedes.....	×	—	×	o	o	o	o	—	—	×	o	×	—	×	o	×	—	o	o	—	—	—	—	—	—
Daturella gaussi	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	o	—	—	—	—	—	—	—	—
Dictyocysta dilatata	×	×	×	×	×	×	×	—	o	×	×	×	—	×	×	—	—	—	—	—	—	—	—	—	—
— *reticulata*	o	—	—	—	—	—	×	—	—	—	×	—	—	—	—	—	—	—	×	—	—	—	—	—	—
— *speciosa*	×	—	o	×	×	×	×	—	—	×	×	—	—	×	×	●	●	o	×	—	—	—	—	—	—
Epiplocylis acuminata	×	—	×	×	—	×	×	—	o	×	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Helicostomella subulata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	o
Parafavella denticulata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	o	●
— *edentata*	×	—	×	—	—	—	×	—	—	—	o	—	—	—	—	—	—	×	×	o	—	—	—	×	o
Parundella aculeata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	o
— *grandis*	—	—	o	—	×	×	×	—	o	—	×	×	—	×	×	—	o	—	—	—	—	—	—	—	—
— *lohmanni*	—	—	×	—	o	×	×	—	—	×	×	—	—	—	o	—	×	—	×	—	—	—	—	—	o
— *longa*.....	×	—	×	—	×	×	×	—	o	×	×	—	—	×	—	×	o	—	×	—	—	—	—	—	—
Petalotricha ampulla	×	o	×	×	—	×	×	—	—	×	×	—	—	o	o	—	o	—	—	—	—	—	—	—	—
— *major*	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Proplectella acuta	o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *claparèdei*.....	×	—	×	×	—	o	×	—	—	×	×	o	—	o	×	—	×	—	×	—	—	—	—	—	—
— *ellipsoida*	—	—	—	—	—	—	—	—	—	×	—	o	—	×	×	o	—	—	—	—	—	—	—	—	—
— *fastigata*	—	—	—	—	—	—	o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ptychocylis obtusa	×	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— *urnula*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×
Rhabdonella amor	o	—	—	—	×	o	—	—	—	×	o	×	—	—	—	o	o	—	—	—	—	—	—	—	—
— *chavesi*.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	o	—	—	—	—	—	—	—	—	—	—
— *conica*	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	×	×	×	o	—	—	—	—	—	—
— *hebe*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	×	×	×	×	—	—	—	—	—	—
Salpingacantha undata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	o	—	—	—	—	—	—	—
Salpingella acuminata	—	—	o	—	o	o	—	—	—	×	—	—	o	—	—	×	—	—	—	—	—	—	—	o	×
— *decurtata*	—	—	—	—	—	—	—	—	—	o	—	—	—	—	—	o	—	—	—	—	—	—	—	—	—
— *gracilis*	o	—	—	—	—	×	×	—	—	×	—	—	—	×	o	×	×	×	×	—	o	—	—	—	—
— *sp*.....	—	—	o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steenstrupiella steenstrupi	×	—	—	—	—	×	o	—	—	×	—	—	—	—	—	×	o	×	—	—	—	—	—	—	—
Stenosemella ventricosa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—
Tintinnopsis beroidea	—	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—
Tintinnus elongatus	×	—	—	—	—	—	—	—	—	×	×	—	—	×	×	×	×	×	×	—	—	—	—	—	—
— *fraknói*	—	—	—	—	—	—	—	—	—	×	×	—	—	×	×	×	×	×	×	—	—	—	—	—	—
— *pinguis*	o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Xystonella lohmanni	×	—	×	—	—	×	×	—	—	o	×	—	—	×	×	×	×	×	×	—	—	—	—	—	—
— *treforti*	×	—	—	—	—	o	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—
Xystonellopsis spicata.....	—	—	—	—	—	—	—	—	—	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—