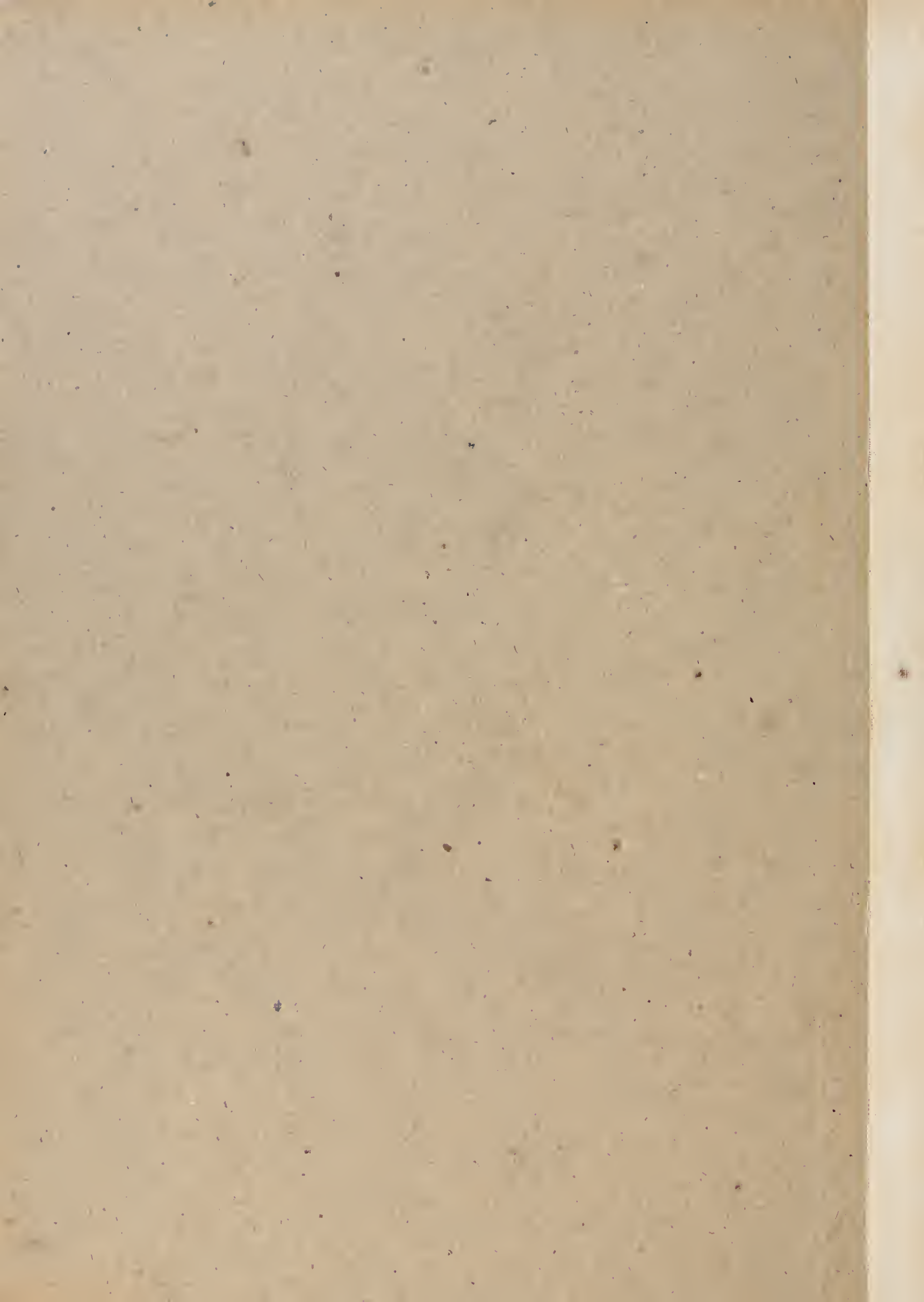


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THE DANISH
INGOLF-EXPEDITION.

VOL. IV, PART 3.

CONTENTS:

RUDOLF VON RITTER-ZÁHONY: CHAETOGNATHS.

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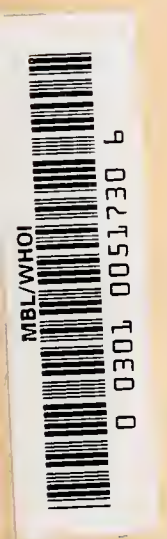


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3.

CHAETOGNATHS.

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Chaetognaths

By

Rudolf von Ritter-Záhony.

The Sagitta material of the Ingolf Expedition, which Director G. M. R. Levinsen kindly transmitted to me for investigation, comes from the North Atlantic Ocean between Greenland and Norway and from the Davis Strait. It consists of vertical and surface hauls. Of the former I give a summary at the end of this paper; the results of the latter are only referred to in the text. Along with the "Ingolf" material I have also examined a larger collection of Chaetognaths, well-preserved in formaline, which was made on the cruises of the "Thor" in the North Atlantic during the years 1904—1907. The second list at the end of the paper gives the details of this collection.

In view of the thorough investigations, which have been made within recent years into the classification and distribution of the Chaetognaths, the material handed over to me could not be expected to contain any great novelty and, as a matter of fact, only known forms occurred, the horizontal and vertical distribution of which had already been elucidated. Only some few places are new for the species obtained, but they do not alter the picture of their distribution which earlier observations had given.

In the following I mention the species taken as also their occurrence in the hauls of the "Ingolf" and the "Thor", restricting myself otherwise to some few faunistic remarks. I can do this the more readily, since the systematic and faunistic characterization of the Chaetognath species has but recently been brought up to date in the "Tierreich" (29. Lieferung 1911), to which as also for the literature reference may be made.

Sagitta setosa J. Müll.

This epiplanktonic-neritic species, which has hitherto only been observed in the Channel and in the region of the North Sea, was frequently represented in the surface hauls of the "Ingolf" from the Skagerrak and the North Sea; in addition also from one station west of the Orkney Isles. This



place is new for the species. It does not occur in the vertical hauls of the "Ingolf", but appears in some of the "Thor"s, which were made in the North Sea, Skagerrak and Kattegat all from shallow depths.

Sagitta elegans Verrill

Represented everywhere in the regions investigated by the "Ingolf" both in the vertical and surface hauls. The "Thor" more rarely took this species, which is however very common in the North Atlantic Ocean.

Sagitta maxima (Conant)

Almost regular in its occurrence in the vertical hauls of both Expeditions from greater depths, twice — "Ingolf" St. 26, "Thor" St. 102 (1904) — some very young specimens also from shallower. In spite of this occasional occurrence of the species in the epiplankton, assuming that no mistake is contained in the data given me, the mesoplankton must be considered its true region of distribution according to all other observations.

Sagitta lyra Krohn

On the Ingolf Expedition only once taken in the North Atlantic at 62° N. L., 21°36' W. L. from 100 fathoms; the "Thor" obtained it at several places in at least 150 m.

Sagitta planctonis Steinhaus

The only station of the "Ingolf", where this species was observed, is a vertical haul from the Davis Strait at 63°6' N. L., 56° W. L. from a depth of 200 fathoms. In the deeper hauls of the "Thor" on the other hand it frequently occurs. Station 152 (1904) 65° N. L., 18°10' W. L. is at the same time the northernmost point at which *S. planctonis* has hitherto been observed.

Sagitta macrocephala Fowler

Only taken in two hauls of the "Thor" from 900 m. (St. 180, 1904) and 1400 m. (St. 76, 1906) (Cf. *Eukrohnia fowleri*).

Eukrohnia hamata (Möb.)

Appears almost regularly in the vertical hauls of the "Ingolf" and "Thor"; also several times in the surface hauls of the former Expedition.

Eukrohnia fowleri Ritt.-Z.

The two hauls from which *S. macrocephala* was obtained also contained *E. fowleri*. One of these stations (180, 1904) at 61°34' N. L. lying south of Island is the northernmost point at which these cosmopolitan deep-sea species have hitherto been directly observed. Station 71 of the "Thor" (1905) also contains *E. fowleri* but not *S. macrocephala*.

List of the vertical hauls of the "Ingolf"

(The occurrence of a species is indicated by X)

St. No.	N. L.	W. L.	Depth of the haul in fathoms	<i>S.</i> <i>elegans</i>	<i>S.</i> <i>maxima</i>	<i>S.</i> <i>lyra</i>	<i>S.</i> <i>planctonis</i>	<i>E.</i> <i>hamata</i>	
1	62°30'	8°21'	50	X	...	...	...	...
2	63°4'	9°22'	30	X	...	...	...	...
3	63°35'	10°24'	100	X	...	...	...	...	North Atlantic between the Faeroes and Iceland.
4	64°7'	11°12'	100	...	...	...	...	X	
6	63°43'	14°34'	50	...	...	...	...	X	
10	64°24'	28°50'	200	...	...	...	...	X	Denmark Strait
11	64°34'	31°12'	200	...	X	...	...	X	
17	62°49'	26°55'	200	...	X	...	...	X	
18	61°44'	30°29'	200	...	X	...	...	X	North Atlantic
19	60°29'	34°14'	300	...	X	...	...	X	
20	58°20'	40°48'	200	...	X	...	...	X	
22	58°10'	48°45'	200	...	...	...	...	X	
24	63°06'	56°0'	200	...	X	...	X	X	
26	63°57'	52°41'	20	...	X	...	...	X	
28	65°14'	52°42'	100	...	X	...	...	X	Davis Strait
32	66°35'	56°38'	100	X	...	...	...	X	
34	65°17'	54°17'	40	X	...	...	...	...
40	62°0'	21°36'	100	...	X	X	...	X	
45	61°32'	9°43'	100	...	X	...	...	X	
47	61°32'	13°40'	100	...	X	...	...	X	
49	62°7'	15°7'	100	...	X	...	...	X	
52	63°57'	13°32'	200	...	X	...	...	X	
53	63°15'	15°7'	100	...	X	...	...	X	
54	63°8'	15°40'	100	...	X	...	...	X	
55	63°33'	15°2'	100	...	...	...	...	X	North Atlantic
57	63°37'	13°2'	100	X	X	...	...	X	
58	64°25'	12°9'	100	...	...	...	...	X	
59	65°0'	11°16'	100	X	...	...	...	X	
63	62°40'	19°15'	100	...	X	...	...	X	
68	62°06'	22°30'	100	...	X	...	...	X	
94	64°56'	36°19'	100	...	X	...	...	X	
97	65°28'	27°39'	?	...	X	...	...	X	
101	66°23'	12°5'	100	X	...	...	...	X	
102	66°23'	10°26'	100	X	...	...	...	X	
103	66°23'	8°52'	100	?	...	...	...	X	East of Iceland
104	66°23'	7°25'	?	...	...	...	...	X	
105	65°34'	7°31'	100	...	...	...	...	X	
117	69°13'	8°20'	100	...	...	...	...	X	South of Jan Mayen
118	68°27'	8°20'	100	...	...	...	...	X	
120	67°29'	11°32'	100	X	...	...	...	X	East of Iceland
121	66°59'	13°11'	100	X	...	...	...	X	



List of the hauls of the "Thor"

St. No.	Date	N. L.	Long.	Depth of the haul in meters									E. hamata	E. fowleri	
					S. setosa	S. elegans	S. maxima	S. lyra	S. planctonis	S. macrocephala					
187	17. II. 04	57°40'	9°12' E.	20	...	×	...	...	...	...	...	...	...	...	Skagerrak
206	5. III. 04	57°15'	10°43' E.	15	...	×	...	...	...	...	...	...	...	...
26	22. IV. 04	65°29'	24°36' W.	8	...	×	...	...	...	...	...	...	...	...	Denmark Strait
42	27. IV. 04	64°34'	13°56' W.	8	...	×	...	...	...	...	...	...	...	...
58	3. V. 04	64°35'	11°45' W.	8	...	×	...	...	...	...	...	...	...	...
63	5. V. 04	64°5'	9°38' W.	150	...	×	...	...	...	...	...	×	...	...
70	9. V. 04	63°33'	6°20' W.	500	...	...	×	...	...	...	...	×	...	...
71	9. V. 04	63°6'	6°20' W.	1250	...	...	×	...	...	...	...	×	...	...	North Atlantic
78	12. V. 04	61°8'	9°28' W.	700	...	...	×	...	...	...	...	...	...	...
99	22. V. 04	61°15'	9°35' W.	850	...	...	×	...	×	...	...	×	...	...
100	22. V. 04	61°21'	10°59' W.	90	...	...	×	...	...	...	...	×	...	...
102	23. V. 04	61°41'	13°31' W.	8	...	...	×	...	...	...	...	×	...	...
104	25. V. 04	62°47'	15°3' W.	750	...	...	×	×	...	...	...	×	...	...
150	18. VI. 04	65°50'	26°53' W.	200	...	...	×	...	...	...	...	×	...	...
152	18. VI. 04	65°0'	28°10' W.	400	...	...	×	...	×	...	...	×	...	...	Denmark Strait
153	20. VI. 04	65°20'	27°12.5' W.	50	...	...	×	...	...	...	...	×	...	...
154	20. VI. 04	65°27'	27°10' W.	400	...	...	×	...	...	...	...	×	...	...
178	7. VII. 04	63°08'	21°30' W.	380	...	...	×	...	...	...	...	×	...	...
180	10. VII. 04	61°34'	19°5' W.	900	...	...	×	...	×	×	...	×	×	...	South of Iceland
183	11. VII. 04	61°30'	17°8' W.	900	...	...	×	...	×	...	...	×	...	...
214	22. VII. 04	67°19'	17°55' W.	400	...	...	×	...	...	...	...	×	...	...	North of Iceland
230	4. VIII. 94	63°10'	7°31' W.	600	...	...	×	...	...	...	...	×	...	...	North of the Faeroes
270	10. VIII. 04	66°19'	23°27' W.	35	...	×	...	...	...	...	...	...	...	...	Denmark Strait
285	1. IX. 04	62°49'	18°46' W.	250	...	...	×	...	...	...	...	×	...	...	South of Iceland
286	2. IX. 04	61°49'	14°11' W.	400	...	...	×	...	...	...	...	×	...	...	North Atlantic
366	7. IV. 05	57°44'	11°15' E.	40	×	...	...	...	...	...	...	...	...	...	Skagerrak
61	28. V. 05	61°11'	11°6' W.	450	...	...	...	...	×	...	...	...	...	...	North Atlantic
71	7. VI. 05	57°47'	11°33' W.	750	...	...	×	×	×	...	...	×	×	...	West of the Hebrides
72	8. VI. 05	57°52'	9°53' W.	500	...	...	×	×	×	...	...	...	...	...
82	15. VI. 05	51°0'	11°43' W.	600	...	...	...	...	×	...	...	×	...	...	South-west of Ireland
124	23. VII. 05	61°4'	4°33' W.	500	...	...	×	...	...	...	...	×	...	...
163	28. VIII. 05	62°36'	12°5' W.	150	...	...	×	...	...	...	...	×	...	...	North Atlantic
165	29. VIII. 05	60°0'	10°35' W.	500	...	...	×	...	...	...	...	...	...	...
167	1. IX. 05	57°46'	9°55' W.	750	...	...	×	×	×	...	...	×	...	...	West of the Hebrides
171	5. IX. 05	57°22'	1°33' E.	33	×	...	...	...	...	...	...	...	...	...	North Sea
172	6. IX. 05	57°33'	4°26' E.	33	×	...	...	...	...	...	...	...	...	...
175	7. IX. 05	57°11'	11°34' E.	33	×	...	...	...	...	...	...	...	...	...	Kattegat
52	21. V. 06	48°43'	12°5' W.	150	...	...	×	×	×	...	...	×	...	...
65	6. VI. 06	49°4'	14°52' W.	150	...	...	×	×	×	...	...	×	...	...	North Atlantic
76	11. VI. 06	49°27'	13°33' W.	1400	...	...	×	×	×	×	...	×	×	...
938	9. IV. 07	57°52'	8°44' W.	300	×	
939	11. IV. 07	58°8'	9°34' W.	300	×	West of the Hebrides
1039	6. V. 07	58°18'	10°7' W.	300	×	



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