DEN NORSKE NORDHAVS-EXPEDITION

1876—1878.

ZOOLOGI.

CRUSTACEA,

I.

VED

G. O. SARS.

MED 21 PLANCHER OG 1 KART.

CHRISTIANIA.
GRØNDAHL & SØNS BOGTRYKKERI.
1885.

THE NORWEGIAN NORTH-ATLANTIC EXPEDITION

1876—1878.

ZOOLOGY.

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I.

BY

G. O. SARS.

WITH 21 PLATES AND 1 MAP.



CHRISTIANIA.
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1885

Indholdsfortegnelse.

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Ved Bearbeidelsen af det særdeles vidtløftige Materiale af Crustaceer, indsamlede og iagttagne under Expeditionen, har jeg fundet det praktisk rigtigt at dele min Afhandling i tre Afsnit. I 2det Afsnit gives en fuldstændig systematisk Fortegnelse over samtlige under Expeditionen iagttagne Arter med Angivelse af Findested samt korte Bemærkninger om Forekomst og Udbredning. I sidste Afsnit meddeles de mere almindelige Slutninger, hvortil Studiet af Nordhavsexpeditionens Crustaceer har ledet, dels i Henseende til Faunaens almindelige Character, dels til dens supponerede Bevægelse (Ind- og Udvandring af Dyreformer) samt de physiske og meteorologiske Forhold, som herved synes at være bestemmende. Første Afsnit er derimod kun forbeholdt udførlige Beskrivelser af nogle enkelte Former, der enten er nye for Videnskaben eller hidtil mindre fuldstændigt beskrevne og afbildede. Herved er dog at mærke, at jeg ialmindelighed ikke har indbefattet herunder de Former, som tidligere er constaterede som tilhørende Norges Kystfauna. Disse sidste vil paa et andet Sted blive udførligt omhandlede, nemlig i et større faunistisk Arbeide over Norges Crustaceer, som jeg med det allerførste agter at paabegynde.

Til de medfølgende Plancher har jeg selv udført alle Figurer og overalt herved anvendt Camera lucida, hvorved deres Nøjagtighed er garanteret. Til Grund for de fleste Habitusfigurer ligger colorerede Tegninger udførte af mig under selve Expeditionen efter friskt indfangede og endnu levende Exemplarer.

De her beskrevne nye Former er tidligere kortelig blevne characteriserede i følgende to paa Latin affattede foreløbige Afhandlinger, begge indførte i "Archiv for Mathematik og Naturvidenskab":

1. Prodromus descriptionis Crustaceorum et Pycnogonidarum, qvæ in Expeditione Norvegica anno 1876 observavit G. O. Sars.

2. Crustacea et Pycnogonida nova in itinere 2do et 3tio Expeditionis Norvegicæ anno 1877 & 1878 collecta. (Prodromus descriptionis).

For at undgaa Gjentagelser ved Opgivelsen af Findestederne, meddeles nedenfor en Tabel over alle de Stationer, paa hvilke Bundskrabe eller Trawl har været anvendt, med

In working up the very extensive material embracing the Crustaceans collected and observed on the Norwegian North-Atlantic Expedition, practical reasons have induced me to divide my Memoir into three sections. The second section gives a complete systematic enumeration of the species observed on the Expedition, as also a statement of the localities where found, together with brief remarks on occurrence and distribution. In the third section are set forth the chief conclusions to which a study of the Crustacea from the North-Atlantic Expedition has led, partly in regard to the general character of the Fauna, and partly with reference to its supposed movements (migration of animal forms), as also to the physical and meteorological conditions which appear to determine the occurrence of species. The first section has been devoted exclusively to detailed descriptions of certain forms either new to science or which, up to the present time, have been incompletely diagnosticated and figured. Meanwhile, I must not fail to observe, that as a rule I have not included forms previously established as belonging to the Norwegian littoral fauna. Such forms will be fully treated of elsewhere, viz. in a work on the Crustacea of Norway, which I purpose beginning at an early date.

For the Plates accompanying this Memoir, all of the figures were furnished by myself; and the use, without exception, of the Camera Lucida affords a sufficient guarantee for their accuracy. Most of the habitus-representations are facsimiles of coloured drawings, executed by myself on the several cruises of the Expedition, from fresh and living specimens.

The new forms described in the first section of this Memoir are briefly characterized in the two following preliminary papers, both published in "Archiv for Mathematik og Naturvidenskab": —

1. — Prodromus descriptionis Crustaceorum et Pycnogonidarum, qvæ in Expeditione Norvegica anno 1876 observavit G. O. Sars.

2. — Crustacea et Pycnogonida nova in itinere 2do et 3tio Expeditionis Norvegicæ anno 1877 & 1878 collecta (Prodromus descriptionis).

To avoid repetition in stating the localities, I have given below a List of all the Stations at which the dredge or the trawl was used, along with the date, position of the

Angivelse af Datum, Beliggenhed, Dybde, Bundtemperatur, Bundens Beskaffenhed og Fangstredskabets Art. Paa meget faa Undtagelser nær, haves fra alle disse Stationer Crustaceer. Desuden er ved Hjælp af Overfladenettet indsamlet pelagiske Former fra mange andre Stationer, som her ikke er anførte. Paa de til Slutning anførte Kyststationer har en mindre Skrabe været anvendt fra Baad af eller fra det for Anker liggende Dampskib.

De i Tabellen anførte Stationer er alle nøjagtigt afsatte paa det vedføjede Kart, hvor tillige Dybdecurverne for 500, 1000, 1500 og 2000 Favne er optrukne som punkterede Linier. Fremdeles er angivet paa Kartet en stærkere markeret Curve, der betegner Grændsen mellem den kolde og tempererede Area, beregnet efter Bundtemperaturen. Denne Curve danner tillige den naturlige Begrændsning for den indtil 2000 Favne dybe, i Bunden med iskoldt Vand fyldte Havdal, der fra det arktiske Hav skyder sig ned mellem Norge og Island og i Form af en smal Kile ender i den saakaldte Færø-Shetlands Rende, hvor den ved en smal Tværryg er skilt fra det udenfor liggende store Atlanterhavsdyb.

vessel, depth, bottom-temperature, nature of bottom and character of apparatus. With but very few exceptions, Crustaceans were obtained at all of these Stations. Moreover, pelagic forms were collected with the surface-net at many other Stations not included in the List. At the Coast Stations enumerated in conclusion, a smaller dredge was made use of, either from a boat or from the ship when lying at anchor.

The Stations enumerated in the List have all been accurately set off on the annexed Map, in which the curves of depth for 500, 1000, 1500, and 2000 fathoms are drawn as dotted lines. In the Map will also be found a more strongly marked curve, indicating the boundary line between the cold and temperate areas, determined from the observed bottom-temperatures. This curve also forms the natural limit of the ocean valley — reaching 2000 fathoms in depth and filled at the bottom with ice-cold water — which shelves from the Polar Sea to the tract between Norway and Iceland and in the form of a narrow wedge terminates in the so-called Færoe-Shetland channel, where it is cut off by a narrow transverse ridge from the great depths of the Atlantic.

Zoologiske Stationer.
(Zoological Stations.)

Station No.	Datum. (Date.)	Nordlig Bredde. (North Latitude.)	Længde fra Greenwich. (Longitude.)	Dybde (Depth) Engl. Favne. (Fathoms.)	Dybde (Depth) Meter. (Metres.)	Bundens Temperatur. (Temperature at Bottom.) C.	Bunden.	Bottom.	Apparat. (Apparatus.) S. Skrabe. (Dredge.) T. Trawl. s. Svabere. (Swabs.)
	1876								
1	Juni 3	61° 13′	6° 36′ E.	650	1189	6.°6	Sandler.	Sabulous Clay.	S.
2	*(June)* 3	61 10	6 32 E.	672	1229	6. 7	Sandler.	Sabulous Clay.	T.
4	„ 8	61 5	5 14 E.	566	1035	6. 6	Sandler, Grus, Singel.	Sabulous Clay, Pebbles.	T.
8	„ 9	61 0	4 49 E.	200	366	6. 6	Ler, Sand, Sten.	Clay, Sand, Stones.	S.
9	„ 20	61 30	3 37 E.	206	377	5. 9	Ler.	Clay.	T.
10	„ 21	61 41	3 19 E.	220	402	6. 0	Slik, Ler.	Ooze, Clay.	T.
18	„ 21	62 44	1 48 E.	412	753	—1. 0	Ler.	Clay.	S. T.
23	„ 23	62 52	5 50 E.						T.
25	„ 28	63 10	5 25 E.	98	179	6. 9	Sandler.	Sabulous Clay.	T. S.
26	„ 28	63 10	5 16 E.	237	433	7. 1	Sandler.	Sabulous Clay.	S.
31	„ 29	63 10	5 0 E.	417	763	—1. 0	Sandler.	Sabulous Clay.	S. T.
33	„ 30	63 5	3 0 E.	525	960	—1. 1	Ler.	Clay.	T. S.
34	Juli 1	63 5	0 53 E.	587	1073	—1. 0	Ler.	Clay.	T.
35	*(July)* 5	63 17	1 27 W.	1081	1977	—1. 0	Biloculinler.	Biloculina Clay.	S.
40	„ 18	63 22	5 29 W.	1215	2222	—1. 2	Biloculinler.	Biloculina Clay.	S. T.
48	Aug. 6	64 36	10 22 W.	299	547	—0. 3	Mørkgraat Ler.	Dark-grey Clay.	s.
51	„ 7	65 53	7 18 W.	1163	2127	—1. 1	Biloculinler.	Biloculina Clay.	S.
52	„ 8	65 47	3 7 W.	1861	3403	—1. 2	Biloculinler.	Biloculina Clay.	T.
53	„ 10	65 13	0 33 E.	1539	2814	—1. 3	Biloculinler.	Biloculina Clay.	S & T.
54	„ 12	64 47	4 24 E.	601	1099	—1. 2	Biloculinler.	Biloculina Clay.	S & T.
79	„ 21	64 48	6 32 E.	155	283	6. 9	Sandler.	Sabulous Clay.	S.
87	„ 22	64 2	5 35 E.	498	911	—1. 1	Ler.	Clay.	S.
92	„ 22	64 0	6 42 E.	178	326	7. 2	Sandholdigt Ler.	Sabulous Clay.	T.
93	„ 24	62 41	7 8 E.	158	289	6. 4	Blød Ler.	Soft Clay.	T.
		(Romsdalsfjord).							

Station No.	Datum. (Date.)	Nordlig Bredde. (North Latitude.)	Længde fra Greenwich. (Longitude.)		Dybde. (Depth) Eng. Favne. (Fathoms.)	Dybde. (Depth) Meter. (Metres.)	Bundens Temperatur. (Temperature at Bottom.) C.	Bunden.	Bottom.	Apparat. (Apparatus.) S. Skrabe. (Dredge.) T. Trawl. s. Svabere. (Swabs.)
	1877									
96	Juni 16	66° 8′	3° 0′	E.	805	1472	—1.°1	Biloculinler.	Biloculina Clay.	S.
101	*(June)* 17	65 36	8 32	E.	223	408	6. 0	Sandler.	Sabulous Clay.	S.
124	„ 19	66 41	6 59	E.	350	640	—0. 9	Grovkornet Ler.	Coarse Clay.	S. T.
137	„ 21	67 24	8 58	E.	452	827	—1. 0	Ler.	Clay.	S. T.
147	„ 22	66 49	12 8	E.	142	260	6. 2	Graat Ler.	Grey Clay	S.
149	„ 23	67 52	13 58	E.	135	247	4. 9	Ler.	Clay.	T. S.
		(Vestfjord).								
164	„ 29	68 21	10 40	E.	457	836	—0. 7	Sandler.	Sabulous Clay.	S. T.
173b	Juli 3	69 18	14 32	E.	300	549	4. 6	Ler, Sten.	Clay, Stones.	S.
175	*(July)* 2	69 17	14 35	E.	415	759	3. 0	Ler, Smaasten.	Clay, Pebbles.	S.
177	„ 3	69 25	13 49	E.	1443	2639	—1. 2	Biloculinler.	Biloculina Clay.	S & T.
183	„ 5	69 59	6 15	E.	1710	3127	—1. 3	Biloculinler.	Biloculina Clay.	S & T.
190	„ 7	69 41	15 51	E.	870	1591	—1. 2	Sandholdig Ler.	Sabulous Clay.	T.
192	„ 7	69 46	16 15	E.	649	1187	—0. 7	Sandler.	Sabulous Clay.	S.
195	„ 16	70 55	18 38	E.	107	196	5. 1	Sten. Ler.	Stones. Clay.	S.
200	„ 17	71 25	15 41	E.	620	1134	—1. 0	Ler.	Clay.	S. T.
205	„ 18	70 51	13 3	E.	1287	2354	—1. 2	Biloculinler.	Biloculina Clay.	S.
213	„ 26	70 23	2 30	E.	1760	3219	—1. 2	Biloculinler.	Biloculina Clay.	S.
223	Aug. 1	70 54	8 24	W.	70	128	—0. 6	Graasort Sandler.	Dark-grey sabulous Clay	S.
		(Jan Mayen).								
224	„ 1	70 51	8 20	W.	95	174	—0. 6	Graasort Sandler.	Dark-grey sabulous Clay	S.
225	„ 2	70 58	8 4	W.	195	357	—0. 6	Graasort Sandler.	Dark-grey sabulous Clay	S.
237	„ 3	70 41	10 10	W.	263	481	—0. 3	Brunt Ler. Stene.	Brown Clay. Stones.	S.
240	„ 4	69 2	11 26	W.	1004	1836	—1. 1	Biloculinler.	Biloculina Clay.	S.
248	„ 8	67 56	4 11	E.	778	1423	—1. 4	Biloculinler.	Biloculina Clay.	S.
251	„ 9	68 6	9 44	E.	634	1159	—1. 3	Ler.	Clay.	S.
252	„ 11	Vestfjord.						Ler.	Clay.	S.
253	„ 15	Skjerstadfjord.			263	481	3. 2	Ler.	Clay.	S.
253b	Aug. 17	Saltstrømmen.			90	165		Sten.	Stones.	S.
	1878.									
255	Juni 19	68 12	15 40	E.	341	624	6. 5	Ler.	Clay.	S.
		(Vestfjord).								
257	*(June)* 21	70 4	23 2	E.	160	293	3. 9	Ler.	Clay.	S.
		(Altenfjord).								
258	„ 21	70 13	23 3	E.	230	421	4. 0	Ler.	Clay.	T.
		(Altenfjord).								
260	„ 24	70 55	26 11	E.	127	232	3. 5	Ler.	Clay.	S. T.
		(Porsangerfjord).								
261	„ 25	70 47	28 30	E.	127	232	2. 8	Ler.	Clay.	S. T.
		(Tanafjord).								
262	„ 27	70 36	32 35	E.	148	271	1. 9	Ler.	Clay.	T. S.
267	„ 29	71 42	37 1	E.	148	271	—1. 4	Ler. Sten.	Clay. Stones.	S.
270	„ 30	72 27	35 1	E.	136	249	—0. 0	Ler.	Clay.	S.
273	Juli 1	73 25	31 30	E.	197	360	2. 2	Ler.	Clay.	S.
275	*(July)* 2	74 8	31 12	E.	147	269	—0. 4	Ler.	Clay.	T.
280	„ 4	74 10	18 51	E.	35	64	1. 1	Sten.	Stones.	S.
		(Beeren Eiland).								
283	„ 5	73 47	14 21	E.	767	1403	—1. 4	Ler.	Clay.	S.
286	„ 6	72 57	14 32	E.	447	817	—0. 8	Ler.	Clay.	T.
290	„ 7	72 27	20 51	E.	191	349	3. 5	Sandler.	Sabulous Clay.	T.
295	„ 14	71 59	11 40	E.	1110	2030	—1. 3	Biloculinler.	Biloculina Clay.	T.
297	„ 16	72 36	5 12	E.	1280	2341	—1. 4	Biloculinler.	Biloculina Clay.	T.
303	„ 19	75 12	3 2	E.	1200	2195	—1. 6	Biloculinler.	Biloculina Clay.	T.
312	„ 22	74 54	14 53	E.	658	1203	—1. 2	Ler.	Clay.	T.
315	„ 22	74 53	15 55	E.	180	329	2. 5	Ler. Sand.	Clay. Sand.	T.
322	„ 23	74 57	19 52	E.	21	38	0. 2	Haard.	Hard.	S.
323	„ 30	72 53	21 51	E.	223	408	1. 5	Ler.	Clay.	T.
326	Aug. 3	75 31	17 50	E.	123	225	1. 6	Ler.	Clay.	T.

Station No.	Datum. (Date.)	Nordlig Bredde. (North Latitude.)	Længde fra Greenwich. (Longitude.)	Dybde. (Depth.) Eng. Favne. (Fathoms.)	Dybde. (Depth.) Meter. (Metres.)	Bundens Temperatur. (Temperature at Bottom.) C.	Bunden.	Bottom.	Apparat. (Apparatus.) S. Skrabe. (Dredge.) T. Trawl. s. Svabere. (Swabs.)
333	Aug. 4	76° 6′	13° 10′ E.	748	1368	—1.°3	Biloculinler.	Biloculina Clay.	T.
336	„ 5	76 19	15 42 E.	70	128	0. 4	Ler, Haard B.	Clay. Hard Bottom.	S.
338	„ 6	76 19	18 1 E.	146	267	—1. 1	Haard.	Hard.	S.
343	„ 7	76 34	12 51 E.	743	1359	—1. 2	Ler.	Clay.	T.
350	„ 8	76 26	0 29 W.	1686	3083	—1. 5	Biloculinler.	Biloculina Clay.	T.
353	„ 10	77 58	5 10 E.	1333	2438	—1. 4	Biloculinler.	Biloculina Clay.	T.
357	„ 12	78 3	11 18 E.	125	229	1. 9	Ler.	Clay.	S.
359	„ 12	78 2	9 25 E.	416	761	0. 8	Ler.	Clay.	S.
362	„ 14	79 59	5 40 E.	459	839	—1. 0	Ler.	Clay.	T.
363	„ 14	80 3	8 28 E.	260	475	1. 1	Ler.	Clay.	T.
366	„ 17	79 35	11 17 E.	61	112	—2. 1	Ler.	Clay.	T.
„	„ „	Magdalena Bay.		37	68	—0. 2			
370	„ 18	78 48	8 37 E.	109	199	1. 1	Ler.	Clay.	T.
372	„ 19	78 9	14 7 E.	129	236	1. 2	Ler.	Clay.	T.
		(Isfjord).	*(Ice Sound).*						
374	„ 22	78 16	15 33 E.	60	110	0. 7	Ler.	Clay.	T.
		(Advent Bay).							

Kyst-Stationer.

Flesje	I den indre Del af Sogneforden.
Huso	En af de yderste Øer paa Nordsiden af Sognsjoen.
Saltnæs	Bunden af Skjerstadfjord.
Røst	Den yderste af Lofotøerne.
Tromsø	Sundet udenfor Byen.
Hammerfest . . .	Havnen.
Bossekop	Bunden af Altenfjord.
Kjosen	Bunden af Ulfsfjord Nord for Tromsø.
Thorshavn	Færoerne.
Reikjavik	Island.
Jan Mayen. . . .	Nord- og Sydside.
Adventbay	Arm af Isfjorden, Spitsbergen.
Magdalenabay . . .	Isfyldt Fjord ved Nordvestsiden af Spitsbergen.
Norske Øer . . .	Øgruppe nordenfor Spitsbergen.

Coast Stations.

Flesje	In the inner part of the Sognefjord.
Huso	One of the outermost islands on the north side of the Sognesjo.
Saltnæs	At the head of the Skjærstadfjord.
Rost	The outermost of the Lofoten Islands.
Tromsø	The sound without the town.
Hammerfest . . .	The harbour.
Bossekop	At the head of the Altenfjord.
Kjosen	At the head of the Ulfsfjord, north of Tromsø.
Thorshavn	The Færoes.
Reykjavik	Iceland.
Jan Mayen. . . .	Northern and southern shores.
Advent Bay . . .	An arm of Ice Sound, Spitzbergen.
Magdalena Bay . .	Fjord enclosed by glaciers, on the north-west coast of Spiztbergen.
The Norway Islands	A group of islands north of Spitzbergen.

I.

Beskrivelse af nye eller mindre bekjendte Arter.

Ordo Podophthalmata.

Subordo Brachyura.

Tribus Oxyrhyncha.

Fam. Majidæ.

Gen. **Scyramathia,** Alph. Milne Edwards, 1880.

Rapport sur l'Exploration scientifique du "Travailleur".

Slægtscharacteristic. Rygskjoldet triangulært, convext, oventil forsynet med spredte stumpe Forhøininger samt til hver Side fortil med en triangulær Hepaticaltorn, bagtil med en koniskt tilspidset fra Gjelleregionen udgaaende Fortsats. Pandehornet delt i to fra Roden af divergerende dolkformige Grene. Øienhulerne tydeligt begrændsede, vendte til Siderne, og oventil forsynede med et dybt Indsnit og en tilspidset Præocularfortsats. Øinene smaa, retractile. 2det Par Foleres Basalled med den ydre Kant simpel, ikke tandet, den frie Del af Skaftet smalt cylindrisk. Svøben børsteformig. De ydre Kjævefødders 4de Led (meros) meget bredt, fortil næsten lige afskaaret. Fangarmene forholdsvis smaa og svage, med smal Haand. Gangfødderne temmelig forlængede, 1ste Par længst, de 3 øvrige successivt kortere; Endekloen svagt krummet, af ens Udseende paa alle.

Almindelige Bemærkninger. Nærværende Slægt er grundet paa den nedenfor nøiere beskrevne Form, der først er noteret som en Art af Slægten *Amathia* Roux. Trods sin umiskjendelige habituelle Lighed med Arterne af denne sidste Slægt, vil dog en nøiere Undersøgelse snart lære, at den ikke er nogen ægte *Amathia*. Prof. *Alph. Milne Edwards* har først i sin foreløbige Rapport over den Franske

I.

Description of new or imperfectly known Species.

Ordo Podophthalmata.

Subordo Brachyura.

Tribus Oxyrhyncha.

Fam. Majidæ.

Gen. **Scyramathia,** Alph. Milne Edwards, 1880.

Rapport sur l'Exploration scientifique du "Travailleur".

Generic Character. — Carapax triangular, convex, furnished above with scattered obtuse protuberances, as also anteriorly, on either side, with a triangular hepatic spine, posteriorly with a conical acuminate process, issuing from the branchial region. Rostrum divided at the base into two diverging dagger-shaped branches. Orbita distinctly defined, turning sideways, and exhibiting above a deep incision, together with an acuminate preocular spine. Eyes small, retractile. Basal articulation of the 2nd pair of antennæ with the outer margin simple, not dentate; the free portion of the peduncle slender, cylindrical, flagellum setiform. Exterior maxillipeds having the 4th joint (meros) very broad, anteriorly well-nigh truncate. Chelipeds comparatively small and weak, with a slender hand. Ambulatory legs rather elongate, 1st pair longest, the 3 remaining pairs diminishing successively in length; terminal claw slightly bent, presenting the same appearance in all.

General Remarks. — The present genus is based on the form minutely described below, and first noticed as a species of the genus *Amathia* Roux. Notwithstanding the undeniable resemblance shown in its habitus to the species of this genus, a closer examination will soon prove it to be no genuine form of *Amathia*. Prof. *Alph. Milne Edwards*, in his preliminary report of the French Expedition in the

Expedition i Biscayerbugten gjort opmærksom herpaa og tillige paapeget, at den her omhandlede Form slutter sig meget nær til den af *Stimpson*[1] under Benævnelsen *Scyra umbonata* kortelig characteriserede Krabbe fra Havet om Florida. Milne Edwards foreslaar at oprette for begge disse Former en ny Slægt under ovenstaaende Navn.

Angaaende denne Slægts systematiske Stilling og Forhold til de ovrige bekjendte *Oxyrhyncher*, synes det efter Øienhulernes Bygning og andre Characterer klart, at den maa henføres til Familien *Majidæ*, i den Begrændsning hvori denne Familie for Tiden ialmindelighed opfattes, altsaa temmelig fjernt saavel fra Slægten *Amathia* som fra *Scyra*, hvoraf den første tilhører Familien *Inachidæ*, og den sidste Familien *Pericerida*, ifølge den nylig af E. Miers givne Revision af *Oxyrhyncherne*.[2] Blandt Majiderne igjen tilhører den utvivlsomt Underfamilien *Majinæ* og slutter sig, som det synes, nærmest til Slægten *Hyastenus* White, hvis Arter væsentlig stammer fra den nordlige Del af det stille Ocean.

Bay of Biscay, first drew attention to this fact, and also alluded to the form in question very closely approximating the crab occurring off the coast of Florida and briefly characterized by Stimpson[1] under the name of *Scyra umbonata*. Milne Edwards suggests establishing a new genus for both these forms, under the aforesaid designation.

As regards the systematic position and relation of this genus to the other known *Oxyrhyncha*, it should certainly, from the structure of the orbita and other characters, be classed under the family *Majidæ*, within the limits at present usually assigned to that family, — hence comparatively remote alike from the genus *Amathia* and from the genus *Scyra*, the first of which belongs to the family *Inachidæ* and the latter to the family *Pericerida*, according to the revision of the *Oxyrhyncha*[2] lately published by E. Miers. Again, among the Majidæ it unquestionably belongs to the sub-family *Majinæ*, and would seem to approximate closest the genus *Hyastenus*, White, chiefly represented in the northern part of the Pacific Ocean.

1. Scyramathia Carpenteri, (Norman).

(Pl. I, Fig. 1—7).

Syn: *Amathia Carpenteri*, Norman, i Wyville Thomson's: "The Depths of the Sea", pg. 175, Fig. 35.

Artscharacteristic. Legemet overalt tæt og kort laaddent. Rygskjoldet noget længere end bredt, bagtil i Midten udbuet, oventil stærkt hvælvet samt forsynet med 9 stumpe Forhøininger, hvoraf de 3 tilhører Maveregionen, 1 Hjerteregionen, 2 hver Gjelleregion og 1 Tarmregionen. Den laterale Fortsats paa Gjelleregionen stor, skarpt tilspidset, lige udadrettet. Hepaticaltornen triangulær, begge overragende Siderne af Rygskjoldet, ovenfra seet. Pandehornets Grene af Rygskjoldets halve Længde, lige, stærkt divergerende, sylformigt tilspidsede. Præorbitaltornen triangulær, Postorbitaltornen stump; Indtnittet mellem begge i Bunden afrundet. Øinene meget smaa, med lyst Pigment. Fangarmene uden tydelige Torner, smalt cylindriske, med Haanden neppe fortykket. Fingrene simple ikke forcipate, og kortere end Palmen. 1ste Par Gangfødder en halv Gang til saa lange som Fangarmene og ligesom de følgende Par simpelt cylindriske: Endekloen forlænget med Spidsen nogen, hornfarvet. Hunnens Bagkrop stor og bred, næsten cirkelformig, med en stump Kjøl efter Midten. Farven ensformig skidden graabrun. Spandvidde indtil 250^{mm}.

[1] Preliminary Report on the Crustacea dredged in the Gulf Stream. Part I. Brachyura.

[2] "On the classification of the Majoid Crustacea" i Linnean Society's Journal. Zool., Vol. XIV.

1. Scyramathia Carpenteri, (Norman).

(Pl. I, figs. 1—7.)

Syn. *Amathia Carpenteri*, Norman, in Wyville Thomson's: "The Depths of the Sea." p. 175, fig. 35.

Specific Character. — Body covered over the whole surface with a close, velvety pubescence. Carapax somewhat longer than broad, posteriorly arched in the middle, above extremely arcuate and furnished with 9 obtuse protuberances, of which 3 belong to the gastric region, 1 to the cardiac region, 2 to each of the branchial regions, and 1 to the intestinal region. Lateral process on the branchial region large, very acute, and pointing straight outwards, hepatic spine triangular, both projecting beyond the sides of the carapax when viewed from above. Branches of the rostrum half the length of the carapax, straight, widely diverging, styliform, acuminate. Preorbital spine triangular, postorbital obtuse: the incision between rounded at the bottom. Eyes exceedingly small, with a light-coloured pigment. Chelipeds without distinct spines, slender cylindric, hand exhibiting scarcely any inspissation, dactyli simple, not forcipate, and shorter than the palm. First pair of ambulatory legs half again the length of the chelipeds, and, like the following pairs, simple cylindric: terminal claw produced, with the point naked, and of a horny colour. In females, the abdo-

[1] Preliminary Report on the Crustacea dredged in the Gulf Stream, Part I. Brachyura.

[2] "On the classification of the Majoid Crustacea," in the Linnean Society's Journal. Zool., Vol. XIV.

Findested. Stat. 10. 2 Exemplarer, begge Hunner.

Bemærkninger. Hvorvidt den her omhandlede Form i Virkeligheden er specifisk forskjellig fra Stimpsons *Scyra umbonata*, er det vanskeligt for Tiden med fuld Sikkerhed at afgjøre, da der endnu ikke foreligger nogen udførlig Beskrivelse eller Afbildning af denne sidste. Stimpson's korte Diagnose passer i alt væsentligt temmelig godt paa vor Art, saa at det neppe herefter lader sig gjøre at udhæve for denne sidste nogen egentlig distinctiv Character ligeoverfor den amerikanske Form.

Skjøndt jeg for min Part skulde være meget tilboielig til at anse disse to Former for identiske, tror jeg dog ikke paa Basis heraf udenvidere at kunne reducere Norman's Art, saalænge der endnu ikke er foretaget nogen noiere Sammenligning mellem begge de her omhandlede Former. Den opføres derfor her under det af Norman foreslaaede Artsnavn.

Beskrivelse. Hele Legemets Overflade er ligesom beklædt med et tæt filtagtigt Belæg, der ved noiere Undersøgelse bestaar af 2 forskjellige Slags Hudvedhæng. Inderst bemærkes talrige smaa tæt sammentrængte knudeformige Udvækster, der ved en flygtig Betragtning let vilde kunne tages for Granulationer af selve Hudskelettet, men som nærmere beseede snart viser sig at være af en helt anden Natur, da de baade er af temmelig blod Consistens og med den største Lethed lader jeg skrabe af. Ved Behandling med Kalilud viser de sig (se Fig. 7) som hudagtige Blærer eller Kapsler, der med en bred Basis er fæstede til Hudskelettet og i Midten stottes af en tynd chitingagtig Stav, hvis Spids rager mere eller mindre tydeligt frem fra Toppen.

Imellem disse eiendommelige Hudvedhæng og betydeligt overragende dem staar korte, men stive og i Enden noget hageformigt krummede Haar (Fig. 6), der især er tæt sammentrængte paa den forreste Del af Rygskjoldets dorsale Flade, der herved faar et eget fløielsagtigt Udseende. De savnes imidlertid heller ikke paa andre Dele af Legemet, saasom Pandehornene, Lemmerne og Bagkroppen, skjøndt de ialmindelighed her er noget mere spredte.

Rygskjoldet viser (se Fig. 1) den for *Oxyrhyncherne* characteristiske afrundet trekantede Form, med Længden noget større end Breden og den bagre Kant i Midten temmelig stærkt udbuet. Dets Overflade er noget ujevn, uden at dog de forskjellige Regioner markerer sig synderligt skarpt fra hverandre. Tydeligst er Begrændsningen mellem Maveregionen og Gjelleregionerne, hvilken viser sig som to dybe, bagtil convergerende Furer omtrent ved Midten af Rygskjoldets Længde. Seet i Profil (Fig. 3) viser Rygfladen sig stærkt hvælvet og temmelig brat nedadskraanende saavel mod Panden som den bagre Rand.

men large and broad, almost circular, with an obtuse carina along the middle. Colour a uniform dirty greyish-brown. Width between the points of the outstretched legs reaching 250^{mm}.

Locality. — Station 10: 2 specimens, both females.

Remarks. — Whether the form treated of here be indeed specifically distinct from Stimpson's *Scyra umbonata*, is difficult to decide at present with absolute certainty, since a detailed description or representation of the latter has not yet been given. Stimpson's brief diagnosis agrees well in all essential particulars with our species; and hence it is hardly possible to assign a pronounced distinctive character as contrasting with the American form.

Though myself greatly disposed to regard these two forms as identical, I cannot, on the basis of a mere supposition, presume to reduce Norman's species, till a further and more minute comparison shall have been made between the two forms treated of here. Hence, it is described under the specific name suggested by Norman.

Description. — The whole surface of the body invested, as it were, with a dense, felt-like covering, which, on closer inspection, is found to consist of two different kinds of cutaneous appendages. Innermost, crowded together, are observed numerous small tuberculiform excrescenses, which, at the first glance, may be readily taken for granulations on the skeleton of the skin, but, after a closer examination, are seen to be of a totally different character, since they have not only a soft consistence, but admit of being scraped off with the greatest facility. On treating these protuberances with a solution of potash, they are found (see fig. 7) to be true cutaneous vesicles or capsules, that, with a broad basis, are attached to the skeleton of the skin and supported in the middle by a slender chitinous-like rod, of which the point projects more or less distinctly forward from the top.

Between these peculiar cutaneous appendages, and projecting considerably beyond them, are short and comparatively stiff hairs (fig. 6), somewhat unguiform at the extremity, and crowded together, in particular on the anterior part of the dorsal surface of the carapax, which thus acquires a velvety appearance. These hairs, though not wanting on other parts of the body, for example the rostrum, the legs, and the abdomen, occur here as a rule somewhat more scattered.

The carapax (see fig. 1) exhibits the rounded triangular form characteristic of the *Oxyrhyncha*, with the length somewhat greater than the breadth, and the posterior margin slightly arcuate in the middle. Its surface is somewhat uneven, but without the various regions of the body being sharply defined one from the other. The demarcation is most distinct between the gastric and the branchial regions, occurring here as two deep, posteriorly converging furrows about the middle of the longitudinal diameter of the carapax. Viewed in profile (fig. 3), the dorsal surface has an exceedingly curved appearance, sloping abruptly down alike towards the rostrum and the posterior margin.

Af Knuder eller Tuberkler findes kun et meget begrændset Antal fordelte paa Rygskjoldets Overflade og som sædvanligt strængt symetriskt ordnede. Paa den stærkt convexe Maveregion bemærkes i Midten bagtil en stump Forhøining og til hver Side af denne en mindre, men tydeligere begrændset afrundet Knude. Hos det ene af de to undersogte Individer fandtes desuden i Midtlinien længere fortil en meget liden, men ganske tydeligt markeret Tuberkel, der imidlertid ganske savnedes hos det andet Exemplar. Hjerteregionen er særdeles stærkt, pukkelformigt fremspringende, dannende en umboformig Forhøining i Midten af det bagre Parti af Rygskjoldet. Ogsaa den bagenfor liggende saakaldte Tarmregion er i Midten mere eller mindre tydeligt tuberkelformigt fremspringende. Paa enhver af de temmelig stærkt hvælvede Gjelleregioner findes fortil og bagtil et stumpt knudeformigt Fremspring, hvoraf det forreste er storst og noget affladet i Enden. Fra den ydre Side af disse Regioner udspringer desuden en særdeles stor konisk tilspidset Fortsats, der retter sig lige udad og betydelig overrager Rygskjoldets Sidekanter. En anden, men mindre og triangulært tilspidset Fortsats sees i den forreste Del af Rygskjoldet, hævende sig fra hver Leverregion og ligeledes overragende Sidekanterne. Tallet af samtlige Forhøininger paa Rygskjoldets Overflade bliver saaledes, naar undtages den ovenfor nævnte lille, og som det synes inconstante Tuberkel fortil paa Maveregionen, ialt 13, 9 stumpe dorsale Knuder og 4 tilspidsede laterale Fortsatser. Paa de Mundareaen til Siderne begrændsende saakaldte Pterygostomialregioner bemærkes en noget uregelmæssigt buet Længdekjol, der viser et, som det synes, noget vexlende Antal af stumpe Knuder eller Crenulationer (se Fig. 2 og 3).

Pandehornet er af et meget characteristiskt og fra vore øvrige bekjendte Former afvigende Udseende. Det er nemlig delt i to lige fra Roden af adskilte, fuldkommen lige og sylformigt tilspidsede Grene eller Horn, der divergere til hver Side og opnaar omtrent Halvparten af Rygskjoldets Længde. De er ved Roden fuldkommen cylindriske og afsmalnes jevnt mod Enden samt er tæt haarbesatte.

Øienhulerne er temmelig smaa, men ganske tydeligt begrændsede og rettede til Siderne. De begrændses oventil og fortil af en triangulær tilspidset fortilrettet Flig, den saakalte Præorbitaltorn og bagtil af en i Enden afstumpet Postorbitaltorn; mellem begge er et dybt, i Bunden afrundet Indsnit eller Sinus. Den nedre Væg af Øienhulerne dannes væsentlig kun af det med Epistomet forvoxne Basalled af 2det Par Følere.

Antennegruberne, der som sædvanligt er beliggende lige under Pandedelen (se Fig. 2), er af uregelmæssig oval Form og skilte i Midten ved en smal Skillevæg, hvis forreste Del springer frem i Form af en buet Kam (se Fig. 3).

Det brede, i Midten fordybede Brystskjold dækkes hos Hunnen fuldstændig af den paa Bugsiden omboiede Bagkrop.

Of protuberances or tubercles, but a very limited number occur on the surface of the carapax, and as usual disposed with rigid symmetry. On the gastric region, exceedingly convex, is observed in the middle, posteriorly, an obtuse prominence, and on either side a smaller, but distinctly defined, rounded tubercle. Moreover, in one of the two specimens examined was detected on the median line, farther forward, a minute but well marked protuberance, of which however there was no trace in the other example. The cardiac region, considerably projecting, constitutes an umbo-shaped prominence, in the middle of the posterior part of the carapax. The so-called intestinal region, located posterior to the cardiac, is likewise in the middle more or less protuberant and projecting. On each of the comparatively arcuate branchial regions occurs, alike anteriorly and posteriorly, an obtuse tuberculiform projection, of which the anterior is the larger and somewhat applanated at the top. Moreover, from the outer side of these regions issues a very large acuminate projection, turned directly outward, and extending considerably beyond the lateral margins of the carapax. Another, but smaller and triangular-acuminate process is seen on the foremost part of the carapax, rising from each hepatic region, and in like manner projecting beyond the lateral margins. Hence, the number of prominences occuring on the surface of the carapax, if we except the minute and apparently inconstant tubercle observed, as stated above, on the anterior part of the gastric region, is 13, viz. 9 obtuse dorsal protuberances and 4 acuminate lateral projections. On the so-called pterygostomial regions, laterally adjoining the buccal area, occurs a somewhat irregularly arched longitudinal carina, exhibiting, it would seem, a slightly varying number of obtuse tubercles or crenulations (see figs. 2, 3).

The rostrum is highly characteristic, differing widely in appearance from that in any other of our known forms. It is divided from the base upwards into two perfectly straight, awl-shaped branches or horns, diverging to either side, and which attain about half the length of the carapax. At the base they are perfectly cylindrical, tapering gradually towards the extremity, and have a thick covering of hair.

The orbita are rather small, but distinctly defined, and turned sideways. Above and in front, they are bounded by a triangular-acuminate lobule, pointing anteriorly, the so-called preorbital spine, and behind by a postorbital spine, obtuse at the extremity; between the two extends a deep incision or sinus, rounded at the bottom. The lower wall of the orbita is formed in greater part by the basal segment (connate with the epistome) of the 2nd pair of antennæ.

The antennal foveæ, placed as usual immediately beneath the frontal region (see fig. 2), have an irregular oval form, and are separated in the middle by a narrow ridge, of which the anterior part projects in the shape of an arched comb (see fig. 3).

The broad sternum, hollowed in the middle, is in the females wholly covered by the inflexed abdomen.

Denne sidste (se Fig. 2) er særdeles stor, af næsten cirkelrund Form og noget hvælvet samt langs Midten forsynet med en stump Kjøl. Af dens 7 Segmenter er næstsidste det største. Hos det ene af de erholdte Exemplarer fandtes under Bagkroppen en tæt Klase af fint kornet, rødgul Udrogn.

Øinene er særdeles smaa og kan mere eller mindre fuldstændigt inddrages i Øienhulerne. De er af cylindrisk Form og kun lidet udvidede i Enden. Den facetterede Del indtager kun en forholdsvis liden Del af Øiet og udmærker sig ved sit lyse, hvidgule Pigment.

1ste Par Følere er fæstede i Bunden af de ovenomtalte Antennegruber, hvori de fuldstændigt kan inddrages, idet den ydre Del (Skaftets sidste Led tilligemed de korte Svøber) kan slaaes albuformigt ind mod Basaldelen. Deres Bygning er forøvrigt den for *Brachyurerne* sædvanlige.

2det Par Følere udspringer (se Fig. 2) til hver Side af Antennegruberne, som de delvis bidrager til at begrændse udad. Deres basale Del er fast forvoxet med Epistomet og danner, som ovenfor anført, den nedre Begrændsning for Øienhulerne. Den ydre Kant af denne Del er ganske glat, uden tandformige Fremspring, og Enden simpelt afkuttet. Lugteknuderne befinder sig helt bagtil nær Mundrammen. Den frie Del af disse Følere er traadformig og rager frem til hver Side af Pandehornene, hvis halve Længde de omtrent opnaar. Man kan adskille et smalt cylindriskt 2-leddet Skaft og en meget tynd, omtrent ligelang, af flere Led bestaaende børsteformig Svøbe.

Den temmelig store firkantede Mundramme (se Fig. 2), der tager sin Begyndelse i nogen Afstand fra Antennegruberne med en fuldkommen lige og glat Rand, dækkes fuldstændigt af de ydre Kjævefødder.

Disse sidste (Fig. 4) er af særdeles kraftig Bygning og udspringer til hver Side af Mundrammens bagre Del, umiddelbart foran den spaltformige Aabning, der fører ind til Gjellehulerne (se Fig. 2). De bestaar af den egentlige Kjævedel eller Stamme og en betydelig tyndere ydre Gren (Exognath), foruden den i Gjellehulen indragende Vifte (Epignath), som ikke er fremstillet paa Figuren. Man kan paa selve Stammen adskille 7 Led, hvoraf de to første er meget korte og mindre tydeligt begrændsede, medens de 2 følgende Led er stærkt pladeformigt udvidede og paa sin ydre Flade grovt granulerede. 3die Led er det største, af aflang firkantet Form og langs sin indre Kant uregelmæssigt tandet samt besat med korte og tætte Børster. 4de Led er stærkt udvidet mod Enden, betydelig bredere end langt og af uregelmæssig trekantet Form, med den forreste Rand næsten lige afskaaret. Paa dets indre Flade er en Udrandning, hvori den korte indad krummede Endedel eller Palpe er fæstet ved en meget bevægelig Articulation. Dennes 3 Led aftager successivt i Tykkelse og er alle tæt haarede. Exognathen udspringer fra Ydersiden af Stammens 2det Led og bestaar af et noget affladet, svagt bugtet

The latter part (see fig. 2) is exceedingly large, almost circular and somewhat arcuate in shape, and furnished along the middle with an obtuse carina. Of its 7 segments, the penultimate is the largest. In one of the specimens obtained was found under the abdomen a thick cluster of finely granulous reddish-yellow roe.

The eyes are exceedingly small, and admit of being more or less completely retracted within the orbitæ. They are cylindric in form, and but slightly dilated at the extremities. The cornea constitutes but a small portion of the eye, and is characterized by its light, whitish-yellow pigment.

The 1st pair of antennæ are attached at the bottom of the aforesaid antennal foveæ, into which they can be wholly retracted, since the outer part (the last segment of the peduncle together with the short flagella) admits of being elbow-like bent in toward the basal portion. For the rest, their structure is that usually observed in the *Brachyura*.

The 2nd pair of antennæ issue (see fig. 2) one on either side of the antennal foveæ, which in part they serve to limit exteriorly. Their basal portion is connate with the epistome, and forms, as stated above, the lower limit of the orbita. The outer margin of this portion is perfectly smooth, without dentate projections, and the extremity simple. The olfactory tubercles occur far behind, in close proximity to the buccal area. The free portion of these antennæ is filiform, and projects on either side of the rostrum, about half the length of which they attain. A slender cylindric peduncle, with two segments, can be distinguished, as also an extremely narrow, setiform flagellum, nearly equal in length, and consisting of several segments.

The comparatively large quadrate buccal area (see fig. 2), originating at some distance from the antennal foveæ, with a perfectly even and smooth border, is wholly covered by the outer maxillipeds.

The latter parts (fig. 4) are exceedingly strong; they are attached on either side of the posterior portion of the buccal area, immediately anterior to the fissure-like opening that leads to the branchial cavity (see fig. 2). They consist of the true maxillary portion, or stem, and a much more slender external branch (exognath), together with the flabellum (epignath), projecting into the branchial cavity (not represented in the figure). On the stem itself can be distinguished 7 articulations, of which the 2 first are exceedingly short and less distinctly indicated, whereas the 2 succeeding ones, pronounced lamelliform, are greatly dilated, and have their outer surface coarsely granulous. The 3rd segment, which is the largest, has an oblong, quadrate form, with its inner margin irregularly dentate, as also beset with short and closely disposed bristles. The 4th segment is very much dilated at the extremity, considerably broader than long, and has an irregular-triangled form, with the anterior margin almost vertically truncate. On its inner surface is observed a hollowed emargination, to which the short terminal portion, or palp, curving inward, is attached by an exceedingly mobile articulation. The 3 articulations com-

Skaft, der mod Enden i den indre Kant viser et kort tandformigt Fremspring, og en liden cylindrisk Endesnært, hvis ydre Del er afdelt i korte, med Borster besatte Led.

1ste Fodpar eller de saakaldte Fangarme (se Fig. 1) er, ialfald hos Hunnen, af forholdsvis svag Bygning og neppe længere end Rygskjoldet, Pandehornene iberegnede. De bestaar ligesom de øvrige Fødder af 7 Led, hvoraf dog de to første er mindre skarpt begrændsede. Det stærkt forlængede 4de Led *(brachium)* er noget fortrykket i Enden og oventil her forsynet med et kort knudeformigt Fremspring. Forøvrigt er Fangarmene uden enhver Bevæbning og simpelt cylindriske. Haanden er meget smal, neppe tykkere end den øvrige Del og omtrent af samme Længde som de 2 foregaaende Led tilsammen. Fingrene er betydelig kortere end Palmen, simple, noget bøiede og i sin indre Kant forsynet med ensformigt udviklede stumpe Tænder. Naar de lukkes, slutter de tæt sammen i sin hele Længde.

De egentlige Gangfødder er temmelig stærkt forlængede og ligesom Fangarmene smalt cylindriske, uden tydelige Tuberkler eller Torner. De aftager successivt i Længde bagtil saaledes, at, medens 1ste Par omtrent er $^1/_2$ Gang til saa langt som Fangarmene er sidste Par neppe længere end disse. Det næstsidste Led *(tarsus)* er kjendeligt smalere end de øvrige og temmelig forlænget. Endekloen er kraftigt udviklet og paa alle Par af ens Udseende, svagt bøiet, næsten trind, ikke sammentrykt, og i Størsteparten af sin Længde tæt besat med de eiendommelige ovenfor omtalte kapselformige Hudvedhæng, hvormed ogsaa den øvrige Del af Fødderne er rigeligt forsynet. Den allerydeste Del af Endekloen er derimod ganske nøgen og af en meget fast hornagtig Consistens samt sylformigt tilspidset (se Fig. 4).

Farven er overalt ensformig skidden graabrun, hvad der forøvrigt væsentlig skyldes de tætte Hudvedhæng, der overalt dække Legemet.

Udmaalinger. Det største af de to undersøgte Exemplarer har en Spandvidde mellem de udstrakte forreste Gangfødder af 250^{mm}. Rygskjoldets Længde er, naar Pandehornene fraregnes, 45^{mm}, dets største Brede 42^{mm}; Pandehornenes Længde 25^{mm}; 1ste Par Gangfødders Længde 120^{mm}; Fangarmenes Længde udstrakt 70^{mm}.

Forekomst og Udbredning. Nærværende mærkelige Krabbe blev først opdaget under den Porcupine'ske Expedition paa den saakaldte Holteniagrund i den vestlige Del af Færø-Shetlandsrenden og er afbildet i det bekjendte af

posing this part diminish successively in thickness and are each thickly clothed with hair. The exognath issues from the outer side of the 2nd segment of the stem, and consists of a somewhat bevelled, slightly arcuate peduncle, which, towards the extremity, at the inner margin, exhibits a short, dentiform projection, and at the apex a small cylindric flagellum, the outer part of which is subdivided into small articulations, beset with bristles.

The 1st pair of legs, or chelipeds as they are called (see fig. 1), exhibit, in the females at least, a comparatively feeble structure, and are scarcely at all longer than the carapax, including the rostrum. Like the other legs, they are composed of 7 segments, of which however the two first are less sharply defined. The very elongate 4th segment *(brachium)* is somewhat dilated at the extremity, and here, above, furnished with a short, tuberculiform projection. For the rest, the chelipeds are simple cylindric, without any armature whatsoever. The hand is exceedingly narrow, scarcely at all thicker than the remaining part, and about of the same length as the 2 preceding segments taken together. The fingers are considerably shorter than the palm, simple, somewhat bent, and on their inner margin provided with obtuse, uniformly developed teeth. When shut, they fit close together, throughout their entire length.

The true ambulatory legs are comparatively elongate, and, like the chelipeds, slender and cylindric, without distinct tubercles or spines. They diminish successively in length posteriorly, in such manner that, whereas the 1st pair are about half as long again as the chelipeds, the last pair are scarcely at all longer than those limbs. The penultimate segment *(tarsus)* is appreciably narrower than the preceding ones, and rather elongate. The terminal claw is most powerfully developed, and on each pair of uniform appearance, slightly curved, almost round, not compressed, and throughout the greater part of its length thickly beset with the characteristic capsular cutaneous appendages described above, with which, too, the remaining portion of the pereiopoda is abundantly furnished. The outermost part of the terminal claw is, on the other hand, entirely naked, of an exceedingly firm, corneous consistence, and acutely pointed (see fig. 4).

Colour everywhere a uniform dirty greyish-brown, chiefly ascribable to the compact cutaneous appendages that cover the whole surface of the body.

Measurements. — The largest of the two specimens examined has a width between the expanded anterior pereiopoda of 25^{mm}. The length of the carapax, exclusive of the rostrum, is 45^{mm}, its greatest breadth 42^{mm}; the length of the rostral horns is 25^{mm}; the 1st pair of pereiopoda has a length of 120^{mm}; the length of the chelipeds, expanded, is 70^{mm}.

Occurrence and Distribution. — This remarkable crab was first observed on the "Porcupine" Expedition, inhabiting the "Holtenia ground," in the western part of the Færoe-Shetland channel: the animal is figured in

Wyville Thmsom forfattede Skrift "The Depths of the Sea" under Benævnelsen *Amathia Carpenteri*.

Nylig er samme Form under den franske Expedition fundet meget almindelig paa de større Dyb i Biscayerbugten.

De to under vor Expedition erholdte Exemplarer optoges i Trawlnettet circa 20 Mil udenfor vor Vestkyst (Stat. 10) fra et Dyb af 220 Favne.

Dens hidtil bekjendte geografiske Udbredning strækker sig saaledes igjennem circa 20 Bredegrader. Hvis Stimpsons Art skulde vise sig at være identisk med vor, bliver Udbredningen selvfølgelig endnu betydelig større.

Overalt er den kun fundet paa Dybder over 100 Favne, og den er derfor at betragte som en ægte Dybvandsform, noget, der ogsaa paa Forhaand vil kunne sluttes af enkelte Organisationsforhold, navnlig de lidet udviklede Øine og disses lyse Pigment.

De physiske Forhold, hvorunder den forekommer, synes endelig at vise, at den er en mere sydlig Form, der alene tilhører den tempererede Area, men er ganske fremmed for den kolde.

Sir Wyville Thomson's well-known work, "The Depths of the Sea," under the name of *Amathia Carpenteri*.

A short time since, the same form was met with on the French Expedition, occurring very abundantly throughout the great depths in the Bay of Biscay.

The two specimens obtained on the Norwegian Expedition were brought up in the trawl-bag, about 20 miles off the west coast of Norway (Stat. 10), from a depth of 220 fathoms.

Hence, its geographical distribution as hitherto known comprises about 20 degrees of latitude. Should Stimpson's species prove to be identical with ours, the distribution is of course much more extensive.

In every locality, this crustacean has been met with in depths exceeding 100 fathoms, and must therefore be regarded as a true deep-sea form, which could, indeed, be presumptively inferred from certain characteristics of organization, in particular the slight development of the eyes and their light pigment.

Finally, the physical conditions under which the animal occurs would apparently distinguish it rather as a southern form, exclusively belonging to the temperate and wholly unknown in the cold area.

Subordo Anomura.

Tribus Pterygura.

Fam. Paguridæ.

Gen. **Eupagurus,** Brandt. 1851.

Middendorff's Sibirische Reise.

2. Eupagurus tricarinatus, (Norman).

(Pl. I, Fig. 8—10).

Syn: *Pagurus tricarinatus,* Norman, Last Report on dredging among the Shetland Isles. Report of the British Association for the Advancement of Science for 1868, p. 264.

Artscharacteristik. Legemet temmelig undersætsigt, besat med spredte Børsteknipper. Panderanden i Midten kun lidet fremspringende. Øinene aflangt kolleformige, kortere end Panderanden. Fangarmene meget ulige, haarede; høire Arm meget større og kraftigere end venstre med 5te Led (Vristen) temmelig tykt og tæt besat med tornformige Tuberkler. Haanden bredt oval med 3 Længdekjoler, hvoraf de to ydre indtager Kanterne og er regelmæssigt og grovt tandede, medens den 3die løber langs ad Midten af den øvre Flade og er stumpere end de to øvrige. Haandens Overflade mellem Kjølerne tydeligt indhulet og kun forsynet med faa og stumpe Knuder; Fingrene neppe

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Specific Character. — Body comparatively robust, beset with scattered fasciculi of bristles. Margin of front, in the middle, but slightly projecting. Eyes oblong claviform, shorter than the frontal margin. Chelipeds very unequal, ciliated; right arm much larger and more powerfully developed than left, with the 5th segment (the wrist) comparatively thick, and densely beset with spiniform tubercles; hand broadly oval, with 3 longitudinal carinæ, of which the 2 outer ones occupy the edges and are regularly and coarsely dentate, whereas the 3rd extends along the middle of the upper surface and is more obtuse than the two others. Surface of hand between the carinæ

længere end Palmen, brede og affladede, i den ydre Kant tandede, i den indre uregelmæssigt knudrede. Venstre Fangarms Haand smalt oval, tæt haaret oventil med en tandet Længdekjol. Gangfødderne af middelmaadig Længde, med de 2 ydre Led grovt tandede og haarede i den forreste Kant; Endekloen svagt krummet, uden Tænder. Farven blegt gulrød.

Findested. Stat. 25. 1 Exemplar.

Bemærkninger. Nærværende Form er let kjendelig fra alle vore øvrige Arter ved den eiendommelige og skarpt udprægede Sculptur af Haanden paa høire Fangarm. Derimod kommer den i denne Henseende temmelig nær to middelhavske Arter, nemlig *E. angulatus* Risso og *E. meticulosus* Roux. Den første af disse Arter har imidlertid ganske glatte Kjoler, og fra den sidste synes den at skille sig ved kortere og plumpere Hænder samt ved en betydelig stærkere udpræget Tornbesætning.

Beskrivelse. Legemet er af temmelig kraftig og undersætsig Bygning og saavel paa Rygsiden som Bugsiden besat med spredte Knipper af fine Haar.

Integumenterne er som hos de øvrige Arter af Slægten temmelig tynde og delvis ganske membranøse.

Rygskjoldet viser (se Fig. 8) den sædvanlige noget hjerteformede Form. Dets forreste Parti er ved en skarpt markeret bueformigt bøiet Cervicalfure adskilt fra den bageste Del og viser i Midten den egentlige Maveregion, til hver Side af denne en liden ufuldstændig begrændset Leverregion og helt bagtil umiddelbart foran Cervicalfuren paa hver Side et smalt, skjævtliggende Felt, den saakaldte "*regio metagastrica*". Den bageste Del af Rygskjoldet, der er af en mere hudagtig Beskaffenhed end den forreste, er bagtil stærkt opsvulmet og i Midten udrandet, ladende sidste Forkropssegment ubedækket. Man adskiller i Midten den smale, lineære Hjerteregion og til hver Side af denne de stærkt hvælvede Gjelleregioner, der oventil ved en utydelig Længdefure er delt i to Felter.

Bagkroppen er af noget mindre membranøs Beskaffenhed end hos de fleste øvrige Arter af Slægten, og de 3 forreste Segmenter er paa Rygsiden begrændsede ved tydeligt markerede Linier samt besatte med spredte Knipper af Haar. Den er som sædvanligt assymetrisk og dreiet noget spiralformigt til høire med Spidsen.

Øinene er af temmelig robust Form og noget kortere end Panderanden, aflangt kølleformige, med Enden temmelig stærkt udvidet og jevnt afrundet. Den facetterede Del viser oventil i Midten en dyb Udrandning og er forsynet med mørkt, brunsort Pigment. De ved Roden liggende Basalplader er af noget uregelmæssig trekantet Form, indskaarne i den ydre Kant og besatte med korte Børster.

1ste Par Følere, der udspringer lige under Øinene,

distinctly hollowed, and furnished with only a few scattered knobs; fingers scarcely at all longer than palm, broad and applanated, along the outer margin dentate, along the inner irregularly rugged. Hand of left cheliped narrowly oval, closely covered with hair, and, above, exhibiting a dentate longitudinal carina. Ambulatory legs of moderate length, with the two outer segments coarsely dentate, and ciliated along the anterior margin; terminal claw slightly curved, without teeth. Colour a pale yellowish-red.

Locality. — Station 25; 1 specimen.

Remarks. — This animal is easily distinguished from all our known species by the peculiar and sharply prominent sculpturing of the hand of the right cheliped. Meanwhile, it approximates in this respect considerably two Mediterranean species, viz. *E. angulatus*, Risso, and *E. meticulosus*, Roux. The former of these species has, however, perfectly smooth carinæ, and the present species would appear, too, to be distinguished from the latter by shorter and clumsier shaped hands, as also by a much more pronounced spiniferous armature.

Description. — The body is comparatively powerful and thickset in structure, and furnished, both on the dorsal and ventral surfaces, with scattered bunches of downy hair.

As in the other species of the genus, the integuments are somewhat thin, nay in places quite membranaceous.

The carapax (see fig. 8) has the usual somewhat cordiform shape. Its anterior portion is separated from the posterior by an arcuate, well-marked cervical sulcus, and exhibits in the middle the true gastric region, on either side of which is a small, imperfectly defined hepatic region, and far behind, immediately anterior to the cervical sulcus, on either side, a narrow, obliquely extending area — the so-called "*regio metagastrica*." The posterior portion of the carapax, more cutaneous than the anterior, is, behind, very considerably swollen, and in the middle emarginate, leaving the last segment of the cephalo-thorax uncovered. In the middle can be distinguished the narrow, linear cardiac region, and on either side the very strongly arched branchial regions, each divided above by an indistinct longitudinal sulcus into two compartments.

The abdomen, or posterior division of the body, is somewhat less membranous than in most of the other species of the genus; and the 3 anterior segments are on the dorsal surface indicated by distinct lines, as also beset with scattered fascicles of hair. As is commonly the case, it is asymmetrical, and has the point somewhat spirally twisted to the right.

The eyes are in form comparatively robust, and somewhat shorter than the frontal margin, oblongo-clavate, with the extremity considerably expanded and evenly rounded off. The cornea exhibits above, in the middle, a deep emargination, and is furnished with a dark, brownish-black pigment. The basal lamellæ have a somewhat irregular-triangled form, incised into the outer margin and beset with short bristles.

The 1st pair of antennæ, originating immediately be-

mellem hvilke deres ydre Del træder frem, er af den sædvanlige smækre Bygning og kan strækkes med hele Skaftets sidste Led foran Øinene.

2det Par Foleres Basaldel viser udad en stærk, fortilrettet og i den indre Kant tandet Torn og indenfor denne et næsten dobbelt saa langt, lancetformigt, bevægeligt Vedhæng, der svarer til Bladet hos *Macrurerne*. Dette Vedhæng overrager med sin Spids Øinene og er besat med spredte Haar. Den traadformige Svøbe er omtrent af Legemets Længde og delt i talrige korte Led.

Fangarmene er meget ulige udviklede og, som altid Tilfældet er hos Arterne af den egentlige Slægt *Eupagurus*, den høire størst. Den er omtrent af hele Legemets Længde og af en særdeles kraftig Bygning. De 3 første Led er, naar Dyret sees ovenfra, ganske skjulte under Forkroppen. 4de Led er af prismatisk Form, indad næsten plant og udvidet mod Enden, hvor det er forsynet med nogle spredte Torner og Børster. 5te Led eller Vristen er omtrent af samme Størrelse og af næsten trekantet Form. Dets øvre Flade er noget hvælvet og forsynet med talrige tornformige Knuder, som mod den indre Kant bliver større og ordner sig i mere eller mindre tydelige Længderader; mellem Tornene staar tætte Børsteknipper. Haanden (se ogsaa Fig. 9) er særdeles kraftig, af bredt oval Form, noget affladet og lidt længere end Vristen. Dens øvre Flade er meget ujevn og viser 3 tydeligt markerede Længdekjøler, hvoraf de to indtager Sidekanterne og er forsynede med skarpe Saugtakker, medens den 3die løber langs ad Midten og er mere stumpt afrundet samt forsynet med mindre knudeformige Forhøininger, som dog bagtil delvis antager Formen af spidse Torner. Mellem Kjølerne er Overfladen tydelig indhulet og her kun forsynet med adspredte stumpe Knuder. Fingrene er noget kortere end Palmen, brede og noget affladede samt jevnt krummede mod Spidsen. De er som den øvrige Del af Haanden besatte med Børsteknipper og viser i den indre Kant uregelmæssige større og mindre Knuder. Haandens ydre Kjøl fortsætter sig som en saugtakket Kam langs ad den ubevægelige Finger lige til dens Spids, og ogsaa den mediane Kjøl lader sig delvis forfølge langs ad den indre Kant af Fingeren. Den bevægelige Finger er saavel paa sin øvre Flade som i Kanten forsynet med tydelige tornformige Knuder.

Den venstre Fangarm er, som ovenfor antydet, betydelig baade kortere og svagere bygget end den høire. Vristen er ogsaa her paa sin øvre Flade besat med spidse Torner, der dog er langt færre i Antal. Haanden (se Fig. 10) er ligesom Vristen tæt haaret og af aflang oval Form, indad uden Spor af Torner, udad derimod forsynet med en saugtakket Kam, og langs Midten af den øvre Flade med en bagtil stærkt fremspringende tandet Kjøl. Fingrene

neath the eyes, between which their exterior portion projects, exhibit the usual slender structure, and admit of being exserted, along with the whole of the last segment of the peduncle, in front of the eyes.

The basal portion of the 2nd pair of antennæ exhibits exteriorly a stout, anteriorly directed, and, along the inner margin, dentate spine, on the inner side of which is an almost double as long, lanceolate, moveable appendage, corresponding to the scale in the *Macrura*. This appendage projects with its point beyond the eyes, and is beset with scattered hairs. The filiform flagellum is about of the same length as the body, and divided into numerous short segments.

The chelipeds are very unequally developed, and, as is always the case in species of the true genus *Eupagurus*, the right one is the larger; it attains about the length of the whole body, and has an extremely powerful structure. The 3 anterior segments are, when the animal is viewed from above, wholly concealed beneath the cephalo-thorax; the 4th segment is prismatic in form, inward almost plane, and furnished toward the extremity with a few scattered spines and bristles; the 5th segment, or wrist, is about of the same size and well-nigh triangular in form; its upper surface is somewhat arcuate and provided with numerous spiniform protuberances, which, toward the inner margin, gradually increase, and are arranged in more or less distinct longitudinal series: between the spines occur closely disposed bunches of bristles; the hand (see also fig. 9) is exceedingly powerful, broadly ovate in form, somewhat bevelled, and a trifle longer than the wrist; its upper surface is very uneven and exhibits 3 distinctly marked longitudinal carinæ, two of which occupy the lateral margins, and are distinctly serrate throughout, whereas the 3rd carina runs along the middle, and is more obtusely rounded, as also beset with small tuberculiform protuberances, which, however, in places, assume the form of sharp spines; between the carinæ, the surface is distinctly hollowed out, and furnished there with only a few scattered knobs; the fingers are somewhat shorter than the palm, broad and slightly bevelled, as also uniformly curving towards the point: like the remaining portion of the hand, they are beset with bunches of bristles, and exhibit along the inner margin irregular-shaped tubercles, varying in size; the exterior carina of the hand is produced as a serrate comb along the immovable finger to its very point, and the median carina may be partly traced along the inner margin of the finger; the moveable finger is provided, both on its upper surface and along the margin, with distinctly spiniform tubercles.

The left cheliped is, as stated above, considerably shorter, and exhibits besides a much more slender form than the right: the wrist, too, is beset over its upper surface with acute spines, which, however, are very considerably less numerous; the hand (see fig. 10) is, like the wrist, densely ciliated and oblongo-ovate in form, exhibiting interiorly not a trace of spines, but exteriorly furnished with a serrate comb, and having along the middle of its upper surface

er kjendeligt længere end Palmen, og den bevægelige forbunden med Haanden ved en meget skjæv Articulation.

De to Par egentlige Gangfødder er (se Fig. 8) af middelmaadig Længde, omtrent saa lange som høire Fangarm, sammentrykte fra Siderne og langs den forreste Kant af de to ydre Led grovt tandede og haarede. Endekloen er temmelig smækker, adskilligt længere end det foregaaende Led og uden Spor af Torner, men besat med lange spredte Haar.

De to bageste Fodpar viser den for Familien characteristiske rudimentære Bygning og er især mod Enden besatte med lange og tætte Børsteknipper.

Bagkroppens Vedhæng viser intet udmærkende i sin Bygning.

Farven er hvidagtig med et svagt gulrødt Skjær.

Udmaalinger. Længden af det undersøgte Individ er fra Panderanden til Bagkroppens bagre Krumning 30^{mm}. Høire Fangarm er lige udstrakt 36^{mm} lang.

Forekomst og Udbredning. Arten er først opdaget af Norman ved Shetlandsøerne og i al Korthed characteriseret i den af ham givne Rapport over en Del af det her indsamlede Materiale.

Det af os tagne Exemplar erholdtes i Havet udenfor vor Vestkyst, noget indenfor den bekjendte Fiskegrund, Storeggen (Stat. 25) fra et Dyb af 98 Favne. Exemplaret beboede en gammel Skal af *Sipho islandicus*.

Ifølge den af Norman givne Rapport over den Franske Expedition i Biskayerbugten, er den ogsaa forefundet her paa større Dyb.

Artens hidtil bekjendte geographiske Udbredning er saaledes omtrent den samme som for den i det foregaaende beskrevne Krabbe, *Scyramathia Carpenteri*, og ligesom denne maa den betragtes som en mere sydlig Form.

a dentate carina, projecting considerably backward. The fingers are appreciably longer than the palm, and the moveable finger is connected with the hand by an extremely oblique articulation.

The two pairs of true ambulatory legs (see fig. 8) are of moderate length, about as long as the right cheliped, compressed, and, along the anterior margin of the two outer segments, coarsely dentate and ciliated: the terminal claw is comparatively slender, a good deal longer than the preceding segment, and without any trace of spines, but exhibiting scattered hairs.

The two posterior pairs of legs have the rudimentary structure characteristic of the family, and are, more particularly at the extremity, beset with long and thick bunches of bristles.

The appendages of the posterior division of the body exhibit nothing peculiar in their structure.

Colour whitish, with a faint yellowish-red tint.

Measurements. — The specimen examined measures from the frontal margin to the posterior curvature of the abdomen 30^{mm}; the right cheliped, fully exserted, has a length of 36^{mm}.

Occurrence and Distribution. — The species was discovered by Norman, off the Shetland Isles, and briefly characterized by that author in his Report of part of the zoological material collected there.

The example obtained on the Norwegian Expedition was brought up at sea, off the west coast of Norway, a short distance within the well-known fishing-bank "Storeggen" (Stat. 25), from a depth of 98 fathoms. The specimen inhabited an old shell of *Sipho islandicus*.

According to the Report given by Norman of the French Expedition in the Bay of Biscay, the said form was met with there in greater depths.

The geographical distribution of the species, as known up to the present time, is accordingly about the same as that of the crab described above, *Scyramathia Carpenteri*, and, in common with that animal, the species must be regarded as a more southern form.

Subordo Caridea.

Fam. Crangonidæ.

Gen. **Sclerocrangon**, n.

Slægtscharacteristik. Legemet af robust Form med haarde, stærkt inkrusterede Integumenter. Rygskjoldet bredt, oventil hvælvet og forsynet med stærke tandformige Fremspring; de forreste Sidevinkler særdeles store, lancetformige. Pandehornet øxeformigt udvidet nedad. Bagkroppen oventil mere eller mindre tydeligt kjølet og tydeligt skulpteret.

Subordo Caridea.

Fam. Crangonidæ.

Gen. **Sclerocrangon**, n.

Generic Character. — Body robust in form, with hard, thickly incrusted integuments. Carapax broad, arcuate above, and furnished with strong, dentiform projections: antero-lateral angles exceedingly large, lanceolate; rostrum securiform-expanded below; abdomen, above, more or less distinctly keeled, and sharply sculptured. Eyes extremely

Øinene meget smaa, fæstede i ufuldstændigt udviklede Øienhuler. 1ste Par Folere med tilspidset Basalplade og korte Svober; 2det Par med kort og bredt Blad. 2det Par Kjævefodder uden supplementær Gjelle; 3die Par stærkt udviklet med spadeformigt udvidet Endeafsnit. 1ste Fodpar meget kraftigt bygget, forøvrigt af sædvanlig Form; 2det Par tyndt og forlænget, næsten nøgent, med smal Haand og særdeles korte Fingre: 3die Par ikke meget længere; de 2 bagre Par forholdsvis korte, og af robust Bygning. Bagkroplemmernes indre Plade meget kortere end den ydre, uden lateralt Appendix og med Undtagelse af 1ste Par delt i 2 Segmenter; det ydre Segment paa 2det Par hos Hannen stærkt udvidet og tvelappet.

Bemærkninger. Man har som bekjendt i den nyere Tid anseet det for nødvendigt at oplose Slægten *Crangon* Linné i flere Slægter; idet Linné's Slægtsbegreb her, som i saa mange andre Tilfælde er bleven ophøiet til Betydningen af en distinct Familie *(Crangonidæ)*. De fleste Carcinologer er saaledes nu enig i at erkjende Slægterne *Pontophilus* og *Sabinea*, hvis Arter tidligere beskreves som Crangoner. Senere er ogsaa foreslaaet en Del andre Slægter, f. Ex. *Egeon, Cheraphilus, Nectocrangon, Paracrangon* o. fl. Det synes mig nu, at den længst bekjendte arktiske Form, *Crangon boreas* Phipps, viser i mange Henseender saa vigtige Forskjelligheder fra de typiske Crangoner, at den med ligesaa stor Ret bør udskilles fra disse som Typen for en egen Slægt, og jeg har derfor her foreslaaet en saadan under Benævnelsen *Sclerocrangon*. Jeg er heri væsentlig bleven bestyrket ved Undersøgelsen af nedenstaaende, hidtil kun lidet kjendte Form, der i alt væsentligt paa det nøieste slutter sig til *Crangon boreas,* skjøndt den er sikkert artsforskjellig.

Slægten *Sclerocrangon* udmærker sig især ved de stærkt incrusterede og ujevne Integumenter, det høit hvælvede Rygskjold, den eiendommelige Form af Rostrum, samt Bygningen af 2det Fodpar og Bagkropslemmernes indre Plade. Foruden de 2 her nævnte Arter tør maaske ogsaa den middelhavske *Crangon cataphractus* Olivi blive at henføre til denne Slægt.

small, located in imperfectly defined orbitæ. First pair o antennæ with a pointed basal plate and short flagella; second pair with a short and broad scale. Second pair of maxillipeds without a supplementary branchia: third pair very considerably developed, with a spatulate expanded terminal division. First pair of legs very powerful in structure, for the rest of the usual form; second pair slender and elongate, almost naked, with a narrow hand and exceedingly short fingers; third pair not much longer: the 2 posterior pairs comparatively short and robust in structure. Inner lamella of the pleopods much shorter than the outer, without any lateral appendix, and, saving the first pair, divided into 2 segments; the exterior segment of the same lamella in the second pair is, in the male, very considerably expanded, and bilobed.

Remarks. — Of late, it has, we are aware, been deemed imperative to break up the genus *Crangon* Linné, into several genera, Linné's generic division having been raised, as in so many other cases, to the rank of a distinct family *(Crangonidæ)*. Hence, most carcinologists now accept the genera *Pontophilus* and *Sabinea,* whose species were formerly described as belonging to the genus Crangon. Still later, a number of other genera have been suggested, for example, *Egeon, Cheraphilus, Nectocrangon, Paracrangon*. I am now of opinion, that the long known Arctic species, *Crangon boreas*, Phipps, exhibits in many respects such divergent characteristics from the typical Crangonians, that it is equally entitled to be regarded as the type of a distinct genus, for which I would suggest the name of *Sclerocrangon*. In these views I have been chiefly borne out on examining the comparatively little known form described below, which, in all essential characteristics, bears the closest resemblance to *Crangon boreas,* though without doubt specifically distinct.

The genus *Sclerocrangon* is distinguished in particular by the rough and thickly incrusted integuments, the exceedingly arcuate carapax, the peculiar form of the rostrum, as also by the structure of the 2nd pair of legs and the inner lamella of the pleopods. Exclusive of the 2 species recorded here, the Mediterranean form *Crangon cataphractus*, Olivi, should, perhaps, be referred to this genus.

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3. Sclerocrangon salebrosus, (Owen).

(Pl. II).

Syn: *Astacus boreas,* Tilesius. Mémoires de l'Acad. Imp. des sciences de St. Pétersb. Tome V pg. 352, pl. VII. Fig. 2—5.

Crangon salebrosus, Owen. Beechey's Voyage. Crust. pg. 88, Pl. 27, Fig. 1 (teste Middendorf).

Cheraphilus feroz, G. O. Sars, Prodromus descriptionis Crust. etc. No. 12.

Artscharacteristik. Habitus og Bygning meget lig samme hos *Sclerocrangon boreas*. Rygskjoldet stærkt hvælvet,

3. Sclerocrangon salebrosus, (Owen).

(Pl. II).

Syn. *Astacus boreas,* Tilesius, Mémoires de l'Acad. Imp. des sciences de St. Pétersb., Tome V, p. 352, Pl. VII, figs. 2—5.

Crangon salebrosus, Owen, Beechey's Voyage. Crust. p. 88, Pl. 27, fig. 1 (*teste* Middendorf).

Cheraphilus feroz, G. O. Sars, Prodromus descriptionis Crust. etc., No. 12.

Specific Character. — Habitus and structure closely resembling that in *Sclerocrangon boreas*. Carapax extremely

med 3 tydelige Længdekjøler, hvoraf den midterste gaar ud i 3 særdeles store og temmelig ens udviklede, sammentrykte, fortilboiede Fortsatser. Sidekjølerne i 2 lignende. De forreste Sidefortsatser overordentlig store, triangulært tilspidsede og skjævt udadrettede. Pandehornet temmelig stort, ved Basis bredt, men derpaa sammentrykt, næsten oxeformigt udvidet nedad og med Enden uddraget i en lang og skarp, skjævt opadrettet Spids. Bagkropssegmenterne langs ad Midten kjølede; de 2 forreste oventil med en hoi sammentrykt Fortsats; sidste Segment med 2 parallele Kjøler. Epimererne med tandformige Fremspring i Kanterne. Det midterste Halevedhæng oventil udhulet efter Længden, med 3 Sidetænder. Enden triangulært tilspidset. Farven brunrod med morkere Shatteringer. Længden indtil 130^{mm}.

Findesteder. Stat. 31, 224, 338, 359, 362, 363.

Bemærkninger. Nærværende anselige Crangonide er allerede i Aaret 1815 beskrevet af *Tilesius* efter Exemplarer fra Kamtschatka, men af ham kun anseet for en Varietet af den af Phipps først omtalte *Astacus (Crangon) boreas*. 24 Aar derefter blev samme Form atter undersøgt af *Owen* og beskrevet i "Zool. of Beechey's Voyage" som en ny Art under Benævnelsen *Crangon salebrosus*. Senere har denne Form, saa vidt mig bekjendt, ikke været noiere omtalt.[1]

Arten slutter sig saavel i sin ydre Habitus som i den anatomiske Bygning meget nær til *Sclerocrangon boreas* (Phipps), men viser dog tilstrækkelige Afvigelser til at dens Artsforskjel maa sættes udenfor al Tvivl. Af disse Afvigelser kan fremhæves: Pandehornets meget eiendommelige Form, den stærke Udvikling af saavel Kjølene som de tornformige Fremspring paa Legemet, endelig den characteristiske Bevæbning af Bagkropssegmenternes Epimerer.

I min Prodromus har jeg for denne Art benyttet det af Kinahan foreslaaede Slægtsnavn *Cheraphilus*. Dette anser jeg nu for mindre rigtigt. Vistnok henforer Kinahan ogsaa *Crangon boreas* til denne Slægt; men da han selv ikke synes at have undersøgt hin Art, vil det vistnok være mere correct at indskrænke Slægten *Cheraphilus*, om denne godkjendes, til de af nævnte Forsker selv noiere beskrevne Arter, eller en begrændset Del af disse.

Beskrivelse. Legemet er (se Pl. 2, Fig. 1 og 2) af plump og undersætsig Form, med Hoide- og Brededimeteren omtrent ens.

Integumenterne er haarde og stærkt incrusterede samt

[1] Da ovennævnte Skrift af Owen mangler i vort Univ. Bibliothek, vidste jeg ikke dengang jeg skrev min Prodromus, at nærværende Form allerede tidligere var beskrevet, og opførte den derfor som en ny Art. Jeg har imidlertid senere overbevist mig om, at den i Virkeligheden er identisk med Owens Art, hvorfor den selvfølgeligt maa beholde det ældre af denne Forsker anvendte Artsnavn.

arcuate, with 3 distinct longitudinal carinæ, of which the median carina rises into 3 apophyses, exceedingly large, compressed, comparatively uniform in development, and bent anteriorly, the lateral carinæ dividing each into 2 similar processes. Antero-lateral spines remarkably large, triangular-acute, and turning obliquely outward. Rostrum comparatively large, broad at the base, but from thence compressed, — downward almost securiform-dilated, with the extremity produced into a long and acute point turning obliquely upward. Abdominal segments carinated along the middle: the two anterior, above, with a high, compressed process; last segment with 2 parallel carinæ. Epimera with dentiform projections on the margins. Telson hollowed out above longitudinally, with 3 lateral teeth, extremity triangular-acute. Colour brownish-red, with darker shadings. Length reaching 130^{mm}.

Locality. — Stats. 31, 224, 338, 359, 362, 363.

Remarks. — This large Crangonidian was described as early as the year 1815, by *Tilesius*, from specimens collected at Kamtschatka, but regarded by that author merely as a variety of the form *Astacus (Crangon) boreas*, first recorded by Phipps. Four and twenty years later, this animal was again examined, by *Owen*, and described, in "Zool. of Beechey's Voyage," as a new species, under the name of *Crangon salebrosus*. Subsequently, to the best of my knowledge, a more detailed description has not been given of the form.[1]

The species approximates very closely both in its habitus and anatomical structure *Sclerocrangon boreas* (Phipps), but exhibits however sufficient characteristic divergencies to place beyond doubt its specific distinctness. Of these divergencies may be mentioned: — The very peculiar form of the rostrum, the remarkable development alike of the carinæ and of the spiniform projections on the body, and finally the characteristic armature of the epimera of the abdominal segments.

In my Prodromus I have adopted for the present species the generic name *Cheraphilus*, suggested by Kinahan. This appellation I do not now, however, regard as strictly correct. True, Kinahan also refers *Crangon boreas* to the same genus; but apparently not having himself examined the species, it will, I opine, be safest to comprise in *Cheraphilus*, provided that genus be accepted, such species only as the aforesaid naturalist has described more in detail, or a limited number thereof.

Description. — The body (see Pl II, figs. 1, 2) clumsy and thickset in form, height and breadth about equal.

The integuments are hard and thickly incrusted, and

[1] Since Owen's above-cited Memoir is not to be had in the Library of the Christiania University, I was not aware, when writing my Prodromus, that the form in question had previously been described, for which reason I spoke of it as a new species. I have subsequently, however, been convinced that the animal is identical with Owen's species, and must therefore of course retain the original specific appellation assigned to it by that naturalist.

viser en meget ujevn Overflade, idet saavel Rygskjoldet som Bagkropssegmenterne er tydeligt skulpterede dels med uregelmæssige knudrede Forhøininger, dels med skarpt markerede langsgaaende Kjøler, der paa visse Steder hæver sig i Form af høie, sammentrykte tornformige Fortsatser.

Nogen tydelig Haarbesætning er kun at se langs de frie Kanter af Rygskjoldet og Bagkropssegmenterne, medens selve Rygfladen er paa det nærmeste ganske nogen.

Rygskjoldet (se Fig. 1 og 2), der omtrent indtager $^1/_3$ af Totallængden, er oventil stærkt hvælvet og kun i sin allerforreste Del noget nedtrykt. Seet fra Rygsiden (Fig. 1) er det næsten overalt af ens Brede, seet i Profil (Fig. 2) viser det sig derimod fortil betydelig smalere end bagtil, idet de nedre frie Kanter er fortil stærkt opstigende, medens de bag Midten danner en stærk bueformig Boining nedad. Rygskjoldets Høide er paa dette Sted neppe mindre end Breden.

Som ovenfor anført, er Rygskjoldets Overflade meget ujevn. Man bemærker saaledes 3 meget skarpt markerede Længdekjøler, der fra den bagre Rand strækker sig forover, en i Midten og en paa hver Side. Den midterste eller dorsale Kjøl, der er tydelig i hele Rygskjoldets Længde, gaar ud i 3 særdeles store, sammentrykte, fortilkrummede tornformige Fortsatser, alle omtrent af ens Udseende og skilte ved lige Mellemrum. Den bagerste af disse, der ialmindelighed er lidt mindre end de øvrige 2, staar i kort Afstand fra Rygskjoldets bagre Rand, den forreste noget bag Roden af Pandehornet. Sidekjølerne er bagtil temmelig lave, men hæver sig foran Midten til 2 lignende, dog noget mindre, skjævt udad og fortil rettede Torner, hvoraf den bagerste omtrent staar i samme Tværlinie som den midterste af de dorsale Fortsatser. Længere fortil taber disse Sidekjøler sig ganske, og Rygskjoldet viser her et noget fordybet Parti, der udad begrændses af en særdeles stor triangulært tilspidset og noget skraat udadrettet, horizontal Fortsats, der, naar Rygskjoldet sees ovenfra (Fig. 1) indtager dettes forreste Sidehjørner. Disse Fortsatser, der, skjøndt langt mindre udviklede, ogsaa forefindes hos de øvrige Crangonider, synes at svare til de saakaldte Branchiostegaltorner hos andre *Macrurer*. Lige nedenunder de omtalte Fortsatser sees et meget lidet tandformigt Fremspring, som er Pterygostomialtornen.

Pandehornet viser et fra de øvrige bekjendte *Crangonider* temmelig afvigende Udseende. Det er forholdsvis af ikke ubetydelig Størrelse, ved Roden bredt og fladtrykt, men derpaa pludselig stærkt sammentrykt fra Siderne og oxeformigt udvidet, dannende nedentil en i Kanterne tæt børstebesat vertikal Plade. Selve Enden af Pandehornet er udtrukket i en lang og skarp, skraat opadrettet, lancetformig Spids, der rækker betydelig udover 1ste Par Foleres Basalled, og giver Dyret, seet fra Siden (Fig. 2) et ganske eget Physiognomi.

exhibit an exceedingly uneven surface, both the carapax and the abdominal segments being distinctly sculptured, partly with rough, irregularly disposed prominences and partly with sharply marked longitudinal carinæ, which, in places, rise as high, compressed, spiniform projections.

Any distinct covering of hair cannot be detected save along the free margins of the carapax and the abdominal segments, whereas the dorsal surface itself is well-nigh wholly naked.

The carapax (see figs. 1, 2), which occupies about one-third of the total length, is above exceedingly arcuate, its most anterior portion only being slightly depressed. Viewed from the dorsal side (fig. 1), it appears almost everywhere of equal breadth; seen in profile (fig. 2), on the other hand, it is much narrower anteriorly than posteriorly, the inferior free margins ascending considerably throughout the anterior part, whereas, behind the middle division, they form an exceedingly arcuate descending curvature. The height of the carapax is here about the same as the breadth.

As stated above, the surface of the carapax is very uneven. Thus, it exhibits 3 very sharply marked longitudinal carinæ, extending forward from the posterior margin, one in the middle and one on either side. The median or dorsal carina, distinct throughout the whole length of the carapax, rises into 3 exceedingly large, compressed, anteriorly curved, spiniform processes, all well-nigh uniform in appearance and separated by equal spaces. The hindermost of these, which, as a rule, is somewhat smaller than the other 2, is placed at a short distance from the posterior margin of the carapax, the most anterior a trifle behind the basis of the rostrum. The lateral carinæ are posteriorly rather low, but, in front of the middle part, rise as 2 similar, but somewhat smaller, spines, pointing obliquely outward and forward, of which the more posterior about occupies the same transverse line as the median of the dorsal processes. Farther forward these lateral carinæ disappear altogether, and the carapax exhibits here a somewhat depressed area, which, exteriorly, is bounded by an extremely large, triangular-acute, horizontal projection, pointing somewhat obliquely outward, which, when the carapax is seen from above, occupies its antero-lateral angles (fig. 1). These processes, though much less developed, also occur in the other Crangonidians, corresponding apparently to the so-called branchiostegal spines in the other *Macrura*. Immediately beneath the aforedescribed processes, is seen an extremely small dentiform projection — the pterygostomial spine.

The rostrum exhibits a structural appearance diverging considerably from that in the other known *Crangonidæ*. In size it is by no means inconsiderable, at the root broad and depressed, but from thence suddenly much compressed laterally and securiform, constituting below a vertical plate, closely beset along the margins with bristles. The extremity of the rostrum is produced into a long and acute, lanceolate, and obliquely upturned point, which projects considerably beyond the basal segment of the 1st pair of antennæ, and gives to the animal — lateral aspect (fig. 2) — a highly characteristic appearance.

Til hver Side af Pandehornet viser Rygskjoldets forreste Kanter et kort afrundet Udsnit, hvorfra Øinene rager frem. Dette Udsnit, der danner et Slags ufuldkommen Øienhule, er udad begrændset af en liden spids Tand, den saakaldte Extraorbitaltorn.

Rygskjoldets Overflade er mellem Længdekjolerne ujevn, dannende flere mere eller mindre tydelige Tværvulster, hvoraf 2 omtrent i Midten af Rygskjoldets Længde er mest fremtrædende. Fra Roden af Pandehornet strækker sig 2 noget buede og bagtil divergerende ophøiede Linier, der begrændser et mediant Felt fortil, svarende til Maveregionen hos *Brachyurer* og *Anomurer*. Bagtil bemærkes 2 andre, men mindre skarpt markerede Linier, der fra den bageste dorsale Fortsats løber bueformigt udad og fortil ovenfor Sidekjolerne og antyder den øvre Begrændsning for Gjelleregionerne. Endelig sees nedenfor Sidekjolerne i det bagre Parti af Rygskjoldet (se Fig. 2) en noget fremspringende Længdekant, hvorfra Sidefloiene bøier sig stærkt indad mod Midtlinien eller ind under Forkroppen. Den frie Rand af Sidefloiene er her besat med fine Haar. Rygskjoldets bagre Rand er oventil noget fortykket og meget svagt udrandet i Midten.

Det mellem Foddernes Insertion beliggende Brystskjold (Fig. 22 og 23) er tydeligt udviklet og temmelig bredt bagtil samt ved tydelige Tværsuturer delt i paa hinanden følgende Segmenter. Det viser en triangulær Form og har langs ad Midten en Kjøl, der for hvert Segment gaar ud i en spids fortil rettet tornformig Fortsats.

Bagkroppen (se Fig. 1 og 2), der omtrent er dobbelt saa lang som Forkroppen, er i sin forreste Del neppe smalere end denne, men aftager hurtigt i Brede bagtil. Den er forøvrigt hos ægbærende Hunner adskilligt bredere end hos Hannerne og ogsaa forsynet med dybere Epimerer. Rygfladen er stærkt hvælvet og ligesom Rygskjoldet meget ujevn, med en mere eller mindre tydeligt udpræget Sculptur i Form af uregelmæssige Forhøininger og Fordybninger. Langs ad Midten løber en skarpt markeret Kjøl, der paa de 5 forreste Segmenter hæver sig til en høi, sammentrykt Fortsats, omtrent af samme Beskaffenhed som Rygskjoldets Torner. Paa de 3 følgende Segmenter er derimod Rygkjølen ganske jevn, og paa sidste Segment findes oventil 2 parallele Kjøler, der begrændser et canalformigt fordybet Parti i Midten; enhver af de sidstnævnte Kjøler danner i den bageste Del to paa hinanden følgende bagudrettede tandformige Fremspring.

De to forreste Segmenter er oventil betydelig kortere end de øvrige og skilte ved større, hudagtige Mellemrum, hvorfor ogsaa Bevægeligheden mellem disse Segmenter er temmelig stor.

Epimererne er navnlig hos de ægbærende Hunner (se Fig. 2) temmelig store, pladeformige og i Kanterne fint ciliérede. Paa 1ste Segment er de dybest og danner i Midten af den forreste Kant et lidet tandformigt Fremspring, der møder Sidekjolerne paa Rygskjoldet, medens de

On either side of the rostrum, the anterior margins of the carapax exhibit a short, rounded immargination, from which the eyes project. This immargination, which constitutes, as it were, a kind of imperfect orbita, is limited exteriorly by a small acute tooth, — the so-called extra-orbital spine.

The surface of the carapax is somewhat uneven between the longitudinal carinæ, constituting several more or less distinct transverse protuberances, 2 of which, located about in the middle of the longitudinal diameter of the carapax, are most prominent. From the base of the rostrum, extend 2 somewhat arcuate and posteriorly diverging, elevated lines, which anteriorly mark off a median area, corresponding to the gastric region in the *Brachyura* and *Anomura*. Posteriorly are observed 2 other, but less sharply marked lines, which, from the posterior dorsal projection, extend in a curve, outward and forward, above the lateral carinæ, and indicate the upper limit of the branchial regions. Finally, is seen beneath the lateral carinæ, on the posterior portion of the carapax (fig. 2), a somewhat projecting longitudinal border, from which the lateral lobes bend considerably inward towards the median line, or in under the ventral face of the body. The free margin of the lateral lobes is here finely ciliated. The posterior margin of the carapax, above, is somewhat incrassated and very slightly immarginated in the middle.

The sternum, located between the origin of the legs (figs. 22, 23) is distinctly developed and posteriorly rather broad, as also, by distinct transverse sutures, divided into a series of segments. It has a triangular form and exhibits along the middle a carina, which, at each segment, is produced into an acute, anteriorly directed, spiniform apophysis.

The posterior division of the body (figs. 1, 2), about twice as long as the anterior, has its foremost part scarcely at all narrower than the latter, but diminishes rapidly in breadth posteriorly. For the rest, in ovigerous females it is considerably broader than in males, and also provided with deeper epimera. The dorsal surface is exceedingly arcuate, and, like the carapax, very uneven, with more or less distinctly marked sculpturing, in the form of irregular elevations and depressions. Along the middle extends a sharply marked keel, which, on the two foremost segments, rises into a high, compressed process, much the same in character as the spines of the carapax. On the 3 following segments the dorsal carina is, however, quite even, and on the last segment occurs, above, 2 parallel carinæ, which bound a canaliculated median area; each of the last-mentioned carinæ form in their extreme hinder part two posteriorly directed dentiform projections.

The two foremost segments are considerably shorter above than the others, and separated one from the other by broad cutaneous spaces; hence the mobility between these segments is very considerable.

The epimera, particularly in ovigerous females (fig. 2), are rather large, lamellar in shape, and along the margins finely ciliated. They are deepest on the 1st segment and exhibit in the middle of the foremost margin a small dentiform projection, which meets the lateral carinæ on the

længere nedad delvis dækker dettes Sidefloie. Den nedre Del er fortil afrundet, men bagtil uddraget i en skarp lige nedadrettet Spids. Epimererne paa 2det Segment er betydelig bredere og dækker en Del saavel af 1ste som 3die Segment. De er i Enden bredt afrundede og her bevæbnede med 2 tandformige Fremspring. 3die og 4de Segments Epimerer er atter noget smalere og ligeledes 2tandet. 5te Segments Epimerer er noget bagudrettede og i Kanten bevæbnede med 4 Tænder. Sidste Segment er betydelig smalere end de øvrige og uden tydelige Epimerer, men nedentil paa hver Side forsynet med en tydeligt markeret Længdekjøl, der i Forbindelse med de 2 dorsale Kjøler giver dette Segment et næsten qvadratisk Gjennemsnit. Dets bagre Kant gaar oventil ud i 2 lange dolkformige Spidser, der ligesom omfatter Roden af det midterste Halevedhæng, og enhver af de ventrale Kjøler ender ligeledes med et temmelig stærkt tandformigt Fremspring.

Paa Bugsiden af de 5 forreste Segmenter findes mellem Roden af Svommevedhængene en høi sammentrykt Torn.

Øinene (Fig. 3) er forholdsvis meget smaa, med korte og tykke Stilke. Den facetterede Del, der viser et mørkt, brunsort Pigment, er ikke som sædvanlig fortykket, men tvertimod af ringere Diameter end selve Øienstilken ved Roden. Den dækkes oventil for en Del af en tilspidset med nogle korte Børster besat Fortsats.

1ste Par Følere (Fig. 4) er kun lidet udviklede, neppe mere end halvt saa lange som Rygskjoldet, og bestaar som sædvanlig af et 3leddet Skaft og 2 mangeleddede Svøber. Skaftets 1ste Led er næsten dobbelt saa langt som de 2 øvrige tilsammen og gaar ved Roden paa den ydre Side ud i en bred, næsten hjerteformig Fortsats, der er udtrukket i en skarp, noget udadbøiet Spids. Fortsatsen omslutter, som hos andre *Macrurer*, en temmelig rummelig Hule (Horecavitet), som aabner sig udad med en trang spaltformig Aabning paa den nedre Side; den er i Kanterne fint cilieret og desuden paa den øvre Side nær den ydre Rand forsynet med 5—6 lange sabelformige Torner. Den ydre Del af Leddet er cylindrisk og i begge Kanter, men især den indre, tæt besat med tynde, fint cilerede Børster. Paa den nedre Side findes nær den indre Kant og omtrent i Midten af Leddets Længde et lidet fortilrettet tornformigt Fremspring, hvorfra en Kjøl strækker sig bagtil. Skaftets sidste Led er ganske kort, neppe mere end halvt saa langt som 2det og i Enden skraat afskaaret; begge Led i Kanterne børstebesatte.

Svøberne forholder sig noget ulige hos begge Kjøn. Hos Hunnerne (Fig. 4) er de neppe længere end Skaftet og indbyrdes omtrent af ens Længde. Den ydre Svøbe, der ved et meget bevægeligt, kort og tykt, næsten skaal-

carapax, whereas, farther down, they partially overlap the lateral lobes of that part. The lower division is rounded anteriorly, but posteriorly produced into a sharp point directed straight downward. The epimera on the 2nd segment are considerably broader and partially overlap both the 1st and 3rd segments. At the extremity they are broadly rounded, exhibiting here 2 dentiform projections. The epimera of the 3rd and 4th segments are again much narrower and, also bidentate. The epimera of the 5th segment are somewhat posteriorly directed and furnished along the margin with 4 teeth. The last segment is much more slender than the others and without any true epimera, but below, on each side, provided with a distinctly marked longitudinal carina, which, in conjunction with the 2 dorsal carinæ, gives to the transverse section of this segment an almost quadrate appearance. Its posterior margin projects above with 2 long dagger-shaped points, that embrace, as it were, the base of the telson, and each of the ventral carinæ terminates likewise in a comparatively strong dentiform projection.

On the ventral surface of the 5 anterior segments, occurs between the bases of the pleopods a high, compressed spine.

The eyes (fig. 3) are comparatively very small, with short and thick pedicles. The cornea, which exhibits a dark, brownish-black pigment, is not, as commonly the case, dilated, but, on the other hand, smaller in diameter than the pedicle of the eye itself at the root. It is covered above, partially, by an acutely pointed projection, beset with short bristles.

The 1st pair of antennæ (fig. 4) are but slightly developed, being scarcely more than half as long as the carapax, and consist as usual of a triarticulate peduncle and 2 multi-articulate flagella. The 1st joint of the peduncle attains almost twice the length of the other 2 taken together, and at the outer side is seen projecting from its base a broad, almost cordiform process, which is produced into a sharp, somewhat outwardly bent point. The projection encloses, as in other *Macrura*, a rather spacious chamber (auditory cavity), which opens exteriorly with a narrow, fissure-shaped orifice on the lower side; along the margins it is finely ciliated, and on the upper side, in proximity to the outer margin, furnished besides with 5 or 6 ensiform spines. The terminal portion of the joint is cylindrical, and on both sides, but more especially the inner, closely beset with slender, finely ciliated bristles. On the lower side, near the inner margin, and about in the middle of the longitudinal diameter of the segment, occurs a small, anteriorly directed, spiniform projection, from which a short keel extends posteriorly. The last joint of the peduncle is very short, scarcely more than half the length of the 2nd, and the extremity obliquely truncate: both articulations furnished with bristles along the margins.

The flagella are somewhat different in the two sexes. The females (fig. 4) have them scarcely longer than the peduncle and well-nigh uniform in length. The outer flagellum, connected with the peduncle by an extremely mobile,

formigt udskaaret Rodled er forbundet med Skaftet, er næsten overalt jevn tyk og bestaar af circa 20 korte, med tætte Knipper af gjennemsigtige, baandformige Sandseborster (de saakaldte *cilia auditoria*) besatte Led. Den indre Svobe er betydelig tyndere, afsmalnende mod Enden og sammensat af et lignende Antal, men med simple Borster besatte Led. Hos Hannerne er begge Svober længere og navnlig den ydre (Fig. 5) betydelig stærkere udviklet og bestaaende af flere Led.

2det Par Folere, der næsten er fæstede i samme horizontale Plan som 1ste Par, bestaar (se Fig. 6) af en kort og tyk, utydelig segmenteret Roddel, fra hvis Ende udgaar oventil og udad et bladformigt Vedhæng, nedentil og indad en tynd, mangeleddet Svobe. Roddelen gaar paa den ydre Side ud i en stærk tornformig, fortilrettet Fortsats og viser ved Basis paa den indre Side en spids Torn, der synes at svare til Lugteknuden hos *Brachyurerne* og den saakaldte *spina olfactoria* hos *Amphipoderne*.

Det bladdannede Vedhæng *(ibid.)* er af en meget bred, oval eller elliptisk Form og neppe mere end dobbelt saa langt som bredt. Dets ydre Kant er næsten lige, eller kun ganske svagt buet og glat samt ender fortil med et stærkt tandformigt Fremspring. Den indre Kant er jevnt bueformigt bøiet og ligesom den bredt afrundede Ende af Bladet forsynet med en tæt Rad af korte Fjærborster. Den ovre Flade viser 3 divergerende Kjøler, hvoraf den ydre løber i nogen Afstand fra Randen lige fortil mod det omtalte tandformige Fremspring, medens de 2 øvrige passerer i diagonal Retning over Bladet og taber sig henimod dettes borstebesatte Rand.

Svoben bestaar af et cylindriskt Skaft omtrent af Bladets Længde og en traadformig Endedel. Skaftet (se Fig. 6) er sammensat af 3 Led, hvoraf de 2 første er ganske korte og skjævt forbundne med hinanden, medens sidste Led er af anselig Længde, regelmæssigt cylindriskt og ved Enden borstebesat. Den traadformige Endedel (se Fig. 1 og 2) er omtrent af Legemets halve Længde og sammensat af talrige korte Led.

Munddelene er idethele temmelig svagt udviklede og viser den for *Crangoniderne* characteristiske Bygning.

Overlæben (Fig. 7) danner en temmelig voluminos halvkugleformig Fremstaaenhed, der delvis dækker Mundaabningen fortil.

Underlæben (Fig. 8) er af en særdeles tynd, membranos Beskaffenhed og derfor vanskelig at faa helt udpræpareret. Den gaar ud i to meget stærkt divergerende Lapper, der ender med en noget indadkrummet Spids, men forøvrigt ganske synes at mangle enhver Ciliering i Kanterne.

Kindbakkerne (Fig. 9), der som hos alle egentlige *Crangonider* mangler Palpe, er forholdsvis smaa og svage,

short and thick, almost bowl-shaped basal articulation, is of nearly uniform thickness throughout, and consists of about 20 short joints, beset with closely disposed fascicles of translucent, riband-shaped sensory bristles (the so-called *cilia auditoria*). The inner flagellum is much more slender, tapering towards the extremity, and composed of a like number of articulations, beset however with simple bristles. In the males, both flagella are longer, and, in particular the outer one (fig. 5), much more developed and composed of a greater number of articulations.

The 2nd pair of antennæ, attached almost in the same horizontal plane as the 1st pair, consist (see fig. 6) of a short and thick, indistinctly segmented basal portion, from the extremity of which, upward and outward, proceeds a squamiform appendage, downward and inward a slender multiarticulate flagellum. The basal portion is produced on the outer side into a stout, spiniform, anteriorly directed process, and exhibits at the base, on the inner side, an acute spine, corresponding apparently to the olfactory tubercle in the *Brachyura* and the so-called *spina olfactoria* in the *Amphipoda*.

The squamiform appendage *(ibid.)* is exceedingly broad, oval or elliptic in form, and very little more than twice as long as broad. Its outer margin is almost straight, or very slightly curved, and smooth, terminating anteriorly in a stout, dentiform projection. The inner margin is uniformly arcuate, and, in common with the broadly rounded extremity of the scale, furnished with a closely set series of short, plumose bristles. The upper surface exhibits 3 diverging carinæ, the outer of which extends, at some distance from the margin, straight forward towards the previously mentioned dentiform projection, whereas the 2 others pass diagonally across the scale, and disappear in immediate proximity to the bristly margin of the latter.

The flagellum consists of a cylindric peduncle, about of the same length as that of the scale, and of a filiform terminal portion. The peduncle (see fig. 6) is composed of 3 segments, the 2 first quite short and obliquely connected with each other, whereas the last segment is of considerable length, of a regular cylindrical form, and at the extremity beset with bristles. The filiform terminal portion (see figs 1, 2) about equals half the body in length, and is composed of numerous short articulations.

The buccal parts are on the whole but slightly developed, and exhibit the structure characteristic of the *Crangonidæ*.

The labrum (fig. 7) constitutes a comparatively voluminous semiglobular prominence, partially covering the buccal orifice in front.

The labium (fig. 8) has an exceedingly thin, membranaceous structure; and hence can with great difficulty be separated in a complete state. It protends as two exceedingly diverging lobules, terminating in a somewhat inwardly curved point, but for the rest would appear to be entirely without any ciliated covering at the edges.

The mandibles (fig. 9), which, as in all true *Crangonidæ*, are without any palps, are comparatively small and

De er paa Midten stærkt, næsten boieformigt krummede, med den indad mod Munden fremspringende Arm, der synes at svare til Tyggefortsatsen hos de egentlige *Caridæ*, meget smal, cylindrisk, dog noget udvidet i Enden. Denne er paa begge Kindbakker kloftet til 4 spidse, parvis stillede Tænder, hvoraf de to mere eller mindre dækker de to øvrige (se Fig. 10). Kindbakkerne er helt igjennem chitiniserede, og navnlig den omtalte mod Munden rettede Arm *(pars incisiva)* af temmelig fast Consistens og intensiv gulbrun Farve.

1ste Par Kjæver (Fig. 11) bestaar af 3 fra en tykkere Roddel udgaaende Grener eller Lapper. Den indre af disse er smalt tungeformig og ved den afrundede Ende forsynet med fine Borster. Den midterste Gren er betydelig kraftigere udviklet og synes at danne den umiddelbare Fortsættelse af Roddelen. Den er stærkt indadkrummet og paa den tvært afskaarne Ende bevæbnet med 4 stærke Torner foruden en hel Del fine Borster. Begge disse Grener er rettede indad mod Mundaabningen og forestiller den egentlige Kjævedel (Endognath). Den ydre Gren, der er fæstet til Ydersiden af den midterste og noget høiere oppe end den inderste er uligt de 2 øvrige rettet udad. Den er af en lignende smal tungedannet Form som den indre, men af mere membranøs Beskaffenhed og langs den ydre Kant besat med omtrent 14 korte Fjærborster og i Spidsen med en enkelt simpel Borste. Ialmindelighed har man betegnet denne Gren som Exognathen; men den svarer aabenbart ikke til hvad man benævner saa paa de øvrige Munddele, men snarere til den saakaldte Mesognath. Den egentlige Exognath mangler her eller er ganske rudimentær.

2det Par Kjæver (Fig. 12) er fuldstændig pladeformige og af membranos Beskaffenhed. Den egentlige Kjævedel (Endognath), der hos andre *Macrurer* sædvanlig bestaar af 4 indadrettede Tyggelapper, er her ganske rudimentær, kun dannende en lidet fremtrædende, med nogle faa simple Borster besat Knude. Umiddelbart foran denne Knude udgaar en smal, i Enden borstebesat Fortsats, som forestiller den saakaldte Mesognath. Storsteparten af disse Kjæver indtages af en meget stor, fra den ydre Side af Roddelen udgaaende membranos Plade, der maa betragtes som homolog med den saakaldte Exognath paa Kjævefødderne. Paa denne Plade kan adskilles en fortilrettet, i Enden bredt afrundet og langs Kanterne med en regelmæssig Rad af Fjærborster besat Del, samt en lige bagudrettet, smalt tungeformig Flig, der er af betydelig Længde, og ved Spidsen forsynet med flere overordentlig lange og tynde, bagud og indad krummede Borster. Hele denne Plade benævnes sædvanlig Viften *(flabellum)*, et Navn, der godt passer til dens Function; men det er at bemærke, at den morphologiskt ikke svarer til hvad man kalder saa paa de følgende Munddele.

1ste Par Kjævefødder (Fig. 13) er ligeledes hovedsageligt af membranos Beskaffenhed og bestaar af 3 forskjelligt formede Hoveddele eller Grene. Den indre Gren,

feeble. In the middle they are exceedingly curved, in the shape almost of a bow, with the terminal portion projecting inward towards the mouth and apparently corresponding to the molar projection in the true *Caridæ*, exceedingly narrow, cylindric, but somewhat dilated at the extremity. On both mandibles, this extremity is cleft into 4 acutely pointed teeth, arranged in pairs, two of the teeth to a greater or less extent covering the others (see fig. 10). The mandibles are chitinous throughout, the terminal portion *(pars incisiva)* in particular being of a firm consistence and of a deep yellowish-brown colour.

The 1st pair of maxillæ (fig. 11) consist each of 3 branches or lobes, proceeding from a thickish basal part. The innermost of these is slender linguiform, and, at the rounded extremity, furnished with delicate bristles. The middle branch is much more powerfully developed, and would appear to constitute the immediate continuation of the basal part. It is bent very considerably inwards and, at the truncate extremity, provided with 4 powerful spines, exclusive of numerous delicate bristles. The outer branch, attached to the exterior margin of the median, and a trifle higher up than the innermost, is, contrary to what is the case with the 2 others, directed outwards. Like the inner branch, it is slender linguiform, but more membranaceous in character, and beset along the outer margin with about 14 short plumose bristles, a simple bristle projecting from the point. Generally, this branch has been termed the exognath: but it certainly does not correspond to what is thus designated on the other buccal parts — rather, one would opine, to the so-called mesognath. The true exognath is wanting here, or must at least be quite rudimentary.

The 2nd pair of maxillæ (fig. 12) are quite lamellar in form and of membranous structure. The true maxillary portion (endognath), which, in other *Macrura*, generally consists of 4 inwardly directed masticatory lobes, is in this animal quite rudimentary, constituting merely a small protuberant knob, beset with a few simple bristles. Immediately in front of this prominence, extends a slender prolation furnished at the extremity with bristles, constituting the so-called mesognath. The greater part of these maxillæ occupy an extremely large membranous plate, proceeding from the outer margin of the basal part, and which must be regarded as homologous with the so-called exognath on the maxillipeds. On this plate can be distinguished a division, anteriorly directed, broadly rounded at the extremity, and furnished along the edges with a regular row of plumose bristles, as also a slender, linguiform lappet, directed straight backwards, of very considerable length, and at the point having several exceedingly long and delicate, posteriorly and inwardly curving bristles. The whole of this plate is generally termed the fan *(flabellum)*, a name well befitting its function; we must, however, bear in mind that, morphologically, it does not correspond to what is thus designated on the following buccal parts.

The 1st pair of maxillipeds (fig. 13) are likewise chiefly membranaceous in substance, and consist of 3 differently formed principal parts or branches. The innermost

der danner den egentlige Stamme og er fremkommen ved en Sammensmeltning af Endognath og Mesognath, gaar ud i en smalt tungeformig, i den indre Kant børstebesat Lap, uden nogen tydelig Leddeling. Den midterste Gren (Exognath), der aabenbart svarer til den membranose Plade paa 2det Par Kjæver, er betydelig større og ligesom den indre fortilrettet, samt bestaar af en noget pladeformig, i den ydre Kant tæt børstebesat Basaldel og en ganske tynd, indadkrummet og stærkt bugtet Endesnært, hvis ydre Parti er delt i korte med Fjærborster besatte Led. Den ydre Gren endelig (den saakaldte Epignath) har Formen af en temmelig stor hudagtig, i to koniske Fliger — en fortil og en bagtilrettet — udgaaende børstelos Plade.

2det Par Kjævefødder (Fig. 14) viser de samme Hoveddele som foregaaende Par, skjøndt temmelig modificerede i sit Udseende. Navnlig er den indre Gren her betydelig stærkere udviklet, dannende en paa Midten vinkelformigt bøiet og indadkrummet Stamme, der er afdelt i 6 tydelige Led. Af disse er det næstsidste størst og ligesom opsvulmet paa Midten samt langs den ydre Kant forsynet med talrige lange og stive Børster. Sidste Led, der ved en meget skjæv Sutur er begrændset fra foregaaende, er ganske kort og bevæbnet med flere ulige store Torner, hvoraf 3 udmærker sig ved betydelig Længde. Exognathen, der er fæstet til Ydersiden af Stammens 2det Led, bestaar ligesom paa foregaaende Par af en noget sammentrykt Basaldel, der er bredest ved Roden og her i den ydre Kant besat med lange bøiede Fjærborster, samt en tynd Endesnært, der er rettet indad og mindre bugtet end paa 1ste Par. Epignathen er ogsaa her tilstede, men er betydelig mindre end paa foregaaende Par og mangler ganske den fortilrettede Lap.

3die Par Kjævefødder (Fig. 15) skiller sig væsentlig fra de øvrige Munddele ved sin betydelige Størrelse og fodformige Bygning. De opnaar næsten hele Rygskjoldets Længde og rager fortil adskilligt ud over 2det Par Foleres Blad. Tilsyneladende bestaar disse Kjævefødders Stamme kun af 4 Segmenter, et kort og tykt Rodled, et meget langstrakt og noget bugtet 2det Led, et neppe halvt saa stort 3die Led og et stærkt affladet, næsten spadeformigt Endeled. Ved nøiere Undersøgelse finder man dog, at Rodleddet egentlig er sammensat af 2 ufuldstændigt begrændsede Segmenter, hvoraf det 2det paa sin Yderside gaar ud i en kort, tungeformig Flig, der imidlertid neppe, som Krøyer mener, svarer til Epignathen paa de 2 foregaaende Par. Fremdeles er der en vistnok svag Antydning til en Sondring paa næste Led af et kort Basalafsnit, fra hvis Yderside den i Bygning og Størrelse med samme paa foregaaende Par nøie overensstemmende Exognath udgaar. Endelig bemærkes ved stærk Forstørrelse og Compression i Spidsen af sidste Segment et yderst lidet, men tydeligt afsat Endeled. Leddenes Antal bliver saaledes egentlig 7, sva-

branch, which constitutes the actual trunk, and results from a coalescence of the endognath and the mesognath, protends as a slender, linguiform lobule, beset along the inner margin with bristles, and does not exhibit any distinct articulation. The middle branch (exognath), which obviously corresponds to the membranous plate on the 2nd pair of maxillæ, is considerably larger, and, like the innermost, directed anteriorly, consisting, too, of a somewhat lamellar basal portion, densely beset with bristles along the outer margin, and a delicate, inwardly curving and exceedingly sinuous terminal lash, the outer part of which is divided into short articulations, beset with plumose bristles. Finally, the outermost branch (the so-called epignath), cutaneous in substance and without bristles, has the form of a comparatively large plate, protending into two conical lobes — one directed anteriorly and one posteriorly.

The 2nd pair of maxillipeds (fig. 14) exhibit the same principal parts as the foregoing pair, though of considerably modified appearance. The innermost branch, in particular, is much more developed, constituting a geniculate stem, curving inward, and divided into 6 distinct articulations. Of these articulations, the penultimate is the largest, and, as it were, tumified in the middle, and furnished along the outer margin with numerous long and stiff bristles. The last articulation, which, by an exceedingly oblique suture, is separated from that preceding it, is very short and armed with several large spines, varying in length, 3 of which, however, are remarkably long. The exognath, attached to the outer margin of the 2nd articulation of the stem, consists, as does that on the preceding pair, of a somewhat compressed basal portion, broadest at the root, and beset along the outer margin with long, curving plumose bristles, having also a slender terminal lash, directed inwards, and less sinuous than that on the 1st pair. The epignath is also present, though much smaller than that on the preceding pair, the anteriorly directed lobe being entirely wanting.

The 3rd pair of maxillipeds (fig. 15) are chiefly distinguished from the other buccal appendages by their considerable size and pediform structure. They attain almost the entire length of the carapax, and, in front, project considerably beyond the scale of the 2nd pair of antennæ. Apparently, the stem of these maxillipeds consists of only 4 segments, — a short and thick basal articulation, an exceedingly elongate and very sinuous 2nd articulation, a 3rd articulation, scarcely half as large, and an extremely flattened, almost spatulate, terminal articulation. On closer examination, however, the basal articulation is found to be composed of 2 imperfectly separated segments, of which the 2nd sends off from its outer margin a short, linguiform lappet, that hardly, however, as assumed by Krøyer, can correspond to the epignath on the 2 preceding pairs. Moreover, on the next articulation there is a trace, faint indeed, of a basal section, from the outer margin of which proceeds the exognath, precisely similar in size and structure to that on the preceding pair. Finally, when examined under a powerful magnifier and highly compressed,

rende til hvad Tilfældet er paa de egentlige Fødder. Samtlige Led er mere eller mindre tæt børstebesatte. Navnlig er det yderste Afsnit tæt haaret og i Kanterne med visse Mellemrum desuden bevæbnet med Knipper af tynde Torner.

1ste Fodpar (Fig. 16) er neppe længere end 3die Par Kjævefødder, men langt kraftigere bygget. Det er som de følgende Par enkelt, uden ydre Vedhæng ved Basis, og bestaar, den bevægelige Finger iberegnet af 7 vel begrændsede Led, hvoraf de 3 første er ganske korte. 4de Led forbinder sig med det foregaaende ved en meget skjæv Articulation og er noget udvidet mod Enden samt af kantet, næsten prismatisk Form: den ydre Kant løber fortil ud i en temmelig stærk tornformig Fortsats og er omkring denne besat med lange Børster. 5te Led er ganske kort, neppe længere end bredt og meget bevægeligt forbundet saavel med det foregaaende som efterfølgende; det er paa den ydre Side tæt haaret og gaar oventil ved Enden ud i 2 stærke Torner. 6te Led eller Haanden er kraftigt udviklet, ved Basis ligesom opsvulmet, fortil mere og mere affladet og ogsaa noget bredere. Enden er næsten tvært afskaaret og danner en skarp, noget buet Kant, imod hvilken den til det ydre Hjørne fæstede kloformige Finger kan indboies. Det indre Hjørne er udtrukket til en skarp lige fortilrettet Fortsats, der forestiller den rudimentære ubevægelige Finger. Haanden er ligesom Størsteparten af den øvrige Fod kun besat med meget korte Haar.

2det Fodpar (Fig. 17) er meget tyndt og svagt bygget, men lige udstrakt neppe kortere end 1ste. Det bæres ialmindelighed slaaet ind under Forkroppen og er derfor sjelden synligt, naar Dyret sees ovenfra. Af Leddene er 4de og 5te længst og danner med hinanden en mere eller mindre stærk knæformig Boining. 6te Led eller Haanden er neppe bredere end det foregaaende og omtrent halvt saa langt. Spidsen danner en liden, men fuldstændig Sax (se Fig. 18), paa hvilken dog Fingrene er særdeles korte, idet de neppe er $^1/_3$ saa lange som Palmen.

3die Fodpar (Fig. 19) er ubetydelig længere end foregaaende, men noget kraftigere bygget, navnlig hvad det basale Afsnit angaar. Det afsmalnes successivt mod Enden, der er sylformigt tilspidset. Af Leddene er det 5te længst. Det overmaade lille sidste Led eller Endekloen gaar i Flugt med næstsidste, men er skilt fra samme ved en tydelig Sutur.

De 2 følgende Par (Fig. 20), der forestiller de egentlige Gangfødder, er indbyrdes af ens Udseende, omtrent af foregaaende Pars Længde, men langt kraftigere byggede. Af Leddene er 4de og 6te længst og omtrent indbyrdes lige lange og betydelig større end 5te. Sidste Led er omat the point of the last segment can be detected an extremely minute, though distinctly defined terminal articulation. Hence, the number of articulations is strictly 7, corresponding to that on the true legs. All the articulations are more or less closely beset with bristles. The outermost section, in particular, is densely clothed with hairs, and at intervals furnished along the edges with bunches of slender spines.

The 1st pair of legs (fig. 16) are scarcely at all longer than the 3rd pair of maxillipeds. Like the following pairs, they are simple, having no exterior appendages at the base, and consist, inclusive of the moveable dactylus, of 7 distinctly separated segments, of which the 3 first are exceedingly short. The 4th segment is connected with the preceding by means of an extremely oblique articulation, and is somewhat expanded towards the extremity, with an angular, almost prismatic form: the outer margin extends forward (anteriorly) as a rather prominent spiniform projection, beset round the latter with long bristles. The 5th segment is quite short, scarcely longer than broad, and very flexibly connected alike with the preceding and the succeeding segments; on the outer side, it is densely clothed with hair, and projects at the extremity, above, into 2 powerful spines. The 6th segment, or hand, is strongly developed, with the base, as it were, swollen, anteriorly gradually applanated, and also somewhat broader. The extremity is well-nigh truncate, and constitutes a sharp, slightly arcuate edge, towards which the unguiform dactylus, attached to the outer corner, admits of bending in. The inner corner is drawn out into a sharp tooth, directed straight forwards, which represents the rudimentary immobile finger. The hand, like the greater part of the rest of the foot, is clothed with exceedingly short hairs.

The 2nd pair of legs (fig. 17) are very thin and of fragile construction, but, fully extended, hardly shorter than the 1st pair. As a rule, they are carried, doubled up under the cephalo-thorax, and hence are rarely visible when the animal is seen from above. Of the segments, the 4th and 5th are the longest, and constitute together a more or less prominent geniculate flexure. The 6th segment, or hand, is scarcely at all broader than the preceding, and about half as long. Its extremity assumes the shape of a small, but perfectly formed chela (see fig. 18), on which, however the dactyli are exceedingly short, attaining scarcely one-third the length of the palm.

The 3rd pair of legs (fig. 19) are but very little longer than the preceding, of a somewhat more powerful structure, however, in particular the basal section. They taper gradually to the extremity, which has an awl-shaped point. Of the segments, the 5th is the longest. The last, exceedingly small segment, or terminal claw, projects in a line with the penultimate, from which, however, it is separated by a well-marked suture.

The 2 succeeding pairs (fig. 20), which represent the true ambulatory feet, are similar in appearance, of about the same length as the preceding pair, but much more powerful in structure. Of the segments, the 4th and 6th are the longest, about equal in length, and considerably

dannet til en kraftig tilspidset og svagt krummet Endeklo. Begge disse Fodpar er temmelig rigeligt besatte med korte Borster.

Gjellernes Antal er (se Fig. 21) 5 paa hver Side, svarende til de 5 Par Fodder. I sin Bygning og Udseende viser de intet usædvanligt.

Bagkroppens Svommevedhæng (Fig. 24—25) er kraftigt udviklede og rettede noget skraat udad til Siderne, saa at deres ydre Del viser sig, naar Dyret sees ovenfra (Fig. 1), ragende frem til hver Side. De bestaar af en særdeles tyk og muskulos Roddel eller Stamme, til hvis Ende er indleddet 2 uligestore Grener. Den ydre af disse er størst, dannende en langs Kanterne tæt borstebesat, lancetformig Plade af Stammens dobbelte Længde. Den indre Gren er neppe mere end halvt saa lang, paa 1ste Par uleddet, paa de ovrige bestaaende af to tydelige Segmenter. Paa de to forreste Par er denne Gren noget ulige hos begge Kjøn. Hos Hunnerne er den paa 1ste Par (Fig. 24) af elliptisk Form, men noget vreden, saa at den vanskeligt kan udbredes i samme Plan. Hos Hannerne er den (Fig. 26) derimod tydelig indknebet paa Midten og noget udvidet i hver Ende, samt her forsynet med lange og stive, ucilierede Borster. Paa 2det Par er denne Gren hos Hunnerne (Fig. 25) fuldkommen af samme Udseende som paa de følgende, bestaaende af 2 med hinanden knæformigt forbundne Segmenter, hvoraf det yderste er længst og smalt lancetformigt. Hos Hannerne har den (Fig. 27) et temmelig afvigende Udseende. Den bestaar vistnok ogsaa her af 2 Segmenter, men det yderste er her tvedelt eller gaar ud i to ulige lange, med stærke Borster besatte Lapper.

Det midterste Halevedhæng (Fig. 28), der egentlig forestiller Bagkroppens sidste Segment, er af smal, lancetdannet Form og oventil langs ad Midten noget udhulet, med to stumpe Sidekjøler, hvoraf enhver bag Midten hæver sig til 2 skarpe tornformige Fortsatser. Enden er udtrukket til en triangulær Spids, og til hver Side af denne er indleddet en kort Torn. Langs ad Sidekanterne af Vedhænget findes desuden en tæt Rad af Fjærborster.

De ydre Halevedhæng (Fig. 28), der sammen med det midterste danner den saakaldte Halevifte, bestaar af en kort, paa Ydersiden i en stærk tornformig Fortsats udgaaende Roddel og to omtrent lige lange pladeformige Grene. Den ydre af disse er noget bredere end den indre og har den ydre Kant glat samt løbende bagtil ud i en stærk Torn, hvorfra en tydelig Sutur strækker sig paaskraa tværsover Pladens ydre Del. Kanterne er forøvrigt paa begge Grener forsynede med en regelmæssig Rad af korte Fjærborster. Den øvre Flade er paa den ydre Gren forsynet med to, paa den indre med en enkelt stump Længdekjøl.

Farven er i levende Tilstand overalt rødlig brun, som

larger than the 5th. The last segment is transformed into a strong, pointed, and slightly curved terminal claw. Both these pairs of legs are rather closely beset with short bristles.

The branchiæ (see fig. 21) are 5 in number on either side, corresponding to the 5 pairs of feet. In their structure and appearance they exhibit nothing uncommon.

The natatory appendages of the abdomen (figs. 24, 25) are powerfully developed and directed somewhat obliquely sideways; hence, their exterior part appears, when the animal is viewed from above (fig. 1), to project out from either side. They consist of an exceedingly thick and muscular basal portion, or stem, to the end of which are jointed in 2 branches of unequal size. The outer branch is the larger, constituting a lanceolate plate, twice the length of the stem, and thickly beset with bristles along the edges. The inner branch is scarcely half as long; on the 1st pair it has no articulations, on the others it consists of two distinct segments. On the 2 foremost pairs, this branch differs somewhat in the 2 sexes. In the females, it has on the 1st pair (fig. 24) an elliptic form, but is somewhat twisted, so as with difficulty to admit of being spread out in the same plane. In the males, on the other hand, it is (fig. 26) distinctly constricted in the middle, and somewhat expanded at either extremity, as also furnished with long and stiff unciliated bristles. On the 2nd pair, this branch is in the females (fig. 25) of precisely the same appearance as on those succeeding it, consisting as it does of 2 connected geniculate segments, of which the outer one is the longer, and narrow lanceolate. In the males, it exhibits (fig. 27) a rather different appearance. True, it consists of 2 segments; but the outer one is bipartite, or protends in 2 lobes of unequal length, beset with strong bristles.

The telson (fig. 28), that strictly represents the last segment of the abdomen, is slender, lanceolate in form, and somewhat hollowed out above, along the middle part, with two obtuse lateral carinæ, each of which, posterior to the middle, rises as an acute spiniform prolation. The extremity is drawn out to a sharp triangular point, on either side of which is jointed in a short spine. Extending along the lateral borders of the appendage, occur moreover a close-set series of plumose bristles.

The exterior caudal appendices or uropoda (fig. 29), which, together with the telson, form the so-called caudal fan, consist of a short basal part, produced on the outer side as a strong spiniform prolation, and of two lamellar branches about equal in length. The outer of these branches is somewhat broader than the inner, with the exterior margin smooth and projecting posteriorly as a powerful spine, whence a distinct suture passes obliquely straight across the outer portion of the plate. For the rest, the borders of both branches are furnished with a regular series of short plumose bristles. On the upper surface of the outer branch occur two obtuse, longitudinal carinæ, on that of the inner a single one.

Colour in a living state everywhere reddish-brown, as

oftest shatteret med større uregelmæssige Pletter eller Skjolde af en mørkere brun Couleur.

Længden af de største Exemplarer er, maalt fra Enden af 2det Par Foleres Blad til Spidsen af det midterste Halevedhæng 130^{mm}, og den her omhandlede Form staar saaledes neppe tilbage i Størrelse for nogen af de tidligere bekjendte Arter af Slægten.

Udvikling. De under Hunnernes Bagkrop fæstede Æg er (se Fig. 2) forholdsvis af temmelig betydelig Størrelse, hvilket tor tyde hen paa, at Ungernes Udvikling er forbunden med en mindre fuldstændig Metamorphose end hos de øvrige *Crangonider*. Hos ingen af de erholdte Exemplarer var dog Æggenes Udvikling saa vidt fremskreden, at dette med Sikkerhed kunde constateres.

Ganske unge Individer af kun 16—18 Mm.'s Længde er af noget slankere Kropsform end fuldt udvoxede Dyr og har Pandehornet forholdsvis større og de tornformige Fortsatser paa Legemet skarpere fremtrædende. Saavel paa Rygskjoldets som Bagkroppens Overflade findes spredte og temmelig lange Haar.

Forekomst og Levevis. I vore Have er denne Art en ægte Dybvandsform, som neppe nogensinde her træffes for i en Dybde af omkring 100 Favne, medens den gaar ned lige til 459 F. og maaske endnu dybere. Derimod synes den ved Kamtschatka at leve paa betydelig grundere Vand, da den her, ifølge Tilesius fanges i stor Mængde nær Kysten af de Indfødte, der anvender den til Næring. Ligesom de øvrige *Crangonider* er den en udpræget Bundform, hvilket tydeligt nok fremgaar af dens hele Organisation og navnlig af de stærkt incrusterede Integumenter, der giver Legemet en betydelig specifisk Vægt og neppe tillader Dyret at gjøre ret lange Udflugter i Vandet. De af os indsamlede Exemplarer var ogsaa kun lidet livlige i sine Bevægelser og holdt sig fortrinsmeste rolige paa Bunden af de Kar, hvori de opbevaredes for nærmere Observation.

Udbredning. Saavel de til Grund for Tilesius's som Owen's Beskrivelser liggende Exemplarer var fra Kamtschatka, som tidligere var det eneste bekjendte Findested for nærværende Art.

I et nylig af Dr. Stuxberg udgivet interessant Skrift betitlet: "Evertebratfaunaen i Sibiriens Ishav" anføres imidlertid denne Art at være fundet under Nordenskjölds Expedition 1876 i det kariske Hav paa et Par Lokaliteter.

Under vor Expedition har vi taget den paa 6 forskjellige Stationer, hvoraf de 4 tilhører Havet omkring Spitsbergen, medens de 2 øvrige ligger vidt adskilte, den ene ved Jan Mayen, den anden i Havet udenfor vor Vestkyst.

Dens for Tiden bekjendte geografiske Udbredningsfelt strækker sig herefter fra Kamtschatka og Behringsstrædet vestlig idetmindste til 8° V. L. og fra den 63de til den 80de Bredegrad.

a rule relieved with comparatively large irregular spots or patches, of a darker brown colour.

The *length* of the largest specimens, measured from the extremity of the scale of the 2nd pair of antennæ to the tip of the telson, reaches 130^{mm}; and hence the form here treated of can, as regards size, hardly yield precedence to any of the previously known species of the genus.

Development. — The eggs attached beneath the abdomen of the females (see fig. 2) are comparatively large, a circumstance from which, perhaps, we may infer, that the development of the young animals is attended with a less complete metamorphosis than in any of the other *Crangonidæ*. In none, however, of the specimens collected had the ova attained a stage of development that would admit of confirming the assumption with certainty.

Very young animals, not exceeding 16—18 millimetres in length, have the body of a somewhat more slender form than full-grown individuals, the rostrum, too, relatively larger, and the spiniform prolations on the body more sharply defined. Both on the carapax and the surface of the abdomen are seen scattered hairs of considerable length.

Occurrence and Habits. — In the North Atlantic, this species is a true deep-sea form, rarely, if ever, met with at a depth less than about 100 fathoms, though elsewhere it descends to 459 fathoms, and possibly still deeper. On the other hand, off the coast of Kamtschatka it would appear to inhabit much shallower water, being there, according to Tilesius, taken near the coast in great abundance by the natives, who consume the animal as food. Like all other *Crangonidæ*, it is a well-marked bottom-form, a fact sufficiently apparent from its whole organization, and in particular from the thickly incrusted integuments, which give to the body a considerable specific weight, and can hardly admit of the animal travelling far through the water. Nor were the specimens we collected particulary brisk in their movements, keeping as they did during the greater part of the time quietly at the bottom of the vessels in which they were preserved for closer examination.

Distribution. — The specimens to which the descriptions both of Tilesius and of Owen refer, were from off Kamtschatka, formerly the only known habitat of the present species.

According to an interesting paper lately published by Dr. Stuxberg, bearing title: — "Evertebratfaunaen i Sibiriens Ishav" (The Evertebrate Fauna in the Polar Seas of Siberia), this species would appear to have been taken on Nordenskjöld's Expedition in 1876, from the Kara Sea, in one or two localities.

During the course of our Expedition, we obtained the animal at 6 different Stations, 4 in the sea surrounding Spitzbergen, the 2 others lying wide apart, one at Jan Mayen, the other off the western shores of Norway.

Hence, the geographical distribution of the species as yet known, ranges in a westerly direction from Kamtschatka and Behring's Strait at least to long. 8° W., and from the 63rd to the 80th parallel of latitude.

At Arten er en ægte hoinordisk og arktisk Form synes klart saavel af dens ovenfor omtalte geographiske Udbredning som af den Omstændighed, at saagodtsom alle Stationer, hvor den under vor Expedition er observeret, tilhører den kolde Area.

That the animal in question is a true Arctic form, seems manifest, alike from its above recorded geographical distribution and the fact of well-nigh all the Stations at which the species was met with on the Norwegian Expedition having belonged to the cold area.

Fam. **Alpheidæ.**

Gen. **Bythocaris,** G. O. Sars. 1869.

Nye Dybvandscrustaceer fra Lofoten. Vid. Selsk. Forh. 1869.

Slægtscharacteristik. Legemsbygningen noget lig samme hos Slægten *Hippolyte*. Rygskjoldet kort og hvælvet, fortil i Midten dannende en til Siderne tydeligt begrændset noget hævet Pandedel, der ender med 3 simple fortilrettede Fortsatser, hvoraf den midterste forestiller Pandehornet. Sidefortsatserne de enormt udviklede Supraorbitaltorner. En Antenne- og Hepatical-Torn tilstede, derimod ingen Pterygostomialtorn. Bagkroppen kraftigt udviklet, med 3die Segment ovenfil pukkelformigt og bagtil fremspringende; Epimererne hos Hunnen særdeles store og afrundede. Øinene smaa. Folerne næsten fæstede i samme horizontale Plan; 1ste Par med 2 Svøber; 2det Par med særdeles stort og bredt Blad. Kindbakkerne uden Palpe kun forsynet med en enkelt cylindrisk, i Enden afstumpet Tyggegren. 3die Par Kjævefødder forsynet ved Basis med en rudimentær Exognath; Stammens sidste Led sammentrykt, skjævt udvidet og bevæbnet med en enkelt Rad af korte Tænder. 1ste Fodpar som hos Hippolyte; 2det Par meget smækkert og svagt, med 9-leddet Tarse. Gjellerne paa hver Side 5, hurtigt tiltagende i Storrelse bagtil. Det midterste Halevedhæng stærkt forlænget, med afstumpet Spids og særdeles smaa Endetorner. De ydre Halevedhængs Endeplader af meget ulige Storrelse. Udviklingen directe, uden Metamorphose.

Alm. Bem. I Aaret 1869 opstillede jeg denne nye Slægt for en eiendommelig af mig paa de store Dybder ved Lofoten opdaget Caride, *B. simplicirostris*, som vistnok i sin almindelige Habitus stemmede nær overens med Slægten *Hippolyte*, men som paa den anden Side viste en Del mærkelige Afvigelser, der gjorde det nødvendigt at skille den generiskt fra hin Slægt. Senere er 2 forskjellige Former blevne beskrevne, som aabenbart tilhører samme Slægtstype, nemlig *Hippolyte Payeri* Heller og *Hippolyte Panschii* Buchholz, og paa vor Expeditions sidste Togt er endnu en prægtfuld ny Art af samme Slægt bleven opdaget, nemlig den nedenfor nærmere beskrevne *Bythocaris leucopis*. Slægten tæller altsaa for Tiden ikke mindre end 4 forskjellige Arter, som alle i de væsentlige Characterer stemmer over-

Fam. **Alpheidæ.**

Gen. **Bythocaris,** G. O. Sars. 1869.

Nye Dybvandscrustaceer fra Lofoten. Vid. Selsk. Forh. 1869.

Generic Character. — Structure of body exhibiting some resemblance to that in the genus *Hippolyte*. Carapax short and arcuate, forming anteriorly in the middle a distinctly defined and rather elevated frontal area, that terminates with 3 simple, anteriorly directed processes, the median representing the rostrum and the lateral the enormously developed supraorbital spines. One antennal and one hepatical spine present on either side, but no pterygostomial spine. Abdomen powerfully developed, with third segment hunched above, and projecting posteriorly; epimera in female exceedingly large and rounded. Eyes small; antennæ attached almost in the same horizontal plane; first pair with 2 flagella; second pair with an exceedingly large and broad scale. Mandibles without palps, merely furnished with a cylindric masticatory branch, obtuse at the end. Third pair of maxillipeds provided at base with a rudimentary exognath; last joint of stem compressed, obliquely dilated, and armed with a single row of short teeth. First pair of legs as in Hippolyte; second pair exceedingly slender and fragile, with a nine-jointed tarsus. Branchiæ on either side 5, rapidly increasing in size posteriorly. Telson very elongated, with an obtuse point and exceedingly small terminal spines. Terminal plates of uropoda very unequal in size. Development direct, without any metamorphosis.

General Remarks. — In the year 1869 I established this new genus, for the reception of a remarkable Caridian I had taken in the great depths off Lofoten. — viz. *B. simplicirostris*, which, in its general habitus, did indeed closely agree with the genus *Hippolyte*, but, on the other hand, exhibited a number of striking deviations, that obviously called for generic separation from that genus. Since then, 2 different forms have been described, both clearly belonging to the same generic type. — viz. *Hippolyte Payeri* Heller and *Hippolyte Panschii* Buchholz; and on the last cruise of our Expedition we obtained a third new and magnificent species of the same genus, viz. *Bythocaris leucopis*, described more in detail below. The genus comprises therefore at present as many as 4 different species, all of which

ens og saaledes danner tilsammen en vel begrændset eiendommelig Type blandt Carriderne.

Af de tidligere bekjendte Slægter kommer den utvivlsomt *Sl. Hipolyte* nærmest, men skiller sig fra denne blandt andet meget væsentligt ved det særdeles korte og simple Pandehorn og de enormt udviklede Supraorbitaltorner, der sammen med Pandehornet danner en eiendommelig og meget tydeligt begrændset, pladeformig, i Enden trekantet Pandedel: fremdeles ved Følernes indbyrdes Stilling samt Kindbakkernes meget forskjellige Bygning, endelig ogsaa ved den usædvanlige Udvikling af 2det Par Føleres Blad og ved Halevedhængenes Form.

Endnu en Character, som det først under vor Expedition lykkedes mig at faa sikkert constateret, fortjener særligt at udhæves, og det er, at Ungerne ikke gjennemgaar den sædvanlige postembryonale Forvandling eller saakaldte Larvetilstand, men kommer ud af de usædvanlig store Æg forsynede med alle sine blivende Lemmer. Slægten skiller sig i denne Henseende fra alle bekjendte Carider, alene med Undtagelse af den ligeledes af mig opstillede Slægt *Cryptocheles*, hos hvem jeg har fundet Forholdet fuldkommen ligedant.

Alle Slægtens Arter er udprægede Dybvandsformer og bærer ogsaa tydeligt Præget heraf ved de usædvanlig smaa og ufuldkomment udviklede Øine.

agree in their principal characters, and thus constitute together a well-defined, peculiar type among the Caridians.

Of the genera hitherto known, it unquestionably approximates closest the genus *Hippolyte*, but is however most saliently distinguished from that form by reason of its exceedingly short and simple rostrum and prodigiously developed supraorbital spines, which, along with the rostrum, constitute a peculiar and well-marked frontal area, tridentate at the extremity; moreover, by the relative position of the antennæ, as also the very different structure of the mandibles; finally, too, by the unusual development of the scale of the 2nd pair of antennæ and by the form of the caudal appendages.

Another characteristic peculiarity specially worthy of notice, which I first succeeded in fully substantiating on the Norwegian Expedition, lies in the young of the animal not passing through the usual postembryonic metamorphosis, or the so-called larval stage; they leave the remarkably large ova provided with the full number of appendages. So far, the genus is distinguished from every known Caridian, save only *Cryptocheles*, also established by myself, in which I have found precisely the same characteristic.

All the species of the genus are true deep-sea forms, of which, too, they give manifest indication in their unusually small and imperfectly developed eyes.

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4. **Bythocaris leucopis**. G. O. Sars, n. sp.

(Pl. III, Fig. 1—26).

Bythocaris leucopis, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 1.

Artscharacteristik. Rygskjoldet fortil med en tydelig Længdekjøl bevæbnet med en enkelt liden fortilrettet Tand i Midten. Pandedelen noget fremspringende; den midterste Tand (Pandehornet) kjendeligt længere end Sidetænderne, spidst uddragen og overragende Øinene. Disse meget smaa og smale, med opakt hvidt Pigment. 1ste Par Foleres indre Svøbe næsten 3 Gange længere end den ydre. 2det Par Føleres Blad af enorm Storrelse, stærkt udvidet mod Enden og her tvært afskaaret med den forreste Rand fint cilieret: det tandformige Fremspring i det ydre Hjørne tæt trykket til Bladet og neppe overragende den forreste Rand. Det midterste Halevedhæng med Spidsen i Midten tydeligt udrandet og til hver Side af Udrandingen bevæbnet med 2 særdeles smaa Torner. Farven prægtfuld morgenrod. Længden indtil 95^{mm}.

Findesteder. Stat. 295. 297.

Bemærkninger. Fra de øvrige Arter af Slægten er den her omhandlede Form let kjendelig, foruden ved sin

4. **Bythocaris leucopis**, G. O. Sars, n. sp.

(Pl. III, figs 1—26).

Bythocaris leucopis, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 1.

Specific Character. — Carapax anteriorly with a distinct longitudinal carina, armed in the middle with a single small, anteriorly directed tooth. Frontal area somewhat projecting; medial tooth (rostrum) perceptibly longer than lateral teeth, sharply produced, and extending beyond the eyes. The latter very small and narrow, with an opaque, white pigment. Inner flagellum of 1st pair of antennæ almost three times as long as outer. Scale of 2nd pair of antennæ of prodigious size, greatly expanded toward the extremity, and here cut straight off, with the anterior margin finely ciliated; dentiform projection at outer edge closely pressed against the scale, and scarcely, if at all, extending beyond the foremost border. Telson with the point in the middle considerably emarginated, and armed, on either side of the emargination, with 2 extremely small spines. Colour a magnificent rosy red. Length reaching 95^{mm}.

Locality. — Stats. 295, 297.

Remarks. — Irrespective of its great size and magnificent colouring, the form here diagnosticated may be readily

betydelige Storrelse og pragtfulde Farve, ved de smaa, ufuldkomment udviklede og lyst pigmenterede Øine, de overordentlig brede Antenneblade og den stærkt forlængede indre Svobe paa 1ste Par Folere. I de fleste ovrige Punkter viser den særdeles stor Lighed med folgende Art.

Beskrivelse. Legemets Form er (se Fig. 1 og 2), sammenlignet med de egentlige Hippolyter, temmelig slank og noget sammentrykt fra Siderne. Den ligner i denne Henseende noget mere samme hos Arterne af den nærstaaende Slægt *Virbius* Stimpson. Dog synes Forkroppen paa Grund af det lidet udviklede Pandehorn usædvanlig kort i Forhold til Bagkroppen.

Rygskjoldet er oventil temmelig stærkt hvælvet, med Høiden betydelig storre end Breden og den øvre Contour fortil noget bueformigt boiet. I den forreste Del bemærkes en tydelig, men ganske kort median Længdekjol, der er bevæbnet med en enkelt liden fortilrettet Tand. Foran denne Kjol skyder frem i horizontal Retning en i Midten noget fordybet trekantet Pandeplade, der hvælver sig over Øinenes Insertion og til hver Side er begrændset ved en tydelig markeret Kant. Den gaar fortil ud i 3 spidse Tænder, hvoraf de 2 yderste og korteste egentlig forestiller de usædvanlig stærkt udviklede Supraorbitaltorner, medens den midterste, spidst udtrukne og ud over Øinenes Ender ragende Tand er det rudimentære Pandehorn. Den forreste Rand af Rygskjoldet viser nedenfor Pandepladen og lige over 2det Par Føleres Insertion en kort Antennaltorn hvorfra en noget bugtet Linie strækker sig bagtil og antyder et Slags Begrændsning mellem Mave- og Leverregionen. Længere nede og noget fjernet fra Randen findes en spids saakaldt Hepaticaltorn, der fortsætter sig bagtil i en kort Kjol. De nedre forreste Hjørner af Rygskjoldet er derimod simpelt tilrundede uden noget tandformigt Fremspring, og de nedre Kanter er i hele sin Længde jevnt bueformigt boiede. Rygskjoldets bagre Rand er oventil noget fortykket og ganske svagt udrandet i Midten. De afrundede Sidefloier dækkes for en Del af 1ste Bagkropssegments Epimerer (se Fig. 2).

Bagkroppen er meget kraftigt udviklet og mere end dobbelt saa lang som Rygskjoldet. Af dens Segmenter er de to forreste som sædvanligt oventil ganske korte og adskilte ved storre hudagtige Mellemrum. 3die Segment er som hos Hippolyterne oventil stærkt pukkelformigt fremspringende og gaar bagtil i Midten ud i en triangulær noget nedad bøiet Fortsats. De 3 bagerste Segmenter aftager hurtigt saavel i Høide som i Brede, og sidste Segment er meget smalt og næsten cylindriskt. Epimererne paa de 3 forreste Segmenter er hos de ægbærende Hunner særdeles store og brede; navnlig udmærker sig i denne Henseende 2det Segments Epimerer, som danner særdeles brede, elliptiske, udad convexe Plader, hvis Sidedele for en stor Del dækker saavel det foregaaende som efterfolgende Epimer (se Fig. 2). Hos Hannerne er disse Epimerer dog for-

distinguished from the other species of the genus by reason of the small, imperfectly developed, and faintly pigmented eyes, the remarkably broad antennal scales, and the greatly elongated inner flagellum on the 1st pair of antennæ. In most other respects, it exhibits great resemblance to the following species.

Description. — Form of body (see figs. 1, 2), as compared with that of the true Hippolytes, rather slender, and somewhat compressed from the sides. In this respect, the body has greater resemblance to that in the approximating genus *Virbius* Stimpson. Meanwhile, the cephalothorax would appear, from the slight development of the rostrum, to be unusually short as compared with the abdomen.

The carapax rather arched above, with the height very considerably in excess of the breadth, and the upper contour somewhat projecting anteriorly. On the foremost part, may be observed a distinct, but exceedingly short, median longitudinal carina, armed with a small, anteriorly directed tooth. In front of this keel protends horizontally, somewhat depressed in the middle, a triangular frontal plate, arching over the insertion of the eyes, and on either side marked off by a well-defined border. Anteriorly, it branches out into 3 pointed teeth, of which the 2 outermost and shortest, strictly, represent the unusually developed supraorbital spines, whereas the median tooth, sharply produced and jutting beyond the extremities of the eyes, is the rudimentary rostrum. On the foremost margin of the carapax, below the frontal plate and immediately above the insertion of the 2nd pair of antennæ, is seen a short antennal spine, whence a somewhat curved line extends posteriorly, indicating a kind of demarcation between the gastric and hepatic regions. Farther down, and at some distance from the margin, occurs a pointed, so-called hepatic spine, continued posteriorly as a short carina. The antero-lateral corners of the carapax are, on the other hand, simply rounded, without any dentiform projection, and the lower margins, throughout their entire length, uniformly arched. Above, the posterior margin of the carapax is somewhat incrassated, and very slightly emarginate in the middle. The rounded lateral wings are partially overlapped by the 1st segment of the abdomen (see fig. 2).

The posterior division of the body is very strongly developed, and more than twice the length of the carapax. Of its segments, the two foremost are, as usual, quite short above, and separated from each other by wide membranous spaces. As in the Hippolytes, the 3rd segment projects above, prominently hunched, extending posteriorly along the middle as a triangular, somewhat downward deflected prolation. The 3 hindmost segments diminish rapidly alike in height and in breadth, and the last segment is exceedingly narrow, and almost cylindrical. On the 3 foremost segments, the epimera in the ovigerous females are exceedingly large and broad; this is more particularly the case with the epimera of the 2nd segment, which constitute remarkably broad, elliptic, externally convex plates, whereof the lateral parts to a great extent overlap alike the preceding and the

holdsvis betydelig mindre og mere jevnt afrundede. 4de og 5te Segments Epimerer er rettede skraat bagtil og ender med et kort tandformigt Fremspring.

Øinene er særdeles smaa og dækkes for en stor Del af Pandepladen. De er af smalt kolledannet Form, med den ydre Del kun svagt udvidet og jevnt tilrundet. Øiepigmentet er ganske lyst, næsten kridthvidt og Synselementerne kun ufuldkommet udviklede.

Folerne er ligesom hos Crangoninerne næsten fæstede i samme horizontale Plan, hvorfor de, naar Dyret sees i Profil (Fig. 2), for en stor Del gjensidig dækker hinanden.

1ste Par Folere's Skaft (se Fig. 3) er temmelig kort, neppe halvt saa langt som Rygskjoldet. Af dets 3 Led er det 1ste størst, og af samme Længde som de 2 øvrige tilsammen. Det er ved Basis paa den ydre Side forsynet med den sædvanlige pladeformige Fortsats, der dog kun er lidet udviklet og af smal lancetdannet Form. Den indre Kant af Leddet er besat med korte Børster og har noget foran Midten et meget lidet tandformigt Fremspring. Sidste Led er noget kortere end 2det og i Enden tvært afskaaret. Af de 2 Svøber er den ydre hos Hannen omtrent dobbelt saa lang som Skaftet, hos Hunnen noget kortere; den er hos begge Kjøn cylindrisk og temmelig jevnt tyk lige til Spidsen som er udtrukken i en kort Endesnært, samt sammensat af talrige korte Led, besatte med de sædvanlige Knipper af klare, baandformige Sandsebørster. Den indre Svøbe er (se Fig. 1 og 2) stærkt forlænget, omtrent 3 Gange saa lang som den ydre, og afsmalnes jevnt mod Enden.

2det Par Folere (se Fig. 4) har en kort og tyk, utydelig segmenteret Roddel, der saagodtsom ganske er ubedækket af Rygskjoldet og udad springer frem i Form af en stærk trekantet Fortsats.

Det bladdannede Vedhæng er af en ganske usædvanlig Størrelse og saa stærkt udbredt mod Enden, at det i sin normale Stilling ikke blot moder det tilsvarende paa den anden Side, men ogsaa krydser samme (se Fig. 1). Af Form er det næsten trekantet, med den største Brede, der er betydelig større end den halve Længde, i dets yderste Del. Enderanden er næsten tvært afskaaret og viser istedetfor de sædvanlige Randborster kun en yderst fin Ciliering. Den indre Kant er ganske svagt buet og forsynet med de sædvanlige ciilierede Randborster, der dog kun er lidet udviklede og hurtigt aftagende i Længde mod det indre afrundede Hjørne af Bladet. Den ydre Kant er næsten lige og ganske glat samt gaar fortil ud i en tandformig Fortsats, der er tæt trykket til Bladet og overrages af Enderanden. Tværs over Bladet løber i diagonal Retning en stump Kjøl, der lidt efter lidt taber sig mod det indre Hjørne.

succeeding epimera (see fig. 2). In the males, these epimera, are, however, comparatively much smaller and more evenly rounded. The epimera of the 4th and 5th segments are directed obliquely, in a posterior direction, and terminate with a short dentiform process.

The eyes are extremely small, and covered to a great extent by the frontal plate. They are narrow and clavate in shape, with the outer portion but slightly dilated and uniformly rounded. The ocular pigment is quite light, approximating a chalky white, and the visual elements are imperfectly developed.

As with the Crangonians, the antennæ are attached almost in the same horizontal plane; and hence, when the animal is viewed in profile (fig. 2), they cover each other to a great extent.

The peduncle of the 1st pair of antennæ (see fig. 3) is rather short, scarcely half as long as the carapax. Of its 3 articulations, the 1st is the largest, equalling in length both the others taken together. At its base, it is provided on the exterior side with the usual lamelliform projection, which, however, occurs but slightly developed and narrow-lanceolate in shape. The inner edge of the articulation is beset with short bristles, and exhibits, a little anterior to the middle, an exceedingly small dentiform prolation. The terminal articulation is somewhat shorter than the 2nd, and truncate at the extremity. Of the 2 flagella, the exterior, in the male, is about twice as long as the peduncle, — in the female somewhat shorter; in both sexes it is cylindric in form, and nearly of a uniform thickness to the extremity, which is produced to a short terminal lash, as also composed of numerous short articulations, beset with the usual fascicles of translucent, riband-shaped sensory bristles. The inner flagellum (see figs. 1, 2) is considerably elongated, being about three times the length of the outer, and tapering gradually toward the extremity.

The 2nd pair of antennæ (see fig. 4) have a short and thick, indistinctly segmented basal portion, left well-nigh wholly uncovered by the carapax, and, externally, jutting forth in the form of a strong, triangular projection.

The squamiform appendage attains quite a remarkable size, and is, toward the extremity, so considerably expanded that, in its usual position, it not only meets the corresponding appendage on the opposite side, but even overlaps it (see fig. 1). In form it is almost triangular, with the exterior portion broadest; its greatest breadth considerably exceeds half the length. The terminal border is well-nigh truncate, and exhibits, in place of the marginal bristles usually observed, an exceedingly fine clothing of hairs. The inner margin is very slightly curved, and furnished with the usual ciliated marginal bristles, which, however, are but little developed and rapidly diminish in length toward the inner rounded corner of the scale. The outer margin is almost straight and perfectly smooth; moreover, it extends anteriorly as a dentiform projection, closely pressed up to the scale and overlapped by the terminal border. Straight across the scale, extends diagonally an obtuse carina, which gradually disappears toward the inner corner.

Svøben er (se Fig. 1 og 2) særdeles lang, selv adskilligt længere end hele Legemet og bestaar af et cylindriskt, 3-leddet Skaft (se fig. 4) og en traadformig, mangeleddet Endedel.

Overlæben (Fig. 5) er hjelmformig og temmelig bred, med Sidefløiene noget uddragne og den forreste Del fremspringende i Form af en stump Tand.

Underlæben (Fig. 6) er forholdsvis liden og bestaar af to noget divergerende, i Enden skjævt afskaarne Lapper, paa hvilke ingen Ciliering kunde opdages.

Kindbakkerne (Fig. 7) udmærker sig i høi Grad fra samme hos Sl. Hippolyte og nærstaaende Former derved, at de ganske mangler den forreste tandbærende Gren, hvorimod den bagre Gren (Tyggeknuden) er vel udviklet og danner Kindbakkens umiddelbare Fortsættelse. Denne Gren, der med Kindbakkens Corpus danner en omtrent ret Vinkel, er af cylindrisk Form og noget fortykket mod Enden. Den næsten tvært afkuttede Spids viser den sædvanlige Brolægning af knudeformige Ophøininger, der udmærker Tyggeknuden hos Hippolyterne, hvortil endnu kommer nogle faa spidse Tænder, der navnlig paa venstre Kindbakke er tydeligt udviklede. Fra den indre Side af Corpus udgaar en kort, i Enden stumpt tilrundet Fortsats, hvortil de stærke Rotationsmusklers chitinagtige Sene fæster sig. Af nogen Palpe findes intetsomhelst Spor.

1ste Par Kjæver (Fig. 8) er forholdsvis temmelig store og viser 3 vel udviklede Grener eller Lapper, hvoraf den midterste er størst, næsten oxeformigt udvidet og stærkt sammentrykt, samt langs sin indre Kant bevæbnet med korte tornformige Børster. Den indre Gren er smal, koniskt tilspidset og fortilkrummet, med begge Kanter og Spidsen børstebesat. Den ydre Gren, der som sædvanligt er fæstet høiere oppe og rettet mere udad, er smalt tungeformig, afstumpet i Enden og her besat med nogle fortilkrummede Børster.

2det Par Kjæver (Fig. 9) har den sædvanlige pladedannede Form. Det indre Parti eller den egentlige Kjævedel (Endognath) er vel udviklet og delt i 3 tydeligt begrændsede, men tæt sammentrængte og i den indre Kant rigeligt børstebesatte Tyggelapper, hvoraf den forreste er størst. Fra den ydre Side af denne Del udgaar en smal fortilrettet og i Spidsen med lange Børster forsynet Gren (Mesognathen), og længere udad den pladeformige Exognath, der som sædvanligt viser et fortilrettet, tungeformigt, med stærke Fjærbørster forsynet Parti og en bagudrettet, noget lancetformig Forlængelse.

1ste Par Kjævefødder (Fig. 10) er omtrent af samme Størrelse som 2det Par Kjæver og som disse hovedsageligt af membranos Beskaffenhed. Den egentlige Kjævedel eller Endognath bestaar af 2 tæt sammentrængte, brede og i den indre Kant tæt børstebesatte Tyggelapper. Mesognathen viser et lignende Udseende som paa 2det Par Kjæver. Exognathen er i sin basale Del ganske pladeformig og langs den ydre Kant forsynet med stærke Fjærbørster, men forlænger sig indad i en smalt cylindrisk af 2 utydeligt adskilte Led bestaaende Endesnært. Til den ydre Side af den fælles

The flagellum (see figs. 1, 2) is exceedingly long, a good deal longer even than the whole body, and consists of a cylindric, three-jointed peduncle (see fig. 4) and a filiform, multi-articulate terminal portion.

The labrum (fig. 5) is galeate in form and rather broad, with the lateral wings somewhat produced, and the anterior portion projecting as an obtuse tooth.

The labium (fig. 6) is comparatively small, and consists of two, somewhat diverging and at the ends obliquely truncated, lobules, on which no trace of ciliation could be detected.

The mandibles (fig. 7) differ essentially from those in the genus Hippolyte and other approximating forms, exhibiting as they do no trace of the foremost dentiferous branch, whereas the posterior branch (molar protuberance) is well developed, and constitutes the immediate continuation of the mandibles. This branch, placed about at right angles with the corpus of the mandibles, is cylindric in form and somewhat inspissated at the extremity. Its well-nigh truncate point exhibits the usual, so to speak, paved surface of tuberculiform prominences characteristic of the molar protuberance in the Hippolytes, as also a few sharp-pointed teeth, which, particulary on the left mandible, are distinctly developed. From the inner side of the corpus, extends a short and, at the extremity, obtusely rounded projection, to which are attached the strong chitinous sinew of the rotatory muscles. Of a palp no trace can be deteced.

The 1st pair of maxillæ (fig. 8) are comparatively large, with 3 well-developed branches or lobes, of which the median is the largest, almost securiform, and greatly compressed, as also, along its inner margin, armed with short, spiniform bristles. The inner branch is slender, conically pointed, and curved anteriorly, with both margins and the point beset with bristles. The outer branch, attached as usual higher up and more externally directed, is slender linguiform, and obtuse at the extremity, where it has a few anteriorly curving bristles.

The 2nd pair of maxillæ (fig. 9) exhibit the usual lamelliform shape. The inner portion, or maxillary part (endognath), is well developed, and divided into 3 distinctly defined, but closely arranged, and along the inner margin densely bristle-beset, masticatory lobules, of which the foremost is largest in size. From the outer side of this part, issues a slender branch (mesognath), anteriorly directed, and furnished at the point with long bristles, and farther out the lamelliform exognath, which as usual exhibits a linguiform, anteriorly directed part, furnished with strong, plumose bristles, and a posteriorly directed, somewhat lanceolate prolongation.

The 1st pair of maxillipeds (fig. 10) are about of the same size as the 2nd pair of maxillæ, and, like the latter, membranaceous in substance. The maxillary portion, or endognath, consists of 2 broad, closely arranged masticatory lobes, beset along the inner side with a dense armature of bristles. The mesognath presents a similar appearance to that on the 2nd pair of maxillæ. The exognath is quite lamelliform throughout its basal portion, and furnished along the outer margin with strong, plumose bristles, but extends inward as a slender, cylindric terminal lash, composed of

Roddel er fæstet en uregelmæssig oval, børstelos Plade af en eiendommelig spongios Structur, der forestiller Epignathen.

2det Par Kjævefødder (Fig. 11) er forholdsvis smaa og svage. De bestaar af en 5-leddet indadboiet Stamme og en til Ydersiden af samme ved Basis fæstet smal fortilrettet Exognath. Stammens næstsidste Led er særdeles stærkt oxeformigt udvidet og langs den forreste Halpart af den indadvendte Kant besat med lange stive Børster. Til den bagre Halvpart af denne Kant er fæstet det særdeles korte, men brede Endeled, der ligeledes langs sin indre Kant er tæt besat med korte tornformige Børster. Exognathen er meget ufuldkommet udviklet og viser ikke nogen tydelig Adskillelse i Basaldel og Endesnært. Af Epignath har jeg ikke fundet det mindste Spor.

3die Par Kjævefødder (Fig. 12) er som hos andre Carider stærkt udviklede og fodformige, samt rækker fortilstrakte næsten til Enden af 2det Par Foleres Blad. De bestaar af 4 paa hinanden følgende Afsnit eller Segmenter, hvoraf det 1ste er ganske kort og egentlig sammensat af 2 Led. 2det Segment er stærkt forlænget, noget vredent og ved Enden i den indre Kant forsynet med et kort tandformigt Fremspring. 3die Segment er ganske kort og simpelt cylindriskt. Sidste Segment er over 3 Gange saa langt, stærkt sammentrykt, paa Midten udvidet og i Enden meget skraat afskaaret samt bevæbnet med en Rad af circa 8 korte, men stærke brunligt farvede Torner. Ved Basis er dette Kjævefodpar forsynet med en ganske kort og rudimentær Exognath; derimod synes heller ikke her nogen Epignath at være tilstede.

1ste Fodpar (Fig. 13) er af kort og undersætsig Bygning og udviklet paa en lignende Maade som hos Slægten Hippolyte. Haanden er længere og tykkere end det foregaaende Led og danner en tydeligt udviklet Chela, hvis Fingre dog er betydelig kortere end selve Palmen.

2det Fodpar (Fig. 14) er særdeles spinkelt bygget og ialmindelighed slaaet ind under Forkroppen. Det ender som hos Hippolyte med en meget liden, men tydeligt cheliformt udviklet Haand, der i Enden er tæt børstebesat. Det foregaaende Afsnit, den saakaldte Tarse, er stærkt forlænget og delt i 9 Led.

De 3 bagre Fodpar (Fig. 15), der forestiller de egentlige Gangfødder, viser den sædvanlige Bygning. De er alle stærkt forlængede og temmelig spinkle, med 4de og 6te Led længst og indbyrdes omtrent af samme Størrelse. Endekloen er forholdsvis kort og i den bagre Kant forsynet med korte Torner.

Af Gjeller findes paa hver Side 5 (se Fig. 16), fæstede over Roden af de 5 Fodpar. Den forreste Gjelle er særdeles liden; de følgende tiltager hurtigt i Størrelse, og den sidste er meget betydelig større end nogen af de øvrige og

2 imperfectly separated articulations. To the outer side of the basal portion is attached an irregular ovate plate — which represents the epignath — without bristles, and exhibiting a peculiar spongy structure.

The 2nd pair of maxillipeds (fig. 11) are comparatively small and feeble. They consist of a five-jointed, inwardly curving stem and a slender, anteriorly bent exognath, attached to the outer side of the latter, at the base. The penultimate joint of the stem, securiform in shape, is greatly dilated, and beset, along the anterior half of the inward-directed margin, with long, stiff bristles. To the posterior half of this margin is attached the exceedingly short, but broad, terminal articulation, which, in like manner, along its inner margin, is densely beset with short, spiniform bristles. The exognath is very imperfectly developed, and does not exhibit any distinct partition in the basal part and the terminal lash. Of an epignath, I have failed to discover the slightest trace.

As in other Caridians, the 3rd pair of maxillipeds (fig. 12) are strongly developed, and pediform; anteriorly extended, they reach almost to the end of the scale of the 2nd pair of antennæ. They consist of 4 serial divisions, or segments, of which the first is quite short and, strictly, composed of 2 articulations. The 2nd segment is very considerably prolonged, a trifle twisted, and furnished at the extremity, along the inner margin, with a short dentiform projection. The 3rd segment is quite short, and simple cylindric. The terminal segment is more than three times as long as the 3rd, greatly compressed, dilated in the middle, and, at the extremity, very obliquely truncate, as also furnished with a row of about 8 short, but strong, dark-brown coloured spines. At the base, this pair of maxillipeds is provided with an exceedingly short and rudimentary exognath; but here, too, no epignath would appear to be present.

The 1st pair of legs (fig. 13) are of a short and thick-set structure, and developed as in the genus Hippolyte. The hand is longer and thicker than the preceding articulation, constituting a distinctly developed chela, of which, however, the fingers are considerably shorter than the palm.

The 2nd pair of legs (fig. 14) are exceedingly slender, and, as a rule, folded in under the anterior division of the body. As in the genus Hippolyte, they terminate with a very small, but distinctly cheliform hand, beset at the extremity with bristles. The preceding segment, or so-called tarsus, is very considerably prolonged, and divided into 9 articulations.

The three posterior pairs of legs (fig. 15), which represent the true pereiopoda, exhibit the usual structure. They are all of them considerably prolonged and somewhat slender, with the 4th and 6th joints longest, and nearly equal in size. The terminal claw is comparatively short, and furnished along the posterior margin with short spines.

Of branchiæ, there are 5 (see fig. 16) on either side, attached above the bases of the 5 pairs of feet. The foremost branchia is exceedingly small: the succeeding branchiæ increase rapidly in size, and the last of the series is very

med Spidsen noget bueformigt fortilkrummet. Deres Bygning er forovrigt den sædvanlige.

Bagkroppens Svommevedhæng (Fig. 17—20) er vel udviklede og som sædvanligt bestaaende af en tyk og muskulos Basaldel og 2 Grene. Den indre af disse er paa 1ste Par (Fig. 17) særdeles kort af oval Form og langs Kanterne tæt besat med divergerende Fjærborster. Hos Hannerne har denne Gren (se Fig. 19) en noget mere uregelmæssig Form end hos Hunnerne og er ved Enden forsynet med et særegent smalt Appendix. Paa de ovrige Par (se Fig. 18) er denne Gren vel udviklet, af lancetdannet Form ligesom den ydre og langs Kanterne besat med en enkelt Rad af stærke Fjærborster, hvortil endnu kommer et lidet smalt cylindriskt Appendix, der er fæstet til den indre Kant foran Midten. Paa 2det Par er hos Hannerne (se Fig. 20) dette Appendix dobbelt.

Det midterste Halevedhæng (Fig. 21) er stærkt forlænget, betydelig længere end sidste Segment, og temmelig smalt, jevnt aftagende i Brede mod Spidsen, som er tvært afkuttet og i Midten svagt, men tydeligt udrandet samt til hver Side af Udrandingen bevæbnet med 2 særdeles korte Torner (se Fig. 22). Langs Sidekanterne af Vedhænget bemærkes endnu paa hver Side en Rad af 4 meget smaa tandformige Fremspring ligesom en Del korte Borster.

De ydre Halevedhæng (Fig. 23), hvis korte Roddel gaar ud i en stærk bagudrettet Fortsats, har Endepladerne meget ulige udviklede, idet den indre er betydelig baade kortere og smalere end den ydre. Denne sidste viser et tydeligt afsat Endesegment og har den ydre Kant fuldkommen lige samt bagtil gaaende ud i en stærk tornformig Fortsats.

Farven er i levende Tilstand særdeles brillant, nemlig overalt smukt morgenrod, noget intensere ved Enden af hvert Bagkropssegment. Over Midten af Rygskjoldet bemærkes desuden et større uregelmæssigt sadelformigt Felt af en mork blaalig Farve. Øinenes Pigment er, som ovenfor anført ganske lyst, opakt hvidt, og stikker mærkeligt af mod de intensivt rødfarvede Øienstilke. Artsbenævnelsen "*leucopis*" er hentet herfra.

Længden af det største erholdte Exemplar er, maalt fra Enden af 2det Par Foleres Blad til Spidsen af det midterste Halevedhæng 95^{mm}, en Storrelse der langt overgaar samme hos de ovrige bekjendte Arter af Slægten.

Udvikling. Paa et af de indsamlede Exemplarer fandtes under Bagkroppen fuldmoden Rogn, og jeg fik herved Anledning til at anstille nogle Undersøgelser over Udviklingen. Allerede hos den først opdagede Art, *B. simplicirostris*, havde Æggenes ualmindelige Storrelse været mig paafaldende og ledet mig paa den Tanke, at dette maaske kunde antyde en eiendommelig Udviklingsmaade hos nærværende Slægt. En lignende paafaldende Storrelse havde Æggene ogsaa hos det undersøgte Exemplar af den her omhandlede Art (se Fig. 2), og heldigvis befandt de sig her netop i det sidste Udviklingsstadium, saa at den indsluttede Unge tydeligt kunde skimtes igjennem den tynde

considerably larger than any of the others, and has a somewhat bow-shaped, anteriorly curving point.

The natatory appendages of the abdomen (figs. 17—20) are well developed, consisting as usual of a thick and muscular basal portion and 2 branches. The inner of these branches is on the 1st pair exceedingly short, and densely beset along the margins with diverging, plumose bristles. In the males, this branch (see fig. 19) has a somewhat more irregular form than in the females, and is furnished at the extremity with a peculiar, narrow appendix. On the other pairs (see fig. 18), this branch is well developed, lanceolate in form, like the outer, and beset along the margins with a single series of strong, plumose bristles, as also provided with a small, narrow, cylindric appendage, attached, anterior to the middle, on the inner margin. In the males (see fig. 20), the 2nd pair have this appendix double.

The telson (fig. 21) is greatly prolonged, considerably longer than the terminal segment, and rather narrow, gradually diminishing in breadth toward the point, which is abruptly truncate, and in the middle slightly, but distinctly, emarginate, as also, on either side of the emargination, armed with 2 exceedingly short spines (see fig. 22). Along the lateral borders of the telson are observed on either side a row of 4 extremely small, dentiform projections, together with a number of short bristles.

The exterior caudal appendages (fig. 23), whose short basal part extends as a strong, posteriorly directed projection, have the terminal plates very unequally developed, the inner one being alike shorter and narrower than the outer. The latter plate exhibits a distinctly developed terminal segment, and has its outer margin perfectly straight, extending posteriorly as a strong, spiniform projection.

Colour, in a living state, exceedingly brilliant, everywhere a magnificent rosy red, a trifle more intense at the end of each segment of the posterior division of the body. Extending across the middle of the carapax, is observed moreover a large, irregular, saddle-shaped area, of a dark-bluish colour. The ocular pigment is, as stated above, wholly colourless, viz. an opaque white, and forms a striking contrast to the intensely red-coloured eye-stalks. The generic appellation "*leucopis*" is taken from the said characteristic.

Length of the largest specimen, measured from the end of the scale of the 2nd pair of antennæ to the point of the telson, 95^{mm}, a size very considerably exceeding that observed in any other species of the genus.

Development. — In one of the specimens collected, mature roe was found beneath the abdomen, which afforded opportunity of examining the development of the animal. On the discovery of the first species, *B. simplicirostris*, I had been struck by the unusual size of the eggs, and led to surmise that possibly it might indicate a peculiar mode of development in the present genus. The size of the eggs was equally striking in the specimen I examined of the species treated of here (see fig. 2): fortunately, too, they had reached the last stage of development; and hence the brood could be distinctly discerned through the delicate membrane (see figs. 24, 25), as also without great difficulty removed from

Æggehinde (se Fig. 24 og 25) og ogsaa uden stor Vanskelighed lod sig udpræparere og nøiere undersoge (Fig. 26). Det kunde herved med fuldkommen Sikkerhed constateres, at Ungerne hos nærværende Slægt, uligt hvad Tilfældet er hos de ovrige bekjendte Carider, gjennemgaar sin Forvandling i selve Ægget og kommer til Verden som fuldkomne Decapoder med fuldtallige Lemmer. Den noget afvigende Habitus, som den af Ægget udpræparerede Unge viser fra det voxne Dyr (se fig. 26), beror væsentlig kun paa den Omstændighed, at Følerne med sine Vedhæng endnu ikke har indtaget sin normale fortilrettede Stilling, men er slaaede tilbage langs ad Rygskjoldets Sider. Rimeligvis rettes disse Lemmer allerede strax efter den normale Udklækning ud i sin vanlige Stilling, og Ungen ligner da i alt væsentligt fuldkommen det voxne Dyr.

Forekomst og Udbredning. 4 vel vedligeholdte og levende Exemplarer af denne vakre Caride blev under Expeditionens sidste Togt optaget i Trawlnettet paa Stat. 295 fra det anselige Dyb af 1110 Favne. Dette er det eneste Punkt, hvor vi under vor Expedition har truffet den. Men senere, efter Expeditionens Slut, er af R. Collett fundet Levningerne af 2 Exemplarer af samme Art i Ventrikelen hos den mærkelige af ham beskrevne Dybvandsfisk, *Rhodichthys regina* Coll., der erholdtes paa den længere Vest beliggende Station 297 og fra et endnu betydeligere Dyb, nemlig 1280 Favne.

Begge de omtalte Stationer er beliggende i Havet mellem Jan Mayen og Finmarken og tilhører den kolde Area, hvoraf det med Sikkerhed tor sluttes, at nærværende Art er en ægte hoinordisk og arktisk Form, ligesom det af de enorme Dyb, paa hvilke den er forefundet, fremgaar, at den er en endnu mere udpræget Dybvandsform end nogen af de ovrige Arter af Slægten.

the eggs and carefully examined (fig. 26). Hence, it could be fully substantiated, that the young in this genus, contrary to what is the case in all other known Caridians, undergo their transformation in the egg itself, from which they emerge as perfect Decapods, with the number of their limbs complete. The somewhat deviating habitus which the young removed from the egg exhibit as compared with that of the full-grown animal (see fig. 26), arises chiefly from the antennæ, with their appendages, not yet having assumed the normal, anteriorly directed position, but, contrariwise, in their being folded back along the sides of the carapax. Probably these parts assume their usual position immediately after hatching, and the young then resemble in all essential particulars the mature animal.

Occurrence and Distribution. — Of this beautiful Caridian, 4 living specimens, in a perfect state, were brought up in the trawl, on the last cruise of the Expedition, at Station 295, from the very considerable depth of 1110 fathoms. This is the only locality in which the species was met with on the Norwegian North-Atlantic Expedition. Subsequently, however, after the final return of the Expedition, Mr. R. Collett found the remains of 2 specimens of the same species in the ventricle of the remarkable deep-sea fish, *Rhodichthys regina*, Coll., described by that naturalist; the fish was obtained at Station 297, lying somewhat farther west, and from a still greater depth, viz. 1280 fathoms.

Both of the said Stations lay in the open sea, between Jan Mayen and Finmarken, a locality belonging to the cold area, from which we may with certainty infer, that the present species is a true Northern and Arctic form; moreover, the enormous depth at which the animal occurred shows it to be a still more decided deep-sea form than any other species of the genus.

5. Bythocaris Payeri, (Heller).

(Pl. III, Fig. 27).

Syn: *Hippolyte Payeri,* Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Österreich.-Ungar. Nordpol-Expedition. pag. 2, Pl. 1, Fig. 1—4.

Artscharacteristik. Rygskjoldets Kjol uden tydelig Tand. Pandedelen lidet fremspringende, med den midterste Tand (Pandehornet) kun ubetydeligt længere end Sidetænderne og ikke overragende Oinene. Disse sidste større end hos foregaaende Art, kolleformige, med morkt Pigment. 1ste Par Følores indre Svøbe kun hoist ubetydeligt længere end den ydre. 2det Par Følores Blad aflangt rhomboidalt, mere end dobbelt saa langs som bredt, med Enden skjævt afskaaret og forsynet med tydelige skjøndt korte Randborster;

5. Bythocaris Payeri, (Heller).

(Pl. III, fig. 27).

Syn. *Hippolyte Payeri,* Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Österreich.-Ungar. Nordpol-Expedition. pag. 2, Pl. 1, figs. 1—4.

Specific Character. — Keel of carapax without any distinctly developed tooth. Frontal area but slightly projecting, with the medial tooth (rostrum) scarcely at all longer than the lateral teeth, and not jutting over the eyes, which are larger than in the preceding species, claviform, and coloured with a dark pigment. Inner flagellum of 1st pair of antennæ but very little longer than outer. Scale of 2nd pair of antennæ oblongo-rhomboidal, more than twice as long as broad, with the ex-

det tandformige Fremspring i det ydre Hjørne tydeligt fremragende. Det midterste Halevedhæng i Spidsen lige afskaaret, ikke udrandet i Midten, og bevæbnet med 6 smaa Torner. Legemet af hvidagtig Farve, kun i den forreste og bagerste Del forsynet med rødligt Pigment. Længden ikke overskridende 65^{mm}.

Findesteder: Stat. 35, 124, 137, 164, 192, 251, 286, 312, 359, 362.

Bemærkninger. Skjøndt særdeles nærstaaende foregaaende Art er den her omhandlede Form dog let kjendelig fra samme ved sin betydelig ringere Størrelse, Legemets forskjellige Farvetegning, de forholdsvis betydelig større og mørkt pigmenterede Øine, de korte Svøber paa 1ste Par Følere samt ved Antennebladenes temmelig afvigende Form.

Beskrivelse. Kropformen er temmelig slank og zirlig, forøvrigt særdeles lig samme hos foregaaende Art.

Rygskjoldet (se Fig. 27) har fortil en meget svagt udpræget dorsal Kjøl, der som oftest ganske mangler det tandformige Fremspring, som findes her hos foregaaende Art. Kun hos et Par Exemplarer har jeg fundet en svag Antydning til samme. Pandedelen er betydelig kortere end hos foregaaende Art og rækker kun omtrent til Midten af Øinene, naar disse strækkes fortil. Den er som hos hin Art tretandet i Enden; men den midterste Tand eller det egentlige Pandehorn er her meget kortere og mindre spidst udtrukket.

Bagkroppens 3die Segment er som hos foregaaende Art oventil noget puklet, med den bagre Rand dannende en triangulær Fortsats, der bøier sig ud over det følgende Segment; men denne Fortsats er her kjendeligt kortere. 2det Segments Epimerer er hos den ægbærende Hun særdeles brede og har det forreste Hjørne noget spidst udtrukket.

Øinene (se Fig. 27) er forholdsvis betydelig stærkere udvikede end hos foregaaende Art og næsten af pæredannet Form, med Øiepigmentet af den sædvanlige mørke Farve.

1ste Par Følleres Skaft forholder sig omtrent som hos *B. leucopis;* derimod er den indre Svøbe her meget kortere og kun høist ubetydeligt længere end den ydre samt meget tynd, børsteformig (se Fig. 27).

2det Par Føleres Blad *(ibid.)* er ogsaa her meget stort, næsten af hele Rygskjoldets Længde, men viser en temmelig afvigende Form. Det er nemlig aflangt-ovalt eller næsten rhomboidalt, med den største Brede betydelig mindre end den halve Længde og Enden meget skraat afskaaret i Retningen indenfra udad samt noget buet og besat med tydeligt udviklede, skjøndt korte Randbørster. Den fra det ydre Hjørne udgaaende tandformige Fortsats er temmelig stor og frit fremragende. Svøben er forholdsvis kortere end hos *B. leucopis.*

Munddelenes og Foddernes Bygning stemmer i alt væsentlig saa nøie overens med samme hos foregaaende Art.

tremity obliquely truncate, and armed with distinct, though short, marginal bristles; dentiform projection at the outer corner jutting distinctly forward. Telson truncate at the extremity, not emarginate, and armed with 6 small spines. Colour of body whitish, anterior and posterior parts faintly tinged with reddish pigment. Length not exceeding 65^{mm}.

Locality. — Stats. 35, 124, 137, 164, 192, 251, 286, 312, 359, 362.

Remarks. — Though very closely approximating the preceding form, the species here treated of may be easily distinguished by its considerably smaller size, the different colouring of the body, the much larger and darkly pigmented eyes, the short flagella on the 1st pair of antennæ, as also the somewhat deviating form of the antennal scales.

Description. — Form of body rather slender, and graceful; for the rest, closely resembling that in the preceding species.

The carapax (see fig. 27) is furnished anteriorly with a dorsal carina, very slightly developed, and as a rule exhibiting no trace whatever of the dentiform projection observed here in the preceding species. In one or two specimens only, have I detected a faint indication of this character. The frontal area is considerably shorter than in the preceding species, and reaches to only about the middle of the eyes when the latter are anteriorly extended. As in that form, it is tridentate at the extremity; but the medial tooth, or, strictly, the rostrum, is much shorter, and less acute.

The 3rd segment of the posterior division of the body is, as in the preceding species, somewhat hunched above, with the posterior margin forming a triangular prolation, that arches over the succeeding segment; but this prolation is here perceptibly shorter. The epimera of the 2nd segment in ovigerous females are exceedingly broad, and have the foremost corner somewhat sharply produced.

The eyes (see fig. 27) are comparatively more developed than in the preceding species, and almost pyriform in shape, with the ocular pigment of the usual dark colour.

The peduncle of the 1st pair of antennæ about as in *B. leucopis;* the inner flagellum, however, is much shorter, and but very little longer than the outer, as also extremely slender, and setiform (see fig. 27).

The scale of the 2nd pair of antennæ *(ibid.)* is here, too, very large, well-nigh equalling the whole of the carapax in length, but with a somewhat deviating form. It is oblongo-oval, or almost rhomboidal, with the greatest breadth considerably less than half the length, and has the extremity very obliquely truncate, and somewhat arched, as also beset with distinctly developed, though short, marginal bristles. The denticle extending from the outer corner is rather large, and projects freely. The flagellum is relatively shorter than in *B. leucopis.*

The structure of the oral appendages and of the legs agrees so closely in all essential particulars with that ex-

at en detailleret Beskrivelse af samme bliver ganske overflodig.

Det samme gjælder ogsaa Bagkroppens Svommevedhæng og de ydre Halevedhæng.

Det midterste Halevedhæng viser ligeledes en meget lignende Form, men skiller sig ved nøiere Undersøgelse derved, at Spidsen ikke viser nogen Udrandning i Midten, hvorimod den her er noget udbuet og til hver Side bevæbnet med 3 meget smaa, men dog noget ulige udviklede Torner.

Farven er i levende Tilstand hvidagtig, med den forreste Del af Rygskjoldet og Spidsen af Bagkroppen svagt rødligt pigmenteret. Munddelene og Basis af Fødderne er noget mere intenst rødfarvede.

Længden af det største erholdte Exemplar er 65^{mm}; men ialmindelighed er Størrelsen af fuldt udviklede Individer betydelig mindre.

Udvikling. Ogsaa hos denne Art er de under Hunnens Bagkrop fæstede Æg af paafaldende Størrelse og derfor faa i Antal. Ved Dissection af samme har jeg kunnet overbevise mig om, at ogsaa her Ungen forlader Ægget i fuldt udviklet Tilstand, uden at gjennemgaa nogen postembryonal Metamorphose.

Forekomst og Udbredning. Arten er først opdaget under den Østerrigsk-Ungarnske Nordpolexpedition i Havet omkring Frantz Josephs Land og er beskrevet og afbildet af Heller i ovenanførte Skrift som en Art af Slægten Hippolyte.

Under vor Expedition har vi taget den paa ikke mindre end 10 forskjellige Stationer, hvoraf de allerfleste tilhører den kolde Area, og fra et Dyb af 350—1100 Favne.

Dens for Tiden bekjendte geographiske Udbredning strækker sig herefter fra den 63de til den 82de Bredegrad og fra circa 2° V. L. til 70° Ø. L. og rimeligvis endnu videre mod Øst.

At den ligesom foregaaende Art maa ansees som en ægte arktisk Form, fremgaar tilstrækkeligt af de ovenfor givne Data.

hibited by the said parts in the preceding species, that a detailed description may be held as wholly superfluous.

The same remark applies, too, to the pleopoda, as also to the outer caudal appendages.

The telson likewise exhibits a very similar form, but differs, on closer examination, by reason of the point having no emargination in the middle; here, however, it is slightly curved, and on either side armed with 3 exceedingly small, but somewhat unequally developed spines.

Colour, in a living state, whitish, the anterior part of the carapax and the point of the abdomen being however faintly tinged with reddish pigment. The oral appendages and the base of the legs are somewhat more intensely red-coloured.

Length of the largest specimen obtained 65^{mm}; but as a rule the size of full-grown individuals is considerably less.

Development. — In this species, too, the ova attached beneath the abdomen of the female are remarkably large, and therefore but few in number. By dissection, I have convinced myself that the young of this animal also leave the egg in a fully developed state, and accordingly do not pass through any postembryonal metamorphosis.

Occurrence and Distribution. — The species was first discovered on the Austrio-Hungarian North Pole Expedition, in the open sea, a short distance off Frantz Joseph's Land, and has since been described and figured by Heller in the aforecited work, as a species of the genus Hippolyte.

On our Expedition, we obtained the species at not less than 10 different Stations, by far the greater part of which belong to the cold area, and from a depth of 350—1100 fathoms.

Hence, the geographical distribution of the species, as known up to the present time, ranges from the 63rd to the 82nd parallel of latitude, and from about long. 2° W. to long. 70° E., nay probably still farther east.

That the animal must, in common with the foregoing species, be regarded as a true Arctic form, is manifest from the data given above.

Fam. **Ephyridæ.**

Gen. **Hymenodora.** G. O. Sars. 1877.

Prodromus descriptionis Crust. etc.

Slægtscharacteristik. Legemet næsten trindt, ikke sammentrykt fra Siderne. Integumenterne overordentlig tynde og bøielige, næsten membranose. Rygskjoldet fortil i Midten kjølet og forsynet med et sammentrykt Pandehorn.

Fam. **Ephyridæ.**

Gen. **Hymenodora.** G. O. Sars. 1877.

Prodromus descriptionis Crust. etc.

Generic Character. — Body almost round, not compressed from the sides. Integuments exceedingly thin and flexibile, almost membranaceous. Carapax keeled in the middle anteriorly, and furnished with a compressed rostrum.

Bagkroppen stærkt afsmalnende, oventil jevnt hvælvet. Øinene smaa og ufuldkomment udviklede. 1ste Par Folere fæstede ovenover 2det Par, med kort og tykt Skaft og 2 stærkt forlængede Svøber; 2det Par forsynet med et vel udviklet Blad og en overordentlig lang, traadformig Svøbe. Kindbakkerne kraftigt udviklede med den indre Ende pladeformigt udvidet og i Kanten fint saugtakket; en liden, men tydelig 3-leddet Palpe tilstede. Kjæverne og de første Par Kjævefødder af en lignende Bygning som hos de typiske Carider. 3die Par Kjævefødder stærkt forlængede, forsynede ved Basis med en vel udviklet Exognath og en supplementær Gjelle; det yderste Led sylformigt tilspidset, uden Torner. Alle Fødder forsynede med vel udviklede Svømmegrene, de 2 forreste Par kortere end de øvrige, med smaa Saxe, de 2 følgende Par tynde og spinkle med stærkt forlænget Endeklo, sidste Par noget uligt de 2 foregaaende, med særdeles kort og rudimentær Endeklo. Gjellerne paa hver Side, iberegnet den supplementære Gjelle paa 3die Par Kjævefødder, 10, ordnede i en dobbelt Rad. Bagkroppens Svømmevedhæng kraftigt udviklede med lancetformige Endeplader. Det midterste Halevedhæng stærkt forlænget, med den ydre Del smalt udtrukken og Spidsen bevæbnet med divergerende Torner. De ydre Halevedhæng kortere end det midterste, med den ydre Plade længst, af aflang Form og uden nogen Tværsutur ved Enden.

Almindelige Bemærkninger. Den Form, hvorpaa denne nye Slægt er grundet, viser vistnok i visse Henseender nogen Overensstemmelse med Slægten *Pasiphaë* Savigny, hvortil den af Buchholz er henført, men frembyder dog paa den anden Side saa mange characteristiske Eiendommeligheder, at jeg finder det absolut nødvendigt at betragte den som Typen for en distinct Slægt, der neppe engang vil kunne forenes med Pasiphaë under en Familie.

Med Slægten Pasiphaë stemmer den væsentlig kun overens derved, at de 2 forreste Fodpar er forsynede med Saxe og at alle Fodpar har en Svømmegren (Exopodit); men denne Svømmegren er her langt kraftigere udviklet end hos hin Slægt, hvor den har mere Udseende af et rudimentært Appendix. Ligeledes er de 2 forreste Fodpar betydelig mindre, medens de 3 følgende, der hos Pasiphaë er smaa og svage, her er vel udviklede. Fra Slægten Pasiphaë skiller den sig endvidnre ved den mere undersætsige, næsten trinde Kropsform, de ualmindelig tynde, membranøse Integumenter, Øinenes rudimentære Beskaffenhed, Munddelenes meget uligе Bygning samt Halevedhængenes eiendommelige Form.

Efter min Mening slutter den her omhandlede Form sig nærmere til den af Roux opstillede og ialmindelighed til Peneiderne henførte middelhavske Slægt *Ephyra*, hos hvem de 2 forreste Fodpar ligesom hos nærværende Form er kortere end de følgende og forsynede med smaa Saxe. Men ogsaa de 2 herhen hørende Arter synes i visse Henseender at skille sig saameget, at det heller ikke vel lader sig gjøre at henføre vor Form til denne Slægt.

Posterior division of body rapidly tapering; above, uniformly arched. First pair of antennæ attached above second pair, with a short and thick peduncle and 2 very considerably produced flagella; second pair furnished with a well-developed scale and a remarkably long, filiform flagellum. Mandibles powerfully developed, with the inner extremity lamelliform dilated, and, along the margin, delicately serrate; a small, but distinctly three-jointed palp present. Maxillæ and first pairs of maxillipeds exhibiting a similar structure to that characterizing those parts in the typical Caridians. Third pair of maxillipeds greatly produced, furnished at the base with a well-developed exognath and a supplementary branchia; outer joint awl-shaped, and without spines. All of the legs provided with well-developed natatory branches, the 2 foremost pairs shorter than the rest, with small chelæ, the 2 succeeding pairs thin and slender, with a greatly produced terminal claw, last pair somewhat unlike the 2 preceding pairs, with an exceedingly short and rudimentary terminal claw. Number of branchiæ on either side, including the supplementary branchia on 3rd pair of maxillipeds, 10, arranged in a double series. Pleopoda powerfully developed, with lanceolate terminal plates. Telson greatly prolonged, with the exterior portion drawn slenderly out, and the point armed with diverging spines. Outer caudal appendages shorter than telson, with the exterior plate longest, of oblong form, and without any transverse suture at the extremity.

General Remarks. — The form on which this new genus is based, does indeed, in certain respects, exhibit some agreement with the genus *Pasiphaë* Savigny, to which Buchholz has referred it, but, on the other hand, has so many characteristic peculiarities, that, in my judgment, it is absolutely necessary to regard the animal as the type of a distinct genus, hardly even to be united with Pasiphaë under one family.

With the genus Pasiphaë, its chief agreement consists simply in the 2 foremost pairs of feet being furnished with chelæ, and in all of the pairs having a natatory branch (exopodite); but this branch is far more powerfully developed than in the former genus, where it has merely the appearance of a rudimentary appendix. Moreover, the 2 foremost pairs of legs are considerably smaller, whereas the 3 succeeding pairs, which in Pasiphaë are small and feeble, exhibit a powerful development. From the genus Pasiphaë, it also differs by reason of its comparatively more thickset, almost rounded, form of body, the unusually thin, membranaceous integuments, the rudimentary character of the eyes, the very different structure of the oral parts, and the peculiar form of the caudal appendages.

In my judgment, the form in question approximates more closely the Mediterranean genus *Ephyra*, established by Roux, and generally referred to the Peneidæ, in which the 2 foremost pairs of legs, as in the present form, are shorter than the succeeding, and furnished with small chelæ. But the 2 species belonging to this genus would in certain respects also appear to differ so much, that the form here treated of cannot be safely classed with them in the same genus.

For Tiden maa vi saaledes betragte den nedenfor nærmere beskrevne Art som en temmelig isoleret staaende Form, der kun har en fjern Affinitet til Sl. Pasiphaë, men som maaske sammen med de 2 ovennævnte, endnu kun ufuldstændigt kjendte middelhavske Former tor danne en egen anomal Gruppe af Carider, i enkelte Punkter visende en Slags Overgang til Schizopoderne.

At present, therefore, we must regard the species described below as a rather isolated form, exhibiting but slight affinity to the genus Pasiphaë, and which perhaps, more properly, may constitute, together with the above-mentioned, still imperfectly known Mediterranean forms, a peculiar group of Caridians, marking in some respects a kind of transition to the Schizopod type.

6. Hymenodora glacialis, (Buchholz).

Pl. IV).

Syn: *Pasiphaë glacialis,* Buchholz, Die zweite Deutsche Polarfahrt. Zool. pg. 279, Pl. 1, Fig. 2.
Hymenodora glacialis, G. O. Sars, Prodromus descriptionis Crustaceorum et Pycnogonidarum etc. No. 24.

Artscharacteristik. Rygskjoldet jevnt hvælvet, med den dorsale Kjol i den forreste Del bevæbnet med 4—6 smaa Tænder. Pandehornet særdeles kort, med Enden tilspidset og den nedre Kant ubevæbnet. Øinene næsten koniske, med Spidsen tilrundet og forsynet med opakt hvidt Pigment. 1ste Par Foleres Skaft kort cylindriskt, med Basalleddet storst; den ydre Svøbe længere og stærkere end den indre. 2det Par Foleres Blad $^1/_3$ længere end 1ste Par's Skaft, bredest paa Midten, med den ydre Kant glat og fortil endende med et tandformigt Fremspring; Svøben mere end dobbelt saa lang som hele Legemet. De 2 forreste Fodpar baade i Størrelse og Bygning ens, med Saxene lidet fortykkede og Fingrene kortere end Palmen. Sidste Led paa de 2 følgende Par forlænget og afsmalnende, paa sidste Par lineært og tæt haaret. Det midterste Halevedhæng i Spidsen noget udvidet og her bevæbnet med 7 Torner, hvoraf de 5 midterste er af ens Længde, hvorimod de 2 ydre er over 3 Gange saa lange og stærkt divergerende. Farven intensiv blodrod. Længden indtil 83^{mm}.

Findesteder. Stat. 33, 34, 35, 40, 52, 54, 137, 183, 205, 295, 297, 303, 343, 362.

Bemærkninger. Nærværende interessante og eiendommelige Krebs er først opdaget under den 2den tydske Nordpolexpedition, men kun i et enkelt Exemplar, som af Buchholz paa ovenanførte Sted er kjendeligt beskrevet og afbildet. Da Exemplaret maatte saavidt muligt skaanes for at kunne tjene som Type-Specimen, har Buchholz selvfølgeligt ikke kunnet anstille nogen dybere gaaende anatomisk Undersøgelse af samme og derfor heller ikke kunnet skaffe sig noget Kjendskab til Munddelenes Bygning, hvori den generiske Forskjel fra Pasiphaë er skarpest og tydeligst udtrykt.

Beskrivelse. Legemets Form er (se Fig. 1 og 2), ulig samme hos Pasiphaë, temmelig plump og næsten trind,

6. Hymenodora glacialis, (Buchholz).

(Pl. IV).

Syn. *Pasiphaë glacialis,* Buchholz, Die zweite Deutsche Polarfahrt. Zool. pag. 279, Pl. 1, fig. 2.
Hymenodora glacialis, G. O. Sars, Prodromus descriptionis Crustaceorum et Pycnogonidarum etc., No. 24.

Specific Character. — Carapax uniformly arcuate, with the dorsal carina, along the anterior part, bearing from 4 to 6 small teeth. Rostrum exceedingly short, with the extremity pointed and the lower margin unarmed. Eyes almost conical, with the point rounded off, and furnished with an opaque white pigment. Peduncle of 1st pair of antennæ short, cylindric, with the basal joint largest; outer flagellum longer and more powerful than inner; scale of 2nd pair of antennæ one-third longer than peduncle of 1st pair, broadest in the middle, with the outer margin smooth, and terminating anteriorly in a dentiform projection: flagellum more than twice the length of the whole body. The 2 foremost pairs of legs precisely similar, alike in size and structure, with the chelæ but slightly incrassated and the dactyli shorter than the palm. Terminal joint on the 2 succeeding pairs elongate and tapering, on the last pair linear, and densely clothed with hair. Telson somewhat dilated at the point, which is armed with 7 spines, the 5 median of one length, but the 2 outer ones more than 3 times as long, and strongly diverging. Colour a deep blood-red. Length reaching 83^{mm}.

Locality. — Stats. 33, 34, 35, 40, 52, 54, 137, 183, 205, 295, 297, 303, 343, 362.

Remarks. — This interesting and very peculiar form was first met with on the Second German North Pole Expedition, one specimen only having however been secured, which, in the aforecited work, Buchholz has recognizably described and figured. The said example having had to be handled with the greatest possible care, to admit of reserving it as a type-specimen, Buchholz could not of course undertake a comprehensive anatomical examination: and hence he failed to learn aught concerning the structure of the oral appendages, in which the generic difference between this form and Pasiphaë is most salient and conspicuous.

Description. — Form of body, contrary to what is observed in Pasiphaë (see figs. 1, 2), rather clumsy and

ikke som hos hin Slægt sammentrykt fra Siderne. Forkroppen indtager omtrent $^1/_3$ af Totallængden, og Bagkroppen afsmalnes hurtigt og jevnt bagtil.

Alle Integumenter er i en ganske paafaldende Grad tynde og boielige, næsten ganske membranøse, hvorfor Dyret vanskeligt bibeholder sin Form uforandret, med mindre det behandles med den største Varsomhed.

Rygskjoldet er forholdsvis af betydelig Størrelse og dækker Forkroppen fuldstændigt. Det er jevnt hvælvet, med Høide og Brede omtrent ens og Længden omtrent dobbelt saa stor. Ved svagt markerede Linier antydes forskjellige Regioner paa samme. Af disse er den i den forreste Del beliggende Maveregion tydeligst og noget hævet samt ved en skarpt udpræget Linie til hver Side adskilt fra 2 mindre Sidefelter, Leverregionerne. Langs ad Midten er den forsynet med en tydelig Kjøl, der i sin forreste Del er bevæbnet med 4—6 smaa, fremadrettede Tænder. Fortil løber denne Kjøl ud i et meget kort, sammentrykt og i Enden spidst udtrukket Pandehorn, hvis nedre, noget buede Kant er ganske glat.

De forreste Kanter af Rygskjoldet viser under Pandehornet et lidet Indsnit for Øinene, hvilket begrændses nedentil og udad af en triangulær Flig (Infraorbitaltornen). Nedenfor denne igjen bemærkes 2 meget smaa tandformige Fremspring, hvoraf det ene ligger til Siderne af 2det Par Foleres Roddel (Antennaltornen), medens det andet indtager det nedre Hjørne af Rygskjoldet (Pterygostomialtornen). De nedre Kanter af Rygskjoldet er jevnt buede og den bagre Rand oventil i Midten kun meget svagt udrandet.

Bagkroppen er (se Fig. 2) oventil jevnt hvælvet, uden Spor af nogen Kjøl og uden at noget af Segmenterne kan siges at være pukkelformigt fremspringende. Dens 5 forreste Segmenter er forsynede med tynde tilrundede Epimerer, der viser et lignende Forhold som hos de egentlige Carider, idet 1ste Par skyver sig noget udover Rygskjoldets Sidefløier, medens 2det Par delvis dækker saavel det foregaaende som efterfølgende Par. De 3 første Par Epimerer er hos Hunnerne som sædvanlig betydelig større og bredere end hos Hannerne. Sidste Segment er meget smalt og omtrent saa langt som de 2 foregaaende tilsammen.

Øinene (Fig. 3) er forholdsvis smaa og ufuldkommet udviklede. De er meget smale og næsten af konisk Form, idet de, uligt hvad tilfældet pleier at være hos andre Macrurer, har sin største Tykkelse ved Basis, hvorfra de afsmalnes jevnt og hurtigt mod Enden. Paa denne bemærkes den meget lille, tilrundede egentlige Øieglob, der er forsynet med ganske lyst, opakt hvidt Pigment. Selve Synselementerne synes at være ganske rudimentære, og den Øiengloben udvendigt beklædende Hud viser kun en svagt udpræget, uregelmæssig netformig Structur som en Antydning til Facettering (Fig. 4). Ved Grændsen mellem den egentlige Øieglob og Øiestilken findes fortil et lidet knudeformigt Fremspring.

almost round, not compressed from the sides as in that genus. The anterior division of the body measuring about one-third of the total length, and the posterior division tapering rapidly and uniformly backward.

All the integuments are remarkably thin and flexible, nay almost membranaceous; and hence the animal will rarely retain its form unchanged unless handled with the greatest care.

The carapax is comparatively large, covering the whole of the anterior division of the body. It is uniformly arched, with the height and breadth about equal, and the length well-nigh twice as great. Faintly marked lines indicate divers regions on the surface. That occupying the anterior part, viz. the gastric region, is most distinctly marked, and somewhat prominent, as also cut off by a sharply defined line from 2 smaller lateral areas — the hepatic regions. Along the middle, it is furnished with a distinct keel, which, on its anterior part, has from 4 to 6 small, anteriorly directed teeth. In front, this keel protends as an exceedingly short, compressed, and, at the extremity, acutely produced rostrum, of which the lower, somewhat arched, margin is perfectly smooth.

The anterior margins of the carapax exhibit under the rostrum a small incision for the eyes, bounded without and below by a triangular lobule (infraorbital spine). Beneath this lobule, are observed 2 exceedingly small dentiform projections, one placed at the side of the basal portion of the 2nd pair of antennæ (antennal spine), the other occupying the lower corner of the carapax (pterygostomial spine). The inferior margins of the carapax are uniformly arcuate, and the posterior margin, above, in the middle, is but very slightly emarginate.

The posterior division of the body (see fig. 2) uniformly arched above, without the slightest trace of a keel, and without any one of the segments, in a strict sense, being hunched and projecting. The 5 anterior segments are furnished with thin, rounded epimera, exhibiting a similar relation to that in the true Caridians, the 1st pair projecting somewhat over the lateral wings of the carapax, while the 2nd pair partially overlap alike the preceding and the succeeding pairs. The 3 first pairs of epimera are as usual considerably larger and broader in the females than in the males. The terminal segment is exceedingly narrow, and in length about equal to the 2 preceding ones taken together.

The eyes (fig. 3) are comparatively small, and imperfectly developed. They are exceedingly narrow, and almost conical in shape, having, contrary to what is generally the case in other Macrurans, their greatest thickness at the base, whence they taper gradually and rapidly toward the extremity. Here is observed the exceedingly small, rounded ocular sphere, furnished with a very light, opaque, whitish pigment. Even the elements of vision would appear to be quite rudimentary, and the skin investing the ocular sphere exhibits but a faintly defined, irregular, reticulate (fig. 4), instead of the regular areolate, structure generally observed. On the boundary-line between the cornea and the stalk of the eye, occurs anteriorly a small tuberculiform projection.

1ste Par Foleres Skaft (Fig. 5—6) er kort og tykt, af næsten cylindrisk Form og neppe opnaaende $^1/_4$ af Rygskjoldets Længde. Dets 1ste Led er størst, af noget uregelmæssig Form og paa den ydre Side forsynet med et ganske kort tornformigt Fremspring, hvorfra en Rad af bøiede Fjærborster strækker sig bagtil. De 2 følgende Led er betydelig kortere og smalere end 1ste og omtrent indbyrdes af samme Storrelse: det sidste meget skraat afskaaret i Retningen indenfra udad. De 2 Svøber er stærkt udviklede, den indre ganske tynd og af Legemets halve Længde, den ydre betydelig længere, næsen af hele Legemets Længde og ved Basis stærkt opsvulmet samt her tæt besat med de sædvanlige baandformige Sandseborster.

2det Par Folere er ikke som hos de i det foregaaende omtalte Former fæstede i samme horizontale Plan med 1ste Par, men betydelig lavere, hvorfor begge Par træder tydeligt frem, naar Dyret sees i Profil (se Fig. 2). Den korte og tykke, utydeligt segmenterede Roddel (se Fig. 7) gaar paa den ydre Side ud i en kun lidet fremspringende trekantet, i Randen borstebesat Fortsats og har paa den indre Side en smal indadrettet Torn *(spina olfactoria)*.

Det bladdannede Vedhæng (se Fig. 7) er vel udviklet, omtrent $^1/_3$ længere end 1ste Par Føleres Skaft og af aflang Form, med den største Brede, der omtrent er lig $^1/_3$ af Længden, paa Midten, den ydre Kant ganske lige, den indre stærkt udbuet. Enden er smalt afstumpet og ligesom hele den indre Kant besat med en tæt Rad af Fjærbørster. Ved Bladets ydre Hjørne staar et ganske kort tandformigt Fremspring.

Svøben er overordentligt udviklet, navnlig hos Hannen (se Fig. 1), hos hvem den opnaar mere end Legemets dobbelte Længde. Dens Skaft (se Fig. 7) er tykt og muskulost, bestaaende af 3 Led, hvoraf det sidste er størst.

Overlæben (Fig. 8) danner en noget hjelmformigt fremspringende kjødet Lap af uregelmæssig firkantet Form, paa hvilken kan adskilles en større hvælvet median Del og 2 smalere Sidefløier.

Underlæben (Fig. 9) er dybt tvekloftet, med Sidelapperne udvidede mod Enden, som er tvært afkuttet og i det ydre Hjørne spidst udtrukken. Langs den indre Kant er disse Lapper fint cilierede; derimod er den ydre og forreste Rand ganske glat.

Kindbakkerne (Fig. 10) er kraftigt udviklede og har den indad mod Munden vendte Del, ligesom hos Pasiphaë, stærkt pladeformigt udvidet, med Tyggeranden tilskjærpet og delt i et stort Antal smaa spidse Tagger. Bagtil viser denne Del et noget fortykket og med jevnere og tættere Smaatænder bevæbnet Parti, der svarer til Tyggeknuden hos andre Macrurer. Hoire og venstre Kindbakke skiller sig forovrigt ved nærmere Eftersyn noget i Henseende til Tyggerandens Beskaffenhed. Paa venstre Side er den nemlig tydelig vinklet, medens den paa hoire er mere jevnt

The peduncle of the 1st pair of antennæ (figs. 5, 6) is short and thick, almost cylindric in form, attaining scarcely one-fourth of the length of the carapax. Its 1st joint is largest, somewhat irregular in form, and furnished on the outer side with an exceedingly short, spiniform projection, from which a series of curved, plumose bristles extend posteriorly. The 2 succeeding joints are considerably shorter and narrower than the 1st, and about equal in size; the last is very obliquely truncate, from within to without. The 2 flagella are strongly developed: the inner quite slender and half the length of the body, the outer considerably longer, almost equalling the whole body in length, and at the base exceedingly tumid, as also densely beset with the usual riband-shaped sensory bristles.

The 2nd pair of antennæ are not, as in the forms previously treated of, attached in the same horizontal plane with the 1st pair, but are placed considerably lower down; and hence both pairs can be distinctly seen when the animal is viewed in profile (see fig. 2). The short and thick, indistinctly segmented basal portion (see fig. 7) extends, on the outer side, as a slightly projecting, triangular prolation, beset with bristles along the margin, and has on the inner side a slender, inward-directed spine *(spina olfactoria)*.

The squamiform appendage (see fig. 7) is well developed, about one-third longer than the peduncle of the 1st pair of antennæ, and oblong in form, having its greatest breadth, which about equals one-third of the length, in the middle; the outer margin quite straight, the inner very considerably arched. The extremity is slender-obtuse, and, like the whole of the inner margin, beset with a closely arranged series of plumose bristles. In the outer corner of the scale occurs an exceedingly short, dentiform projection.

The flagellum is remarkably developed, more particularly in the males (see fig. 1), attaining upwards of twice the length of the body. Its peduncle (see fig. 7) is thick and muscular, composed of 3 articulations, the last being the largest.

The labrum (fig. 8) forms a somewhat galeate-projecting, fleshy lobule, of an irregular, quadrate form, on which can be distinguished a larger, arcuate median portion and 2 narrower lateral wings.

The labium (fig. 9) is deeply cleft, with the lateral lobules dilated toward the extremity, which is abruptly truncate, and in the outer corner produced to a point. Along the inner margin, these lobules are finely ciliated, whereas the outer and anterior margin is perfectly smooth.

The mandibles (fig. 10) are powerfully developed, and have, as in Pasiphaë, the part turning in toward the mouth lamelliform dilated, with the cutting edge sharpened, and divided into a great number of small acute teeth. Posteriorly, this part exhibits a somewhat inspissated region, armed with smaller and more closely arranged denticles, corresponding to the molar protuberance in other Macrurans. The right and left mandibles differ somewhat, on closer examination, as regards the character of the cutting edge. On the left side, the latter is perceptibly angular, while on the

buet, og Tyggeknuden paa venstre Kindbakke viser sig ogsaa mere tvært afkuttet end paa hoire.

Ved Tilstedeværelsen af en tydeligt udviklet, skjondt ganske kort Palpe skiller Kindbakkerne hos nærværende Form sig meget væsentligt fra samme hos Pasiphaë, der som bekjendt ganske mangler en saadan. Denne Palpe (Fig. 11) bestaar af 3 tydeligt begrændsede Led, hvoraf det 2det er storst, det sidste ganske lidet, af oval Form og besat med talrige divergerende Borster.

1ste Par Kjæver (Fig. 12) har alle 3 Grene tydeligt udviklede. Den midterste er som sædvanlig den kraftigste, sammentrykt fra Siderne og langs den skraat afskaarne mod Munden vendte Kant bevæbnet med et stort Antal af korte Torner. Den indre Gren er ligeledes pladeformig og temmelig bred samt langs den indre Kant temmelig rigeligt borstebesat. Den ydre Gren er lancetformigt tilspidset og fortilrettet, uden tydelige Borster.

2det Par Kjæver (Fig. 13) har, uligt hvad Tilfældet er hos Pasiphaë, den egentlige Kjævedel (Endognath) vel udviklet og delt i 3 borstebesatte Tyggelapper. Mesognathen er smalt lancetformig og i Spidsen forsynet med nogle lange og tynde Borster. Exognathen danner en gjennemsigtig, membranos, rundt Kanterne med stærke Fjærborster besat aflang Plade, hvis bageste smalere Parti er noget indkrummet.

1ste Par Kjævefødder (Fig. 14) viser et fra samme hos Pasiphaë meget forskjelligt Udseende og ligner mere samme hos de typiske Carider. Endognathen er delt i 2 pladeformige Tyggelapper, hvoraf den forreste er meget bred og langs den indre Kant tæt besat med fine Haarborster. Mesognathen har en lignende smal og simpel Form som paa 2det Par Kjæver. Exognathen danner en fortilrettet aflang Plade, der langs sin ydre Rand er besat med stærke Fjærborster. Den ender stumpt tilrundet uden Spor af den sædvanlige Endesnært. Epignathen er af forholdsvis ringe Storrelse og danner en liden ved en tynd Stilk til Ydersiden af Roddelen fæstet Plade af gjellelignende Structur.

2det Par Kjævefødder (Fig. 15) er ligeledes udviklede paa den for de typiske Carider sædvanlige Maade og meget ulige samme hos Pasiphaë. De bestaar nemlig, foruden af den i 7 tydelige Segmenter afdelte Stamme, af en vel udviklet Exognath og Epignath. Fra Stammens Rodled udgaar indad en borstebesat Lap, der forestiller den egentlige Endognath, medens Resten af Stammen nærmest svarer til Mesognathen paa foregaaende Par. Næstsidste Led er pladeformigt udvidet, næsten øxeformigt, og danner med det foregaaende meget lille Led en knæformig Boining. Langs den ydre, bueformigt bøiede Rand er det besat med talrige Borster og Torner. Sidste Led, der ved en lige Sutur er skilt fra hint, er betydelig mindre, ovalt, og langs sin indadvendte Kant bevæbnet med en Rad af spidse Torner. Exognathen, som er fæstet til Ydersiden af Stammens 2det

right it is more uniformly arched, and the molar protuberance on the left mandible appears, too, more abruptly truncate than on the right.

The presence of a distinctly developed, though exceedingly short, palp, essentially distinguishes the mandibles in the present form from those in Pasiphaë, which, as we know, has not this character. The said palp (fig. 11) consists of 3 well-defined articulations, of which the 2nd is the largest, the last quite small, oval in form, and beset with numerous diverging bristles.

The 1st pair of maxillæ (fig. 12) have all three branches distinctly developed. The median branch is, as usual, the strongest, compressed from the sides, and armed along the margin, obliquely truncate and directed toward the mouth, with a large number of short spines. The inner branch is likewise lamelliform and rather broad, as also densely setiferous along the inner margin. The outer branch is lanceolate, and directed anteriorly, without distinct bristles.

The 2nd pair of maxillæ (fig. 13) have, contrary to what is the case in Pasiphaë, the true maxillary part (endognath) well developed, and divided into 3 bristle-beset masticatory lobules. The mesognath is slender-lanceolate, and furnished at the point with a few long and slender bristles. The exognath constitutes an oblong, translucent, membranous plate, beset round the margins with strong, plumose bristles, and having the posterior — narrower — portion somewhat incurved.

The 1st pair of maxillipeds (fig. 14) exhibit a widely different appearance from those in Pasiphaë, resembling rather the said parts in the typical Caridians. The endognath is divided into 2 lamelliform masticatory lobes, of which the anterior is exceedingly broad, and densely beset along the inner margin with delicate bristles. The mesognath has the same narrow and simple form as in the 2nd pair of maxillæ. The exognath constitutes an anteriorly directed oblong plate, beset along its outer margin with strong, plumose bristles. It ends obtusely rounded, without a trace of the usual terminal lash. The epignath is comparatively of inconsiderable size, and forms a small plate, of a spongious structure, attached by a slender stalk to the outer side of the basal part.

The 2nd pair of maxillipeds (fig. 15) are likewise developed in the manner common to the typical Caridians, and differ greatly from those in Pasiphaë. They consist, exclusive of the stem and its 7 distinct segments, of a well-developed exognath and epignath. From the basal joint of the stem, protends inward a bristle-beset lobule, representing the true endognath, while the rest of the stem corresponds rather to the mesognath on the preceding pair. The penultimate joint is lamelliform, nay almost securiform-dilated, and constitutes, together with the exceedingly small preceding joint, a geniculate curve. Along the outer, arcuate margin, it is beset with numerous bristles and spines. The terminal joint, which a straight suture separates from the penultimate, is considerably smaller, oval, and armed along the inward-directed margin with a series of sharp spines.

Led og retter sig lige fortil, er af en meget smal, lineær Form og i Enden utydeligt leddet og børstebesat; Epignathen er af samme Beskaffenhed som paa foregaaende Par, men af næsten cirkelrund Form. Bag denne udgaar fra Roddelens ydre Side en smal tungeformig Flig, som ogsaa forefindes paa det følgende Par samt paa samtlige Fødder.

3die Par Kjævefødder (Fig. 16) er stærkt forlængede, fodformige og rækker fortilstrakte omtrent til Spidsen af 2det Par Foleres Blad. Af Stammens 5 Led er det 3die størst og mindre skarpt adskilt fra det foregaaende, samt temmelig stærkt krummet. Sidste Led er ikke meget kortere, men stærkt afsmalnende mod Enden, der er udtrukken i en sylformig Spids. Det er ligesom de foregaaende Led besat med tætte Børsteknipper, som navnlig i den indre Kant er stærkt udviklede, hvorimod egentlige Torner mangler.

Til Ydersiden af Stammens 2det Led er fæstet en vel udviklet Exognath, paa hvilken kan adskilles en smalt cylindrisk Basaldel og en noget sammentrykt, mangeleddet og med lange Fjærborster besat Endedel. Den hele Exognaths Længde er lige udstrakt omtrent $^1/_3$ af Stammens Længde.

Endelig er til Ydersiden af Stammens Rodled fæstet en oval eller elliptisk Epignath, der i høi Grad udmærker sig derved, at den har antaget Beskaffenheden af en virkelig Gjelle, idet der fra dens ydre Flade har hævet sig 8—9 tydelige bladformige Tværfolder.

Samtlige Fødder har fæstet til Ydersiden af 2det Led en vel udviklet Svømmegren (Exopodit) ligesom hos Schizopoderne og svarende til den saakaldte Exognath paa Munddelene.

De to forreste Par er kortest og som hos Pasiphaë forsynede med Saxe; de 3 bageste Par er derimod simple i Enden.

1ste Fodpar (Fig. 17) er knapt saa langt som sidste Par Kjævefødder og af forholdsvis svag Bygning. Af Leddene er det 4de størst og længere end de 3 foregaaende tilsammen. 5te Led danner med dette i Regelen en stærk knæformig Boining og er knapt $^1/_3$ saa langt. 6te Led eller Haanden er kun lidet tykkere end det foregaaende Led og indtager omtrent $^1/_4$ af Fodens Længde. Fingrene er, sammenlignet med samme hos Pasiphaë, meget korte, neppe halvt saa lange som Palmen, temmelig tynde og i Spidsen svagt krummede (se ogsaa Fig. 18). Alle Led er mere eller mindre tæt børstebesatte, navnlig i den indre Kant; dog er Børsterne paa selve Haanden meget korte.

Svømmegrenen er stærkt udviklet og rækker lige fortilstrakt ud over 4de Led. Dens Bygning stemmer forøvrigt fuldkommen overens med Exognathen paa sidste Par Kjævefødder.

The exognath, attached to the outer side of the 2nd joint of the stem and protending straight forward, has an exceedingly slender, linear form, and at the end is indistinctly articulated, and beset with bristles; the epignath exhibits a structure similar to that in the preceding pair, but a well-nigh circular form. Posterior to the latter, proceed from the outer side of the basal part a narrow, linguiform lobule, which also occurs on the succeeding pair, and on all of the legs.

The 3rd pair of maxillipeds (fig. 16) are greatly produced, pediform, and reach, extended anteriorly, about to the point of the scale of the 2nd pair of antennæ. Of the 5 joints of the stem, the 3rd is the largest, and less distinctly separated from the preceding, as also a good deal curved. The terminal joint is not much shorter, tapers rapidly toward the extremity, which is drawn out to an awl-shaped point. Like the preceding joints, it is beset with dense fascicles of bristles, which, more particularly on the inner margin, are strongly developed; true spines, however, do not occur.

To the outer side of the 2nd joint of the stem is attached a well-developed exognath, on which can be distinguished a narrow, cylindric basal portion and a somewhat compressed, multiarticulate terminal part, beset with long, plumose bristles. The whole length of the exognath, when fully extended, equals about one-third of the length of the stem.

Finally, on the outer side of the basal joint of the stem is attached an oval or elliptic epignath, strikingly distinguished by having assumed the character of a true branchia, 8 or 9 distinct transverse folds rising from its outer surface.

All of the legs have a well-developed natatory branch (exopodite) attached to the outer side of the 2nd joint, as in the Schizopods, corresponding to the so-called exognath on the oral appendages.

The two anterior pairs are shortest, and, as in Pasiphaë, furnished with chelæ; the three posterior pairs are, on the other hand, simple at the extremity.

The 1st pair of legs (fig. 17) are scarcely as long as the last pair of maxillipeds, and comparatively feeble in structure. Of the joints, the 4th is the largest, and longer than the three preceding ones taken together. The 5th joint forms along with the 4th, as a rule, a strong, geniculate bend, and is hardly one-third as long as the latter. The 6th joint, or hand, is but little thicker than the preceding joint, and measures about one-fourth of the length of the leg. The fingers, as compared with those in Pasiphaë, are exceedingly short, scarcely half as long as the palm, somewhat slender, and at the point slightly curved (see, too, fig. 18). All of the joints are more or less densely beset with bristles, in particular along the inner margin; the bristles on the hand itself, however, are very short.

The natatory branch is powerfully developed, and reaches, anteriorly extended, beyond the 4th joint. For the rest, its structure perfectly agrees with that of the exognath on the last pair of maxillipeds.

Ved Basis af dette ligesom de 3 følgende Fodpar er fæstet 2 vel udviklede Gjeller, og foran dem danner Rodleddet et knudeformigt, med et Bundt af lange, bugtede Børster besat Fremspring.

2det Fodpar (Fig. 19) er af samme Størrelse og Bygning som 1ste Par og skiller sig kun ved et noget afvigende Længdeforhold mellem 3die og 4de Led samt derved, at Saxenes Fingre er noget længere.

3die Fodpar (Fig. 20) er af meget spinkel Bygning og stærkt forlænget, omtrent af hele Forkroppens Længde. 3die Led er lidt kortere end 4de og begge langs sin indre Kant bevæbnede med en enkelt Rad af spidse Torner foruden fine Børster. Sidste Led er stærkt forlænget og tyndt, noget afsmalnende mod Enden og forsynet med spredte Børsteknipper. Endekloen er omtrent halvt saa lang, leformig sammentrykt og langs sin indre Kant besat med fine Torner. Svømmegrenen er fuldkommen af samme Udseende som paa de 2 foregaaende Par, og heller ikke det knudeformige børstebærende Fremspring ved Basis mangler.

4de Fodpar skiller sig i ingen Henseende fra foregaaende Par.

Derimod viser sidste Fodpar (Fig. 21) tydeligt udprægede Afvigelser. Det er omtrent af samme Længde som de 2 foregaaende Par, men mindre stærkt afsmalnende mod Enden og viser et noget forskjelligt Længdeforhold af de enkelte Led. 3die Led er saaledes her adskilligt længere end 4de, og mangler ganske Torner, hvorimod Børsterne i den indre Kant er længere og talrigere. Ogsaa 5te Led er forholdsvis større end paa de foregaaende Par og neppe kortere end 4de. Endelig er sidste Led af fuldkommen lineær Form, overalt af ens Brede og i begge Kanter, men navnlig i den indre tæt besat med korte, kostformige Børsteknipper. Endekloen er ganske rudimentær, afstumpet i Spidsen og oftest ganske skjult mellem de fra foregaaende Led udgaaende Børster.

Gjellerne (se Fig. 22) viser den sædvanlige pyramidale Form og bladede Bygning, men udmærker sig ved sit betydelige Antal. Man tæller paa hver Side 10 saadanne, medregnet den ovenfor omtalte supplementære Gjelle paa sidste Par Kjævefødder. Naar undtages denne sidste og den allerbageste (se Fig. 21), som begge er uparrede, er de øvrige ordnede i en dobbelt Række, saaledes, at til hver Fod svarer 2 Gjeller (se Fig. 17 og 19).

Bagkroppens Svømmevedhæng (Fig. 23 og 24) er kraftigt udviklede og bestaar af en tykkere, muskuløs og noget fladtrykt Basaldel og 2 med talrige cilierede Randbørster besatte, smalt lancetformige Grene eller Endeplader. Af disse sidste er den indre noget kortere end den ydre og ved Roden i den indre Kant forsynet med et forholdsvist temmelig stort cylindriskt eller noget kølleformigt Appendix (se Fig. 24). 1ste Par skiller sig dog i denne Henseende

At the base of this pair of legs, as also of the three succeeding pairs, are attached 2 well-developed branchiæ, and, anterior to the latter, the basal joint forms a tuberculiform projection, furnished with a bunch of long, curving bristles.

The 2nd pair of legs (fig. 19) are similar in size and structure to the 1st, being distinguished from them merely by a somewhat different proportion in length between the 3rd and 4th joints, as also by the fingers of the chela being a trifle longer.

The 3rd pair of legs (fig. 20) are very feeble in structure, and greatly produced, their length about equalling that of the whole anterior division of the body. The 3rd joint is a trifle shorter than the 4th, and both exhibit along the inner margin a single series of sharp-pointed spines, exclusive of slender bristles. The last joint is greatly produced, and slender, tapering a little toward the extremity, and provided with scattered fascicles of bristles. The terminal claw is about half as long, falciform, and beset along the inner margin with delicate spines. The natatory branch has precisely the same appearance as that on the two preceding pairs, and not even is the bristle-beset, tuberculiform projection at the base wanting.

The 4th pair of legs are in no respect distinguished from the preceding pairs.

On the other hand, the last pair of legs (fig. 21) exhibit distinct deviations. They are about of the same length as the two preceding pairs, but taper less abruptly toward the end, as also the proportion in length between the different joints is somewhat different. Thus, the 3rd joint is considerably longer than the 4th, and entirely without spines, whereas the bristles on the inner margin are longer and more numerous. The 5th joint, too, is comparatively larger than in the preceding pair, and very little, if at all, shorter than the 4th. Finally, the last joint is perfectly linear in form, everywhere of the same breadth, and along both margins, but especially the inner, beset with short, scopiform fascicles of bristles. The terminal claw is quite rudimentary, obtuse at the end, and, as a general rule, entirely concealed among the bristles of the preceding joints.

The branchiæ (see fig. 22) exhibit the usual pyramidical form and lamellar structure, but are characterized by their considerable number. On either side occur 10, including the supplementary branchia mentioned above as found on the last pair of maxillipeds. If we except this and the hindmost branchia (see fig. 21), both of which are odd ones, the rest occur in a double series, so that each leg has 2 branchiæ (see figs. 17 and 19).

The natatory appendages of the abdomen (figs 23, 24) are powerfully developed, and consist of a thickish, muscular, and somewhat flattened basal part, along with 2 slender, lanceolate branches, or terminal plates, beset with numerous ciliated marginal bristles. Of these branches, the inner is somewhat shorter than the outer, and at the base furnished on the inner margin with a comparatively large, cylindric, or somewhat claviform, appendix (see fig. 24). The 1st pair are

væsentlig fra de øvrige, idet denne Gren her er meget kort og af simpel oval Form. Ligeledes bemærkes nogen Forskjel i disse Lemmer mellem begge Kjøn. Hos Hannen er de idethele kraftigere byggede, med forholdsvis kortere og bredere samt mindre rigeligt børstebesat Basaldel. Den indre Gren paa 1ste Par (se Fig. 28) er ogsaa betydelig bredere end hos Hunnen og har Enden næsten tvært afkuttet. Paa 2det Par (Fig. 29) findes fæstet til den indre Gren 2 Appendices, hvoraf det forreste og korteste svarer til samme hos Hunnen, medens det 2det er særegent for Hannen og har Formen af en smal tungedannet Plade, der i Kanterne er besat med stærke tornformige Børster.

Det midterste Halevedhæng (Fig. 25) er af en overordentlig smal og langstrakt Form og rager betydeligt ud over de ydre Halevedhæng (se Fig. 1). I sin forreste Fjerdepart er det af nogenlunde cylindrisk Form, men afsmalnes derpaa hurtigt og jevnt bagtil, saa at det yderste Parti bliver særdeles smalt. Selve Spidsen (Fig. 26) er noget udvidet og viser en noget udbuet Enderand, hvortil er fæstet 7 Torner. De 5 midterste af disse er indbyrdes af ens Storrelse og Udseende, hvorimod de 2 yderste er langt kraftigere udviklede og mere end 3 Gange saa lange samt stærkt divergerende til hver Side. Langs Siderne af Vedhænget og noget nærmere den dorsale Flade bemærkes en Række af 6 meget smaa Torner.

De ydre Halevedhæng (Fig. 27) har en ganske kort og simpel Roddel. Af Endepladerne er den indre lancetformig og rundt om besat med lange Fjærbørster. Den ydre Plade er noget længere end den indre og i Spidsen noget skraat afskaaret, med den ydre Kant ganske lige og besat med korte og fine Børster, den indre svagt buet. Ved det ydre Hjorne findes en særdeles liden og rudimentær Torn. Pladen er forovrigt ganske simpel, uden Spor af nogen Tværsutur i sit yderste Parti.

I levende Tilstand er hele Dyrets Legeme tilligemed dets forskjellige Vedhæng af en særdeles intensiv og pragtfuld blodrød Farve. De lange Svøber paa Folerne viser i sit basale Parti mere eller mindre tydeligt afvexlende morkere og lysere Ringe eller Tværbaand. Øiepigmentet er som ovenfor anført opakt hvidt.

Længden af de største Individer, er, maalt fra Antennebladenes Spids til Enden af det midterste Halevedhæng, 83^{mm}. Hannerne synes i Regelen at være større end Hunnerne.

Udvikling. Den betydelige Størrelse af de under Hunnens Bagkrop fæstede Æg (se Fig. 2) lader formode, at Udviklingen enten som hos Slægten Bythocaris sker directe, eller at den i al Fald kun er forbunden med en ufuldstændig Metamorphose. Kun hos et enkelt Exemplar fandtes imidlertid Udrogn, og denne var her endnu ikke saa udviklet, at nogen Undersøgelse i nævnte Retning kunde anstilles.

De mindste erholdte Exemplarer, af kun 16^{mm} Længde

in this respect distinguished from the rest chiefly by the said branch being exceedingly short and of a simple oval form. Some difference, too, is observed in these parts on comparing the sexes. In the male, they have on the whole a more powerful structure, with the basal portion comparatively shorter and broader, and less densely beset with bristles. The inner branch on the 1st pair (see fig. 28) is also considerably broader than in the female, and has the extremity almost truncate. On the 2nd pair (fig. 29), are seen, attached to the inner branch, 2 appendices, of which the anterior and shortest corresponds to that in the female, while the other is peculiar to the male, and has the form of a narrow, linguiform plate, beset along the margins with strong, spiniform bristles.

The telson (fig. 25) is remarkably narrow and elongate in form, and projects considerably beyond the outer caudal appendages (see fig. 1). Its anterior fourth has an approximately cylindric form, and thence it rapidly and uniformly tapers in a posterior direction, the hindmost part thus becoming exceedingly narrow. The point itself (fig. 26) is somewhat dilated, and exhibits a slightly outward-curving terminal margin, to which are attached 7 spines. The 5 middle ones are uniform in size and appearance, whereas the 2 outermost are far more powerfully developed, and upwards of 3 times the length of the others, as also widely diverging to either side. Along the sides of the appendage, and somewhat nearer the dorsal surface, is observed a series of 6 exceedingly small denticles.

The outer caudal appendages (fig. 27) have a short and simple basal part. Of the terminal plates, the inner is lanceolate, and beset round the edge with long, plumose bristles. The outer plate is a trifle longer than the inner, and at the point somewhat obliquely truncate, with the outer margin perfectly straight and beset with short and slender bristles, the inner slightly arcuate. At the outer corner, occurs an exceedingly small and rudimentary denticle. For the rest, the plate is quite simple, without the slightest trace of a transverse suture in its outermost part.

In a living state, the whole body of the animal, together with its various appendages, has an exceedingly vivid and brilliant blood-red colour. The long flagella of the antennæ exhibit in their basal part more or less distinctly alternating rings, or transverse bands. The ocular pigment is, as stated above, opaque white.

The length of the largest individuals met with, measured from the point of the antennal scale to the tip of the telson, was 83^{mm}. The males would as a rule appear to be larger than the females.

Development. — The very considerable size of the eggs attached beneath the abdomen of the female (see fig. 2), gives reason to surmise, that the development, either occurs direct, as in the genus Bythocaris, or that, at all events, it is merely connected with an imperfect metamorphosis. Meanwhile, roe was found in a single specimen only, and the stage of development did not admit of undertaking any investigation with the said object in view.

The smallest individuals obtained, measuring 16^{mm} in

viste i alt væsentligt fuldkommen samme Bygning som hos fuldvoxne Individer, uden at det mindste Spor af nogen forudgaaende Larvetilstand var at bemærke hos samme.

Forekomst og Levevis. Ifølge sin hele Organisation synes den her omhandlede Form at maatte antages at føre et Slags halvt pelagiskt Liv; men andre Ord, jeg har Grund til at antage, at den ikke som de i det foregaaende omtalte Former er strengt bunden til selve Havbunden, men streifer frit om i Vandet. Dog tyder Øinenes rudimentære Beskaffenhed med Bestemthed hen paa, at dens Ophold væsentlig kun kan være indskrænket til de dybere Vandlag; noget der ogsaa vinder fuld Bekræftelse ved de under vor Expedition gjorte Erfaringer. Alle de af os erholdte Exemplarer er nemlig optagne ved Hjælp af Bundskraben eller Trawlnettet fra de største Dybder i den kolde Area, fra 452 til 1862 Favne. Paa grundere Vand har vi aldrig faaet den op, heller ikke nogensinde i Overfladenettet, skjøndt dette i stor Udstrækning har været benyttet under Expeditionen.

Endelig fortjener det at bemærkes, at R. Collett har fundet Levninger af nærværende Krebs i Ventrikelen hos et Par Dybvandsfiske, hvis Organisation er en saadan, at de med Sikkerhed maa antages ikke at kunne gjøre meget lange Udflugter fra Havbunden, nemlig *Raja hyperborea* Collett, og *Lycodes frigidus* Collett, begge optagne fra det store Dyb i den kolde Area.

Som en Mærkelighed fortjener det dog her at anføres, at det af Buchholz undersøgte Exemplar blev, som det heder, taget lige i Vandskorpen. Hvis dette virkelig forholder sig saa, maa det dog antages at have været et ganske anomalt Træf. Exemplaret maa vel af en eller anden tilfældig Aarsag, ved Undervandsstrøm eller paa anden Maade, være bleven bragt op fra de dybere Vandlag, hvor Arten aabenbart maa antages at have sit rette Hjem.

Skjøndt denne Krebs ifølge sine kraftigt udviklede Svømmeredskaber og ringe specifiske Vægt maa antages at være et særdeles livligt Dyr, var der dog altid kun yderst svage Livsytringer at se hos de af os indfangede Individer, og det uagtet disse som oftest erholdtes i fuldkommen ubeskadiget Tilstand og hurtigst muligt efter Indfangningen blev isolerede i Kar med friskt Søvand. Det synes klart, at Grunden hertil maa være den, at Dyret ved saaledes pludseligt at bringes op til Dagens Lys fra de enorme Dyb, hvori det har sit Tilhold, hensættes under saa abnorme Forhold, at alle Livsfunctioner herved bliver ligesom lamslaaede. Noget lignende observeres forøvrigt ogsaa i mere eller mindre Grad med de fleste øvrige paa store Dyb levende Sødyr.

Udbredning. Det af Buchholz beskrevne Individ erholdtes, som anført, i Havet Øst for Grønland og nær den 74de Bredegrad. Under vor Expedition har vi taget den nærværende Form paa ikke mindre end 14 forskjellige Stationer, samtlige tilhørende den kolde Area. Endelig er af R. Collett fundet Levninger af et Exemplar i Ventrikelen af en *Lycodes frigidus* fra Stat. 353, hvorfra vi ikke har noteret denne Krebs.

length, exhibited in all essential characters precisely the same structure as full-grown individuals, without its being possible to detect the slightest trace of a previous larval stage.

Occurrence and Habits. — Judging from its whole organization, the form here treated of would appear to lead a kind of semi-pelagic existence; in other words, I have reason to suppose, that, unlike the forms previously recorded, this animal is not strictly confined to the sea-bottom, but can move about freely through the water. Meanwhile, the rudimentary character of the eyes indicate with absolute certainty its habitat as chiefly lying in the deeper strata, a fact to which the experience derived on the Norwegian Expedition gives full confirmation. All of the specimens collected were brought up in the dredge or trawl from the greatest depths in the cold area — 452 to 1862 fathoms. In shallower water we never took it, nor in the surface-net, which notwithstanding was extensively used on the Expedition.

Finally, I will not fail to remark that Mr. R. Collett has found the remains of this form in the ventricle of one or two deep-water fishes whose organization is such as must infallibly prevent them from ascending to any great distance from the sea-bed, viz. — *Raja hyperborea* Collett and *Lycodes frigidus* Collett, both brought up from the great depths of the cold area.

As a remarkable coincidence, it is worthy of note, that the specimen examined by Buchholz is said to have been taken at the surface of the water. Assuming this to have actually been the case, we cannot but regard it as anomolous. The animal had probably from some incidental circumstance, by an undercurrent or in some other manner, been carried up from the deeper strata, where the species must obviously be assumed to have its true habitat.

Though the form described above, judging from its powerfully developed natatory organs and trifling specific weight, must be deemed an exceedingly vivacious animal, the specimens we succeeded in collecting gave without exception but very faint manifestations of life, notwithstanding they were captured as a rule in a perfectly unmutilated state and as soon as possible isolated in a vessel containing fresh sea-water. The reason of this must clearly be, that the animal, on being suddenly brought up to the light of day from the enormous depths it inhabits, is placed in such abnormal conditions as cannot fail to paralyze all its vital functions. For the rest, similar phenomena may be observed, to a greater or less extent, in most other marine animals whose habitat is the great depths of the ocean.

Distribution. — The specimen described by Buchholz was taken, as previously stated, in the open sea, east of Greenland, and near the 74th parallel of latitude. On the Norwegian Expedition, the form occurred at not less than 14 different Stations, all in the cold area. Finally, Mr. R. Collett found the remains of a specimen in the ventricle of *Lycodes frigidus*, at Stat. 353, from which we had not recorded this Crustacean.

Dens for Tiden bekjendte Udbredningsfelt bliver herefter den dybe, med iskoldt Vand i Bunden fyldte Havdal mellem Spitsbergen, Beeren Eiland og Norge paa den ene Side, Grønland, Jan Mayen og Island paa den anden, fra den 63de Bredegrad af og nordlig til den 80de.

Hence, the known limits of its distribution are confined within the deep basin, filled at the bottom with ice-cold water, that extends between Spitzbergen, Beeren Eiland, and Norway on the one side, and Greenland, Jan Mayen, and Iceland on the other, — from the 63rd to the 80th parallel of latitude.

Subordo Schizopoda.

Fam. Mysidæ.

Gen. **Erythrops**, G. O. Sars, 1869.

Undersøgelser over Christianiafjordens Dybvandsfauna.

7. Erythrops glacialis. G. O. Sars. n. sp.

(Pl. V. Fig. 1—4).

Erythrops glacialis, G. O. Sars, Prodromus descriptionis Crust. etc. No. 30.

Artscharacteristik. Rygskjoldet forholdsvis stort, fortil neppe afsmalnende, næsten dækkende hele Forkroppen. Panderanden i Midten stærkt udbuet og jevnt tilrundet. Øinene meget smaa og ufuldkomment udviklede, ikke overragende Siderne af Rygskjoldet, med lyserødt Pigment, der oventil kun indtager Randzonen. 2det Par Foleres Blad vel udviklet, omtrent $^1/_3$ længere end 1ste Par's Skaft, aflangt lineært, med den ydre Kant glat, Enden skjævt afskaaret og den indre Kant forsynet med talrige lange Fjærborster. Fødderne særdeles tynde og forlængede. Det midterste Halevedhæng med Spidsen lige afskaaret og bevæbnet med 4 omtrent ens udviklede Torner og 2 cilierede Borster i Midten. De ydre Halevedhæng med særdeles smale og tilspidsede Endeplader. Legemet gjennemsigtigt med kun svagt udpræget Pigmentering. Hunnens Længde indtil 20^{mm}.

Findesteder. Stat. 87, 124.

Bemærkninger. Nærværende anselige Form kjendes let fra de øvrige bekjendte Arter af Slægten, foruden ved sin betydelige Størrelse, ved de usædvanlig smaa og ufuldkomment udviklede Øine, det store ligesom opsvulmede Rygskjold samt ved de stærkt udviklede og med talrige Randborster forsynede Antenneblade.

Beskrivelse. Legemets Form er (se Pl. V. Fig. 1) i Sammenligning med de tidligere bekjendte Arter temmelig robust, med Forkroppen betydelig tykkere end Bagkroppen. Denne sidste er som hos Slægtens øvrige Arter meget smækker,

Subordo Schizopoda.

Fam. Mysidæ.

Gen. **Erythrops**, G. O. Sars, 1869.

Undersøgelser over Christianiafjordens Dybvandsfauna.

7. Erythrops glacialis, G. O. Sars, n. sp.

(Pl. V, figs. 1—4).

Erythrops glacialis, G. O. Sars, Prodromus descriptionis Crust. etc., No. 30.

Specific Character. — Carapax comparatively large, tapering scarcely at all anteriorly, covering almost the whole of the anterior division of the body. Frontal margin very considerably arcuate in the middle, and uniformly rounded. Eyes exceedingly small, and imperfectly developed, not projecting over the sides of the carapax, furnished with a light-red pigment, which, above, occupies the marginal zone only. Scale of 2nd pair of antennæ well developed, about one-third longer than peduncle of 1st pair, oblongo-linear, with the outer margin smooth, the end obliquely truncate, and the inner margin furnished with numerous long, plumose bristles. Legs exceedingly slender and elongate. Telson, having the point abruptly truncate, armed with 4, about equally developed spines, and bearing in the middle 2 ciliated bristles. Outer caudal appendages with exceedingly narrow and pointed terminal plates. Body translucent and but slightly pigmented. Length of female reaching 20^{mm}.

Locality. — Stats. 87, 124.

Remarks. — The present form is readily distinguished from the other known species of the genus, apart from its considerable size, by the unusually small and imperfectly developed eyes, the large, and, as it were, tumid carapax, as also by the strongly developed antennal scales, furnished with numerous marginal bristles.

Description. — The form of the body is (see Pl. V, fig. 1), compared to the previously known species, relatively robust, with the cephalo-thorax considerably thicker than the abdomen. The latter is, as in the other species

cylindrisk, kun lidet afsmalnende bagtil og har sidste Segment betydelig længere end de foregaaende.

Rygskjoldet er forholdsvis stort, ligesom opsvulmet og neppe mærkeligt indknebet i sit forreste Parti. Det dækker næsten fuldstændigt Forkroppen, kun ladende en ubetydelig Del af sidste Segment oventil frit. Dets forreste Rand er i Midten stærkt udbuet, dannende en bredt afrundet Pandeplade, der delvis dækker Roden af Øinene; den bageste Rand er oventil kun ganske svagt udrandet. Cervicalfuren er skarpt og tydeligt markeret, og den foran samme beliggende Del af Rygskjoldet er ovenfra seet kjendeligt bredere end Bagkroppen.

Øinene (se Fig. 2) er meget smaa og ufuldkommet udviklede samt rager ikke som sædvanligt ud over Rygskjoldets Sider. Af Form er de kort pæreformige og noget affladede, med den pigmenterte Del oventil kun indtagende den allerydерste Randzone. Pigmentet er som hos de øvrige Arter af Slægten smukt lyserødt. Derimod er Facetteringen kun lidet tydelig.

1ste Par Foleres Skaft (*ibid.*) er af den sædvanlige Bygning og omtrent af samme Længde som den foran Cervicalfuren beliggende Del af Rygskjoldet. Svøbernes Længde kan ikke nøiere bestemmes, da deres ydre Del paa det undersøgte Exemplar var afbrukket.

2det Par Foleres Blad (*ibid.*) er forholdsvis af ikke ubetydelig Størrelse, næsten $^1/_3$ længere end 1ste Pars Skaft og af aflang lineær Form, med den ydre Kant ganske glat og lige samt fortil endende med et lidet tandformigt Fremspring, den indre svagt buet og Enden meget skraat afskaaren i Retningen indenfra udad. Langs den indre Kant og Spidsen er fæstet et temmelig betydeligt Antal af lange Fjærborster.

Fødderne er af den for nærværende Slægt characteristiske spinkle, traaddannede Form. Kun enkelte af dem var endnu i Behold paa det undersøgte Exemplar, og disse viste en lignende stærkt forlænget Form som hos *E. abyssorum*, idet det ydre Parti (Fig. 3) var særdeles langt og tyndt, med de 2 sidste Led tilsammen neppe overstigende $^1/_3$ af det foregaaendes Længde.

Æggeposen eller Marsupium var paa det undersøgte Individ meget stor og fyldt med næsten fuldt udviklede Unger.

Det midterste Halevedhæng (se Fig. 4) viser det for Slægten characteristiske Udseende. Det er ganske kort, neppe længere end bredt og bærer paa den næsten lige afskaarne Enderand 4 omtrent lige lange Torner og i Midten 2 fint ciliерede Borster.

De ydre Halevedhæng (*ibid*) har særdeles smale og forlængede, lancetformige Endeplader, begge rundt om besatte med lange Fjærborster. Den ydre er omtrent $^1/_4$ længere end den indre, der ved Basis viser det sædvanlige Horeapparat.

Hele Dyrets Legeme var i frisk Tilstand i høi Grad gjennemsigtigt og næsten uden nogen Pigmentering, saa at

of the genus, very slender, cylindric, tapering but little posteriorly, and has the terminal segment much longer than any of those preceding it.

The carapax is comparatively large, as it were swollen, and well-nigh imperceptibly constricted in its anterior part. It covers almost the whole of the cephalo-thorax, leaving but a very small portion of the last segment uncovered above. Its anterior margin is considerably arcuate, forming a broad, rounded frontal plate, which partially covers the base of the eyes; the posterior margin is but slightly emarginate above. The cervical groove is sharply and distinctly marked, and the portion of the carapax lying anterior to it has, when viewed from above, a diameter perceptibly exceeding that of the posterior division of the body.

The eyes (see fig. 2) are exceedingly small and imperfectly developed, and, contrary to what is usually the case, do not project over the sides of the carapax. In shape, they are abrupt-pyriform and somewhat applanated, with the cornea occupying, above, only the outermost marginal zone. The pigment, as in the other species of the genus, is a beautiful light-red. On the other hand, the areolar structure of the cornea is anything but distinct.

The peduncle of the 1st pair of antennæ *(ibid.)* has the usual structure, and well-nigh the same length as the portion of the carapax placed anterior to the cervical groove. The length of the flagella cannot be accurately given, their outer part in the specimen examined having been broken off.

The scale of the 2nd pair of antennæ *(ibid.)* is comparatively large, almost one-third longer than the peduncle of the 1st pair, and oblongo-linear in form, with the outer margin quite smooth and straight and terminating anteriorly in a small dentiform projection; the inner margin is slightly arched, and has the extremity very obliquely truncate, from within to without. Along the inner margin, and at the point, are attached a considerable number of long, plumose bristles.

The legs exhibit the slender, filiform appearance characteristic of the present genus. A few only were left in the specimen examined, and these had a very elongated form, similar to that in *E. abyssorum*, the outer portion (fig. 3) being extremely long and slender, with the two last joints, taken together, scarcely exceeding by one-third the preceding articulation in length.

The incubatory pouch, or marsupium, was very large in the specimen examined, and full of almost mature young.

The telson (see fig. 4) exhibits the appearance characteristic of the genus. It is quite short, scarcely longer than broad, and has on the well-nigh truncate terminal margin 4 long spines, about equal in length, and in the middle 2 delicately ciliated bristles.

The outer caudal appendages (*ibid.*) have 2 exceedingly narrow and prolonged, lanceolate terminal plates, both beset round the edges with long, plumose bristles. The outer plate is about one-fourth longer than the inner, which exhibits at the base the usual auditory apparatus.

The whole body of the animal, in a fresh state, was well-nigh translucent, and scarcely at all pigmented, so that

de vigtigste Indvolde med stor Tydelighed skinnede igjennem de særdeles tynde Integumenter. Meget iøinefaldende var saaledes den udsædvanlig store i den forreste Del af Forkroppen liggende kugleformige Mave, der var fyldt med rodfarvet Indhold.

Længden af det undersøgte Exemplar er, maalt fra Enden af Antennebladene til Spidsen af de ydre Halevedhæng 20^{mm}, en Størrelse, der betydelig overskrider samme hos de hidtil bekjendte Arter af denne Slægt.

Forekomst og Udbredning. Et enkelt, temmelig vel vedligeholdt Exemplar, en fuldvoxen Hun, optoges under Expeditionens 1ste Togt med Bundskraben fra et Dyb af 498 Favne i Havet Vest af Trondhjemsfjorden (Stat. 87). Under 2det Togt erholdtes desuden et stærkt mutileret Exemplar af samme Art længere Nord i Havet udenfor Helgeland (Stat. 124) fra 350 Favnes Dybde.

Da begge disse Stationer tilhører den kolde Area, er Arten utvivlsomt at betragte som en ægte arktisk Form, hvis Udbredning vistnok for en Del vil kunne antages at falde sammen med de øvrige paa de nævnte Stationer erholdte Dybvandsdyr.

the principal viscera shone with great distinctness through the exceedingly thin integuments. Very conspicuous, for example, in the anterior portion of the cephalo-thorax, was the unusually large and globular stomach, with its red-coloured contents.

The length of the specimen examined, measured from the tip of the antennal scales to the point of the outer caudal appendages, reaches 20^{mm}, a size considerably exceeding that attained by any previously known species of the genus.

Occurrence and Distribution. — A single, comparatively uninjured specimen, viz. a full-grown female, was brought up, on the first cruise of the Expedition, in the dredge, from a depth of 498 fathoms, in the open sea, west of the Trondhjemfjord (Stat. 87). On the second cruise, an example of the same species was obtained, in a very mutilated condition, farther north, off Helgeland (Stat. 124), from a depth of 350 fathoms.

Both these Stations being in the cold area, the species may unquestionably be regarded as a true Arctic form, the distribution of which, to some extent, no doubt corresponds with that of the other deep-sea animals collected at the said Stations.

Gen. **Parerythrops**, G. O. Sars, 1869.

Undersøgelser over Christianiafjordens Dybvandsfauna.

8. Parerythrops spectabilis, G. O. Sars, n. sp.

Pl. V, Fig. 5—12).

Parerythrops spectabilis, G. O. Sars, Prodromus descriptionis Crust. etc. No. 32.

Artscharacteristik. Rygskjoldet stort og opsvulmet, med skarpt markeret Cervicalfure og Panderanden i Midten vinkelformigt fremspringende. Øinene usædvanlig smaa med gulrodt Pigment. 2det Par Foleres Blad kjendeligt længere end 1ste Pars Skaft, aflangt-rhomboidalt, 3 Gange saa langt som bredt, med Enden særdeles skjævt afskaaret og det tandformige Fremspring ved det ydre Hjørne meget lidet. Hannens 1ste Par Bagkropslemmer rudimentære, af samme Udseende som hos Hunnen. Det midterste Halevedhæng ved Spidsen bevæbnet med 6 omtrent ligestore Torner. De ydre Halevedhængs indre Plade langs den indre Kant under Randborsterne forsynet med talrige smaa Torner; Otolithen usædvanlig liden. Legemet prydet med smukt purpurfarvet Pigment. Længden indtil 26^{mm}.

Findested. Stat. 31, 237.

Bemærkninger. Fra Slægtens øvrige Arter, med hvilke nærværende Form viser en stor habituel Lighed, vil den strax kunne kjendes, foruden ved sin meget betydelige

Gen. **Parerythrops**, G. O. Sars, 1869.

Undersøgelser over Christianiafjordens Dybvandsfauna.

8. Parerythrops spectabilis, G. O. Sars, n. sp.

(Pl. V, figs. 5—12).

Parerythrops spectabilis, G. O. Sars, Prodromus descriptionis Crust. etc., No. 32.

Specific Character. — Carapax large and tumid, with the cervical grove sharply defined, and the frontal margin angular and projecting in the middle. Eyes remarkably small, and furnished with a yellowish-red pigment. Scale of 2nd pair of antennæ perceptibly longer than peduncle of 1st pair, oblongo-rhomboidal in form, three times as long as broad, with the end very obliquely truncate, and the dentiform projection at the outer corner exceedingly small. First pair of pleopoda in male rudimentary, and exhibiting the same appearance as those in female. Telson armed at the point with 6 spines, about equal in size. Inner plate of outer caudal appendages furnished along the inner border, beneath the marginal bristles, with numerous small spines; the otolith remarkably small. Body brilliantly coloured with a beautiful purple pigment. Length reaching 26^{mm}.

Locality. — Stats. 31, 237.

Remarks. — From the other species of the genus, to which the present form exhibits great habitual resemblance, it may be readily distinguished, apart from its very

Størrelse, ved Øinenes ringe Udvikling, Antennebladenes Størrelse samt den meget characteristiske Bevæbning af det midterste Halevedhæng.

Beskrivelse af Hannen. Legemets Form er (se Pl. V, Fig. 5 og 6), som hos de tidligere bekjendte Arter af denne Slægt, meget kort og plump, med stærkt opsvulmet Forkrop og betydelig tyndere Bagkrop.

Rygskjoldet dækker Forkroppen næsten fuldstændigt og viser en meget skarpt markeret Cervicalfure, der er stærkt udbuet bagtil. Pandepladen springer tydeligt frem mellem Roden af Øinene og er af trekantet Form samt næsten retvinklet.

Øinene er usædvanlig smaa, og, skjøndt de i Midten er adskilte ved et temmelig betydeligt Mellemrum, rager de dog ikke, som hos de øvrige Arter, ud over Siderne. De er af kort kolledannet Form og forsynet med et lyst gulrødt Pigment, der paa de nylig optagne og endnu levende Exemplarer viste et særdeles brillant guldglindsende Skjær.

1ste Par Følleres Skaft er som hos Slægtens øvrige Arter tykt og plumpt, med Basalleddet forholdsvis kort og sidste Led meget stort og ligesom opsvulmet. Det bærer ved Enden det for Hannerne eiendommelige haarede Appendix, der er af betydelig Størrelse og konisk Form samt udtrukket i et spidst Hjørne. Naar de talrige kostformigt divergerende Børster, hvormed dette Appendix er besat, fjernes, viser det sig, at alle disse udspringer fra et flere Gange zigzagformigt bugtet baandformigt Felt, der slynger sig langs ad Vedhængets nedre Flade (se Fig. 7).

2det Par Følleres Blad (se Fig. 8) er i Sammenligning med de øvrige bekjendte Arter af Slægten, forholdsvis temmelig stort og overrager kjendeligt 1ste Par Følleres Skaft. Af Form er det aflangt-rhomboidalt, omtrent 3 Gange længere end bredt og med Enden meget skjævt afskaaret i Retningen indenfra udad. Den ydre glatte Rand løber fortil ud i et kort tandformigt Fremspring; den indre Kant og Enden er forsynet med et meget betydeligt Antal af lange Randborster. Svøben er vistnok af meget anselig Længde, da dens Skaft er særdeles kraftigt bygget; men dens ydre Del var paa de undersøgte Exemplarer afbrukket ligesom Svøberne paa 1ste Par Følere.

I Munddelenes Bygning er ikke nogen væsentlig Afvigelse fra de øvrige Arter at notere.

Ogsaa Fodderne viser det for Slægten characteristiske Udseende. Deres ydre Parti (Fig. 9) er omtrent af det foregaaende Leds Længde og bestaar, foruden den tydeligt udviklede Endeklo, af 3 med lange Børsteknipper forsynede Led, hvoraf det første er størst og ved en meget skjæv Sutur forbundet med det næste. Svømmegrenene er ikke meget stærkt forlængede, men af særdeles kraftig Bygning, med Basaldelen stærkt pladeformigt udvidet og muskulos.

De til Bagkroppens Ventralside fæstede Lemmer (se

considerable size, by the slight development of the eyes, the size of the antennal scales, and the highly characteristic armature of the telson.

Description of the Male. — Form of the body (see Pl. V, figs. 5, 6), as in the previously known species of this genus, exceedingly short and clumsy, with the cephalothorax greatly swollen and the abdomen, by comparison, very slender.

The carapax covers almost entirely the anterior division of the body, and has a very sharply defined cervical groove, strongly arched posteriorly. The frontal plate triangular, almost right-angled, in form, and distinctly projecting between the bases of the eyes.

The eyes are unusually small, and, though separated in the middle by a rather wide space, do not, as in the other species, project over the sides. They are clavate in form, and furnished with a light yellowish-red pigment, which, in recently taken and still living specimens, had an exceedingly brilliant, golden lustre.

The peduncle of the 1st pair of antennæ is, as in the other species of the genus, thick and clumsy in shape, with the basal joint comparatively short, and the last joint exceedingly large and, as it were, swollen. It has at the extremity the hair-clothed appendix peculiar to the males, which is of considerable size and conical in form, and produced into a sharp-pointed corner. On removing the numerous, scopi form, diverging bristles with which this appendix is beset, they are all found to issue from a zigzag, riband-shaped tract, winding along the lower surface of the appendage (see fig. 7).

The scale of the 2nd pair of antennæ (see fig. 8) is, compared to that in the other known species of the genus, rather large, and projects perceptibly over the peduncle of the 1st pair of antennæ. In form it is oblongo-rhomboidal, about three times longer than broad, and with the end very obliquely truncate, from within to without. The smooth outer margin is produced anteriorly into a short dentiform projection; the inner margin and the end are furnished with a very considerable number of long marginal bristles. The flagellum must certainly attain a very considerable length, the structure of its peduncle being exceedingly powerful; but its outer portion in the specimens examined was broken off, as also the flagella on the 1st pair of antennæ.

The structure of the oral appendages exhibits no essential deviation from that observed in the other species of the genus.

The legs, too, have the usual characteristic appearance. Their outer portion (fig. 9) is about equal in length to the preceding joint, and consists, exclusive of the distinctly developed terminal claw, of 3 joints, furnished with long fascicles of bristles, the first joint being the largest, and connected by an exceedingly obliqne suture with the succeeding one. The natatory branches are not very elongated, but remarkably powerful in structure, with the basal portion greatly dilated, and muscular.

The limbs attached to the ventral side of the abdomen

Fig. 5) viser et lignende Forhold som hos den typiske Art, *P. obesa*, idet 1ste Par er ganske rudimentært og af samme Udseende som hos Hunnen, medens de ovrige er udviklede til kraftige Svømmeredskaber med to 8-leddede Grene.

Det midterste Halevedhæng (Fig. 10) er som hos de ovrige Arter aflangt-triangulært, med Sidekanterne glatte og Spidsen smalt udtrukken, men skiller sig væsentlig ved dennes Bevæbning. Til den i Midten noget udbuede Enderand er nemlig (Fig. 11), foruden 2 mediane Børster, fæstet til hver Side 3 Torner af næsten ens Storrelse, medens der hos alle de ovrige bekjendte Arter kun findes 2 saadanne og disse meget ulige i Storrelse.

De ydre Halevedhæng har den indre Plade (Fig. 12) betydelig kortere end den ydre og langs den indre Kant under Randbørsterne forsynet med en Rad af smaa Torner, der næsten strækker sig til Pladens Spids. Høreapparatet ved Basis er tydeligt udviklet, skjøndt Otolithen er af forholdsvis ringere Størrelse end sædvanligt.

I levende Tilstand er Dyrets Legeme temmelig gjennemsigtigt og prydet med et noget diffust smukt lyserødt Pigment, der paa Bagkroppen danner mere eller mindre fuldstændige Tværbaand. Munddelene og Fødderne er intensivt rødfarvede, ligeledes den store i den forreste Del af Forkroppen gjennemskinnende Mave.

Længden af den fuldt udviklede Han er fulde 26^{mm}, en Storrelse, som ikke nogen af de tidligere bekjendte Arter paa langt nær opnaar.

Forekomst og Udbredning. 2 temmelig vel vedligeholdte Exemplarer, en yngre Hun og en fuldt udviklet Han, blev under Expeditionens 1ste Togt optaget i Bundskraben fra et Dyb af 417 Favne i Havet udenfor Storeggen (Stat. 31). Et andet, men i høi Grad mutileret Exemplar, erholdtes under 2det Togt paa en vidt adskilt Lokalitet, nemlig i Havet SV af Jan Mayen (Stat. 237). Dybden 263 Favne.

Da de to omtalte Stationer begge tilhører den kolde Area, og Arten er fundet paa begge Sider af Nordhavets store Dyb, er man berettiget til at slutte, at den ligesom foregaaende Myside er en ægte arktisk Form, der rimeligvis er udbredt over den hele kolde Area, hvor Dybdeforhold og Bundens Beskaffenhed er egnet for dens Trivsel.

(see fig. 5) are precisely similar to those in the typical species, *P. obesa*, the 1st pair being quite rudimentary and of the same appearance as in the female, whereas the others are developed into powerful natatory organs, with 2 eight-jointed branches.

The telson (fig. 10), as in the other species, oblongo-triangular, with the lateral margins smooth and the point slenderly produced; its armature however exhibits a very striking specific character. To the terminal margin, somewhat arched in the middle, are attached on either side (fig. 11), exclusive of 2 median bristles, 3 spines, about equal in size, whereas 2 only, and those of very unequal size, occur in all other known species.

The outer caudal appendages have the inner plate (fig. 12) considerably shorter than the outer, and furnished along the inner margin, beneath the bristles, with a row of small spines, reaching almost to the point of the plate. The auditory apparatus at the base distinctly developed, although the otolith is comparatively much smaller in size than usual.

In a living state, the body of the animal is well-nigh translucent, and beautifully coloured with a somewhat diffuse, light-red pigment, which, on the posterior division of the body, forms more or less perfect transverse bands. The oral appendages and the legs are of a vivid red, as also the large stomach, seen shining through the anterior part of the cephalo-thorax.

Length of the fully developed male 26^{mm}, a size far outreaching that of any previously known species.

Occurrence and Distribution. — Two specimens, in a state comparatively good, a young female and a fully developed male, were brought up, on the first cruise of the Expedition, in the dredge, from a depth of 417 fathoms, in the open sea, off the Storeggen bank (Stat. 31). Another, but very mutilated example, was obtained on the second cruise, in a widely different locality, viz. in the open sea south-west of Jan Mayen (Stat. 237), from a depth of 263 fathoms.

The two aforesaid Stations having both belonged to the cold area, and the species been found on either side of the great ocean valley of the North Atlantic, we are warranted in regarding this animal, equally with the preceding species, as a true Arctic form, distributed in all probability throughout the whole of the cold area where the depth and nature of the bottom are favourably adapted for its existence.

Gen. **Pseudomysis,** G. O. Sars, 1880. n.

Crustacea et Pycnogonida nova etc.

Slægtscharacteristik. Legemet af undersætsig Form. Rygskjoldet stort og bredt, fortil i Midten fremspringende. Øinene ganske rudimentære, uden Pigment eller Synselementer. 1ste Par Folere af sædvanligt Udseende. 2det Par Foleres Blad lancetformigt, rundt om børstebesat. Munddelene temmelig lig samme hos Slægten Mysideis. Fødderne forholdsvis smaa og svage, med mangeleddet Tarse og Endekloen ufuldkomment udviklet; Svømmegrenene overordentlig forlængede. Det midterste Halevedhæng særdeles kort, pladeformigt, bagtil indskaaret. De ydre Halevedhæng med vel udviklede lancetformige Endeplader; Høreapparatet ved Basis af den indre Plade rudimentært.

Almindelige Bemærkninger. Af de tidligere bekjendte Mysideslægter synes denne nye Slægt, navnlig hvad Munddelene angaar, at slutte sig nærmest til *Sl. Mysideis* G. O. Sars, men skiller sig bestemt fra samme ved den rudimentære Beskaffenhed af Øinene samt det i den indre Haleplade beliggende Høreapparat, fremdeles ved Fødddernes afvigende Bygning og den meget eiendommelige Form af det midterste Halevedhæng.

Enkelte vigtige Punkter, navnlig Forholdet af Hannens Bagkropslemmer, har vistnok endnu ikke kunnet oplyses paa Grund af det utilstrækkelige foreliggende Materiale; men allerede de ovenfor fremhævede Characterer synes mig dog at være af tilstrækkelig Vægt til herpaa at maatte begrunde en generisk Adskillelse.

Slægten indeholder for Tiden kun en enkelt Art, som desværre kun er repræsenteret af to meget mutilerede Exemplarer, begge Hunner.

Gen. **Pseudomysis,** G. O. Sars, 1880. n.

Crustacea et Pycnogonida nova etc.

Generic Character. — Body thickset in form. Carapax large and broad, projecting anteriorly in the middle. Eyes quite rudimentary, without either pigment or visual elements. First pair of antennæ exhibiting the usual appearance. Scale of 2nd pair lanceolate, and beset round the edges with bristles. Oral appendages presenting considerable resemblance to those in the genus Mysideis. Legs comparatively small and feeble, with a multiarticulate tarsus, and having the terminal claw imperfectly developed; natatory branches remarkably elongate. Telson exceedingly short, lamelliform, incised posteriorly. Outer caudal appendages with well-developed lanceolate terminal plates; auditory apparatus at the base of the inner plate rudimentary.

General Remarks. — Of the previously known genera of Mysidians, this new genus — in particular as regards the oral appendages — would appear to approximate closest the genus *Mysideis,* G. O. Sars, but is, however, plainly distinguished from it by the rudimentary character of the eyes and of the auditory apparatus placed within the inner caudal plate, moreover by the deviating structure of the legs and the very peculiar form of the telson.

A few important points, more especially as regards the structure of the pleopoda in the male, have, it is true, not yet been elucidated, owing to the insufficient material obtained; but even the characters specified above are, I opine, amply sufficient to warrant generic distinction.

The genus comprises at present but a single species, which, unfortunately, is represented by only two very mutilated specimens, both females.

9. Pseudomysis abyssi, G. O. Sars, n. sp.

(Pl. V, Fig. 13—21, Pl. XX, Fig. 18—20).

Pseudomysis abyssi, G. O. Sars, Crustacea et Pycnogonida nova etc. No. 4.

Artscharacteristik. Rygskjoldet fortil betydelig bredere end Bagkroppen, med Panderanden i Midten udtraget i en skarp, rostrumlignende Spids. Øinene meget smaa, stumpt koniske, ved Spidsen fortil forsynet med et tandformigt Fremspring. 1ste Par Foleres Skaft smalt cylindriskt med 1ste og sidste Led af samme Størrelse. 2det Par Foleres Blad dobbelt saa langt som 1ste Pars Skaft, smalt lancetformigt, med Spidsen stumpt tilrundet. Fødderne alle af ens Længde, med det ydre Parti omtrent saa langt som det foregaaende Led og delt i 7—8 korte,

9. Pseudomysis abyssi, G. O. Sars, n. sp.

(Pl. V, figs. 13—21; Pl. XX, figs. 18—20).

Pseudomysis abyssi, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 4.

Specific Character. — Carapax much broader anteriorly than posterior division of body, with the frontal margin produced in the middle to a sharp, rostrum-like point. Eyes very small, obtusely conical, furnished anteriorly at the point with a dentiform projection. Peduncle of 1st pair of antennæ slender-cylindric, with the first and last joints equal in size. Scale of 2nd pair of antennæ twice as long as peduncle of 1st pair, slender-lanceolate, with the point obtusely rounded. Legs all of one length, with the outer portion about as long as the preceding joint,

tæt børstebesatte Led. Det midterste Halevedhæng næsten qvadratisk, kun lidet længere end bredt, med Sidekanterne i den bagre Halvpart forsynede med smaa Torner; det bagre Indsnit bredt, vinklet, med Kanterne fint saugtakkede; Endelapperne tilspidsede og bevæbnede med en enkelt apical Torn. De ydre Halevedhængs indre Plade kortere end den ydre og langs den indre Kant under Randbørsterne tæt tandet. Hele Legemet gjennemsigtigt, af hvidagtig Farve, uden Spor af Pigmentering.

Findesteder. Stat. 295, 297.

Bemærkninger. Den i min Prodromus givne Diagnose er kun affattet efter det under vor Expedition tagne enkelte Exemplar, paa hvilket forskjellige i systematisk Henseende vigtige Dele manglede eller var ufuldstændige. Længe efter Expeditionens Afslutning og efterat nærværende Afhandling allerede var paabegyndt, blev imidlertid af R. Collett i Ventrikelen af den mærkelige nye Dybvandsfisk, *Rhodichthys regina*, Coll., fundet Levningerne af et andet Exemplar af samme Art, paa hvilket saavel Antennebladene som samtlige Fødder var i Behold. Jeg har herved i enkelte vigtige Punkter kunnet supplere min tidligere Characteristik af nærværende interessante Myside og har paa sidste Planche vedføiet de fornødne Figurer.

Beskrivelse. Da begge de foreliggende Exemplarer, som ovenfor bemærket, er i en stærkt mutileret Tilstand, bliver det temmelig vanskeligt med Sikkerhed at bestemme Legemets almindelige Form. Den synes imidlertid, efter de erholdte Levninger at domme, at have været forholdsvis undersætsig og nærmest lignende samme hos Arterne af Slægten *Mysideis*, G. O. Sars.

Rygskjoldet er forholdsvis stort og synes fuldstændigt at have dækket Forkroppen. Det er fortil (se Pl. V. Fig. 13, og Pl. XX, Fig. 18) betydelig bredere end Bagkroppen og viser foran Midten en tydeligt markeret buet Cervicalfure. Pandedelen springer stærkt frem og er i Midten udtrukken i en skarp tilspidset, rostrumlignende Fortsats, der rækker næsten til Midten af 1ste Par Føleres Basalled.

Øinene (*ibid.*) er ganske og aldeles rudimentære, kun dannende et Par skraat udadrettede, stumpt koniske Fortsatser, uden det mindste Spor af Pigmet eller Synselementer. Ved den stumpt tilrundede Ende, der ikke rækker ud over Rygskjoldets Sidekanter, findes fortil et lidet tandformigt Fremspring.

1ste Par Føleres Skaft (*ibid.*) er temmelig kraftigt bygget, cylindriskt og omtrent af samme Længde som Rygskjoldets Brede fortil. Af dets 3 Led er 1ste og sidste omtrent lige store, medens det 2det er ganske kort.

Svøberne var vistnok paa begge Exemplarer incomplette; men efter det bevarede basale Parti lader sig dog slutte, at de har været af temmelig betydelig Længde.

2det Par Føleres Blad var paa det ene større Exemplar (Pl. V, Fig. 13) paa begge Sider defect, idet den ydre Del var afbrukket. Derimod var det paa det andet mindre Individ (Pl. XX, Fig. 18) uskadt og forsynet med

and divided into 7 or 8 short articulations, densely beset with bristles. Telson well-nigh quadrate, but very little longer than broad, armed in the posterior half with small marginal denticles; posterior incision broad, angular, with the edges finely serrate; the terminal lobes pointed and armed with a single apical spine. Inner plate of outer caudal appendages shorter than outer, and, along the inner margin, closely dentate beneath the bristles. Whole body translucent, and whitish, without any trace of pigment.

Locality. — Stats. 295, 297.

Remarks. — The diagnosis given in my Prodromus was worked up exclusively from the solitary specimen taken on the Expedition, in which however several systematically important parts were either entirely wanting or incomplete. Long after the close of the Expedition, and after the present Memoir had been commenced, Mr. R. Collett found in the ventricle of the remarkable deep-sea fish, *Rhodichthys regina*, Coll., the remains of another specimen of the same species, in which both the antennal scales and all the feet remained intact. Hence, I have, with regard to several important points, been enabled to supplement my original characteristic of this interesting form, and on the last plate have annexed the necessary figures.

Description. — Both of the specimens secured being, as mentioned above, in a very mutilated condition, it is a matter of some difficulty to determine the general form of the body. This, however, judging from the remains found on the Expedition and by Mr. Collett, would appear to be comparatively thickset, approximating closest that in the two species of the genus *Mysideis*, G. O. Sars.

The carapax is comparatively large, and would appear to entirely cover the cephalo-thorax. Anteriorly (see Pl. V, fig. 13, and Pl. XX, fig. 18), it is much broader than the posterior division, and exhibits, anterior to the middle, a well-defined, arcuate cervical groove. The frontal part juts prominently forward, and is drawn out as a sharp-pointed, rostrum-like projection, reaching almost to the middle of the basal joint of the 1st pair of antennæ.

The eyes (*ibid.*) are in every sense rudimentary, forming merely a pair of obtuse, conical prolations, directed obliquely outward, without the slightest trace of pigment or visual elements. At the obtusely rounded extremity, which does not reach above the lateral margins of the carapax, occurs anteriorly a small dentiform projection.

The peduncle of the 1st pair of antennæ (*ibid.*) comparatively powerful in structure, cylindric, and about as long as the carapax is broad anteriorly. Of its 3 joints, the first and last are about equal in size, while the second is exceedingly short.

The flagella were in both specimens incomplete; but, judging from the basal portion, their length may be inferred to have been considerable.

The scale of the 2nd pair of antennæ was in the larger example (Pl. V, fig. 13) on either side defective, the outer portion having been broken off. In the smaller specimen (Pl. XX, fig. 18), it was wholly uninjured and

sit fuldstændige Sæt af Randbørster. Det er, som det vil sees af sidstnævnte Figur, stærkt forlænget, omtrent dobbelt saa langt som 1ste Par Føleres Skaft, lancetdannet og rundt om alle Kanter besat med lange Fjærbørster. Spidsen er stumpt tilrundet og viser en tydelig Tværsutur, hvorved et kort Endesegment er afsat.

Munddelene stemmer idethele temmelig noie overens med samme hos Slægten Mysideis.

Kindbakkernes Bevæbning er dog noget afvigende (se Pl. V. Fig. 14). Paa venstre Kindbakke findes fortil 2 tydeligt begrændsede tandede Plader, og mellem dem og Tyggeknuden er fæstet 4 tykke, bøiede og ciliérede Børster; paa høire er der derimod fortil kun en enkelt utydeligt tandet Plade, og mellem den og Tyggeknuden findes intet Spor af Børster, men kun en simpel tilrundet Fremstaaenhed. Palpen (Fig. 15) er af betydelig Størrelse og tæt børstebesat; dens 2det Led er meget stort og pladeformigt, medens sidste Led er forholdsvis kort og af oval Form.

1ste Par Kjæver (Fig. 16) har begge Grene stærkt indbøiede, forovrigt af sædvanlig Bygning.

2det Par Kjæver (Fig. 17) er forholdsvis smaa, med Basaldelen ganske kort og ligesom hos Slægten Mysideis indad kun forsynet med 2 tydelige Tyggelapper. Exognathen er af smal triangulær Form og langs sin ydre Kant besat med en Rad af stærke Fjærborster. Mesognathen er stærkt udviklet, med sidste Led meget stort og bredt, af uregelmæssig rhombisk Form og langs den ydre Kant forsynet med en Rad af 8—10 ciliérede Børster.

De to Par Kjævefødder (Fig. 18 og 19) er begge kraftigt udviklede og af temmelig ens Bygning, skjøndt 2det Par (Fig. 19) er adskilligt større end 1ste. Leddene er mere eller mindre pladeformigt udvidede og i den indre Kant tæt børstebesatte. Sidste Led er paa begge Par af oval Form og bevæbnet med talrige ciliérede Torner, hvoraf den fra Spidsen udgaaende, der forestiller Endekloen, er noget kraftigere udviklet end de øvrige og ganske glat. Epignathen paa 1ste Par (ikke fremstillet paa Figuren) er lancetdannet og længere end Basaldelen.

Fødderne (Pl. XX, Fig. 19) er i Modsætning til hvad Tilfældet er hos Slægten Mysideis temmelig svagt byggede og alle omtrent af ens Længde. 4de Led er noget længere end 3die og langs den indre Kant besat med talrige Børster, hvoraf de yderste er særdeles lange og lige fortilrettede. Det ydre Afsnit af Foden er omtrent af foregaaende Leds Længde og sammensat af ikke mindre end 8—9 korte, med tætte Børsteknipper besatte Led. Det 1ste af disse er størst, medens det sidste, der egentlig forestiller Basalafsnittet af den ufuldkomment udviklede Endeklo, er meget lidet og af konisk Form, endende med 3 tynde Børster. Svømmegrenen er overordentlig stærkt forlænget og smækker, selv betydelig længere end selve Fodens Stamme. Dens

furnished with a perfect set of marginal bristles. It is, as will appear from the last-mentioned figure, greatly produced, about twice as long as the peduncle of the 1st pair of antennæ, lanceolate, and everywhere beset round the margins with long, plumose bristles. The point is obtusely rounded, and exhibits a distinct transverse suture, marking off a short terminal segment.

The oral appendages agree on the whole rather closely with those in the genus Mysideis.

The armature of the mandibles exhibits however a somewhat different appearance (see Pl. V. fig. 14). On the left mandible occur anteriorly 2 well-defined dentate plates, between which and the molar protuberance are attached 4 thick, curved, and ciliated bristles, whereas on the right mandible is seen anteriorly but a single, indistinctly dentate plate, between which and the molar protuberance not a trace of bristles can be detected — merely a simple, rounded prominence. The palp (fig. 15) is of considerable size, and densely beset with bristles; its 2nd joint is very large, and lamelliform, while the last joint is comparatively short, and oval.

The 1st pair of maxillæ (fig. 16) have both branches very considerably incurved, for the rest exhibiting the usual structure.

The 2nd pair of maxillæ (fig. 17) are comparatively small, with the basal portion exceedingly short, and, as in the genus Mysideis, furnished with but 2 distinct masticatory lobules. The exognath is slender-triangular in form, and armed along its outer margin with a series of strong, plumose bristles. The mesognath is powerfully developed, with the last joint very large and broad, of an irregular-rhomboidal form, and furnished along the outer margin with a row of 8—10 ciliated bristles.

The two pairs of maxillipeds (figs. 18, 19) are both powerfully developed, and much the same in structure, though the 2nd pair (fig. 19) occur somewhat larger than the 1st. The joints are all more or less lamelliform, and densely beset with bristles along the inner margin. In both pairs, the last joint is oval in form, and armed with numerous ciliated spines, that proceeding from the point, which represents the terminal claw, being a trifle more powerfully developed than the others, and quite smooth. The epignath (not represented in the figure), occurring on the 1st pair, is lanceolate, and longer than the basal portion.

The legs (Pl. XX, fig. 19), contrary to what is the case in the genus Mysideis, are comparatively feeble in structure, and all of well-nigh equal length. The 4th joint is somewhat longer than the 3rd, and beset along the inner margin with numerous bristles, of which the outermost are exceedingly long, and directed straight forward. The outer section of the leg has about the same length as the preceding joint, and is composed of not less than 8 or 9 short articulations, beset with dense fascicles of bristles. The 1st of these is the largest, while the last, which, strictly, represents the basal section of the imperfectly developed terminal claw, is very small, and of a conical form, ending in 3 slender bristles. The natatory branch is remarkably

Basaldel er ganske smal og Endedelen sammensat af 12 med lange Svømmeborster forsynede Led.

Bagkropslemmerne er af den for Hunnerne af denne Familie sædvanlige rudimentære Beskaffenhed, kun dannende lancetformige, med fint ciliérede Borster besatte ubevægelige Plader.

Det midterste Halevedhæng (Pl. V. Fig. 20) er af et meget eiendommeligt Udseende og uligt samme hos de øvrige bekjendte Mysider. Det er ganske kort, pladeformigt og næsten qvadratiskt, kun ubetydeligt afsmalnende mod Enden, der i Midten er dybt indskaaret. Indsnittet, der omtrent indtager $^1/_3$ af Vedhængets Længde, er vinkelformigt, med Kanterne næsten lige, stærkt divergerende og i hele sin Længde fint sangtakkede. Paa Spidsen af enhver af de triangulære Endefliger staar en enkelt Torn og foran denne er til Sidekanterne fæstet en Rad af 8—12 meget smaa Torner, der dog kun naar omtrent til Midten af Vedhængets Længde.

De ydre Halevedhæng (Fig. 21) har Endepladerne temmelig store, af lancetdannet Form og rundt om besatte med de sædvanlige Randborster. Den indre Plade er noget kortere og smalere end den ydre og viser ved Basis kun en yderlig svag Antydning til det sædvanligt her forekommende Horeapparat. Dens indre Kant er under Randborsterne næsten i sin hele Længde forsynet med en Rad af korte Torner.

Paa det under vor Expedition erholdte Individ var hele Legemet gjennemsigtigt, af hvidagtig Farve og uden det mindste Spor af nogen Pigmentering.

Længden af det største af de to foreliggende Exemplarer synes at have været omkring 35^{mm}; men det var endnu ikke forsynet med tydeligt udviklede Æggeplader og kan derfor heller ikke antages at have naaet sin fulde Størrelse.

Forekomst og Udbredning. Af denne mærkelige Myside blev et enkelt Exemplar under Expeditionens sidste Togt optaget ved Hjælp af Trawlnettet fra det enorme Dyb af 1110 Favne i Havet NV af Finmarken (Stat. 295). Det andet mindre Exemplar blev, som ovenfor anført, fundet af R. Collett i Ventrikelen af Rhodichthys regina, der optoges paa den længere vestlig beliggende Stat. 297 fra et endnu større Dyb, nemlig 1280 Favne. Ogsaa dette Exemplar var selvfølgeligt incomplet, men viste dog de forskjellige Kropsvedhæng bedre vedligeholdte end hos det andet.

At denne Myside er en i ganske særlig Grad udpræget Dybvandsform, fremgaar ikke blot af Findestederne, men ogsaa af flere Punkter i dens Organisation, navnlig de fuldkommen rudimentære Øine, de tynde Integumenter og Mangelen af Pigmentering. Da begge Stationer tilhører den kolde Area, maa den desuden antages for at være en ægte arktisk Form, der rimeligvis er udbredt over hele det dybe Havbasin i Nordhavet.

elongated, being considerably longer than even the stem of the leg itself. Its basal part is rather slender, the terminal portion consisting of 12 articulations, furnished with long natatory bristles.

The abdominal limbs exhibit the usual rudimentary character observed in the females of this family, forming merely small, lanceolate, immobile plates, beset with delicately ciliated bristles.

The telson (Pl. V, fig. 20) presents a very peculiar appearance, unlike that exhibited in any other known Mysidian. It is exceedingly short, lamelliform, and almost quadrate, tapering but slightly toward the extremity, which, in the middle, appears deeply incised. The incision, which ocupies about one-third of the length of the appendage, is angular in form, with the margins almost straight, very considerably diverging, and, throughout their entire length, finely serrate. From the point of each of the triangular terminal lobes, springs a single spine, anterior to which are attached along the lateral margins a row of 8—12 very small denticles, reaching only however to about the middle of the appendage.

The outer caudal appendages (fig. 21) have the terminal plates rather large, lanceolate in form, and beset round the edges with the usual marginal bristles. The inner plate is somewhat shorter and narrower than the outer, exhibiting at the base but an exceedingly faint indication of the auditory apparatus that usually occurs here. The inner border is provided beneath the marginal bristles, throughout its entire length almost, with a row of short spines.

In the specimen obtained on the Expedition, the whole body was translucent, whitish, and without the slightest trace of pigment.

The length of the largest of the two specimens examined, would appear to have reached about 35^{mm}; but as yet the animal was not furnished with distinctly developed incubatory plates, and can hardly therefore have attained its full size.

Occurrence and Distribution. — Of this remarkable Mysidian, a single specimen was taken, in the trawl, on the last cruise of the Expedition, at the enormous depth of 1110 fathoms, in the open sea, north-west of Finmark (Stat. 295). The other and smaller example was, as previously stated, found by Mr. R. Collett, in the ventricle of Rhodichthys regina, brought up at Stat. 297, lying farther west, from a still greater depth — viz. 1280 fathoms. This specimen, too, was of course defective, but had the various appendages to the body in a better state than the other.

That the Mysidian treated of here can in a special degree lay claim to the character of a true deep-sea form, appears not only from the localities where it was met with, but also from divers characteristics in its organization, viz. the wholly rudimentary eyes, the very thin integuments, and the absence of pigment. Both Stations being in the cold area, it must, moreover, be regarded as a true Arctic form, distributed in all probability throughout the whole of the deep basin of the Northern Ocean.

Gen. **Boreomysis**, G. O. Sars, 1869.

Undersøgelser over Christianiafjordens Dybvandsfauna.

10. Boreomysis nobilis. G. O. Sars, n. sp.

Boreomysis nobilis, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 2.

Artscharacteristik. Rygskjoldet fortil i Midten stærkt udbuet og gaaende ud i en horizontal, tilspidset, rostrumlignende Fortsats; de nedre forreste Sidehjørner udtrukne i Form af lancetdannede Flige. Øinene korte og tykke, næsten cirkelformige, noget affladede, neppe fremragende til Siderne, med rodbrunt Pigment. 1ste Par Foleres Skaft af et lignende Udseende som hos *B. arctica*. 2det Par Foleres Blad mere end dobbelt saa langt, stærkt afsmalnende mod Enden, næsten lancetformigt; Spidsen meget smal og skjævt afskaaret i Retningen udenfra indad, med en stærk Torn ved det ydre Hjørne. Føddernes ydre Del, foruden Endekloen, bestaaende af 3 Led, det sidste meget smalt. Bagkropslemmerne hos Hannen af samme Bygning som hos den typiske Art. Det midterste Halevedhæng aflangt-firkantet, med Sidekanterne næsten lige og, naar undtages det basale Parti, bevæbnet med talrige Torner; det bagre Indsnit af sædvanlig Form, med Kanterne grovt tandede og Sidelapperne i Spidsen stumpe. Legemet i levende Tilstand prydet med lyserodt Pigment. Længden indtil 60^{mm}.

Findested. Stat. 362.

Bemærkninger. Skjøndt særdeles nærstaaende den typiske Form, *B. arctica*, er denne nye Art dog let kjendelig fra samme ved sin usædvanlige Størrelse, det fuldkommen horizontale, ikke opadbøiede Pandehorn, de kortere og tykkere Øine og de i sin Form meget afvigende Antenneblade.

Arten foreligger kun i et enkelt Exemplar, en fuldt udviklet Han, hvoretter nedenstaaende Beskrivelse er affattet.

Beskrivelse. Kropsformen er (se Pl. V, Fig. 22, 23) temmelig slank, men kraftig og idethele meget lig samme hos de to nærstaaende Arter, *B. arctica* Kr. og *B. tridens*, G. O. Sars.

Rygskjoldet er forholdsvis stort, men viser sig dog bagtil i Midten tydeligt udrandet, saa at sidste Forkropssegment for en Del bliver ubedækket oventil. Dets forreste Parti er i Midten stærkt udbuet og udtrukket i et skarpt tilspidset, rostrumlignende Fremspring, der er fuldkommen horizontalt og rækker omtrent til Enden af 1ste Par Foleres Basalled. Fra dette Fremspring strækker sig en kort, men tydelig Kjøl bagtil, uden dog at naa Cervicalfuren. Til Siderne er de forreste Kanter af Rygskjoldet dybt udrandede og danner nedentil en tilspidset fortilrettet Flig, der ligger tæt ind til Ydersiden af 2det Par Føleres Roddel.

Gen. **Boreomysis**, G. O. Sars, 1869.

Undersøgelser over Christianiafjordens Dybvandsfauna.

10. Boreomysis nobilis, G. O. Sars, n. sp.

Boreomysis nobilis, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 2.

Specific Character. — Carapax anteriorly produced in the middle, and extending as a horizontal, pointed, rostrum-like projection; the lower and foremost lateral corners produced in the form of lanceolate lobes. Eyes short and thick, almost circular, somewhat bevelled, projecting very little, if at all, to the sides, and furnished with a reddish-brown pigment. Peduncle of 1st pair of antennæ similar in appearance to that in *B. arctica*. Scale of 2nd pair of antennæ more than twice as long, abruptly tapering towards the end, almost lanceolate; its extremity very slender, obliquely truncate, from within to without, and having a strong spine at the outer corner. Exterior portion of legs, not including the terminal claw, composed of 3 articulations, the last exceedingly slender. Abdominal limbs in male exhibiting the same structure as in the typical species. Telson oblongo-quadrate, with the lateral margins almost straight, and, saving the basal portion, armed with numerous spines; posterior incision of the usual form, with the margins coarsely dentate, and the lateral lobes obtuse. Body, in a living state, brilliantly coloured with a light-red pigment. Length reaching 60^{mm}.

Locality. — Stat. 362.

Remarks. — Though closely approaching the typical form, *B. arctica*, this new species may be easily distinguished from the latter by its unusual size, by the rostrum, which is perfectly horizontal and not bent upwards, by the shorter and thicker eyes, and by the deviating form of the antennal scales.

The species is represented as yet by a single specimen only, a fully developed male, from which the following description is given.

Description. — The body (see Pl. V, figs. 22, 23) comparatively slender, but powerful, and, on the whole, presenting considerable resemblance to that in the two approximating species, *B. arctic* Kr. and *B. tridens*, G. O. Sars.

The carapax is comparatively large, but in the middle distinctly emarginate posteriorly, so that the last segment of the cephalo-thorax is partially uncovered above. Its foremost part is very considerably produced in the middle, and drawn out as a sharp-pointed, rostrum-like projection, perfectly horizontal, and reaching about to the end of the basal joint of the 1st pair of antennæ. From this projection extends posteriorly a short but distinct keel, without however reaching the cervical groove. At the sides, the anterior borders of the carapax are deeply emarginate, forming below a pointed, anteriorly directed lobe, lying close in to the outer side of the basal portion of the 2nd pair of antennæ.

Øinene er vel udviklede, skjøndt ikke meget store og neppe fremragende til Siderne. Af Form er de meget kort pæredannede eller næsten kredsformige, noget fladtrykte og ved en smalt udlobende Stilk fæstede temmelig nær ind til hinanden. Den facetterede Del indtager oventil (se Fig. 23) kun den yderste eller marginale Zone, medens den nedentil har en større Udbredning. Pigmentet er af mork rødbrun Farve og viste paa det nys optagne Exemplar et lignende brillant guldglindsende Skjær, som er omtalt hos *Parerythrops spectabilis*.

1ste Par Foleres Skaft er af kraftig Bygning og i Henseende til Leddenes Form og indbyrdes Længdeforhold meget nær overensstemmende med samme hos *B. arctica* og *B. tridens*. Det særdeles korte knudeformige og tæt haarede Appendix ved Enden af Skaftet er ligeledes fuldstændig af samme Udseende som hos Hannen af *B. arctica*. Den ydre Svøbe har den for de 2 omtalte Arter characteristiske lamellære Udvidning ved Basis.

2det Par Foleres Blad (se Fig. 24) er af betydelig Længde, nemlig over dobbelt saa langt som 1ste Pars Skaft, men af en meget smal, næsten lancetdannet Form, med den storste Brede neppe $^1/_5$ af Længden. Det afsmalnes stærkt mod Spidsen, som, ulige hvad Tilfældet pleier at være, er skraat afskaaret i Retningen udenfra indad, med det ydre Hjorne stærkt fremragende og gaaende ud i et skarpt tandformigt Fremspring. Svøbens Skaft er forholdsvis kort, men stærkt, omtrent lig $^1/_3$ af Bladets Længde. Endedelens Længde kan ikke bestemmes, da dens ydre Parti var afbrukket, ligesom Endepartiet af begge Svøber paa 1ste Par Folere.

Fødderne stemmer i alt væsentligt fuldkommen overens med samme hos den typiske Art. Det ydre Parti (Fig. 25) bestaar ogsaa her, foruden Endekloen, af 3 tydeligt afsatte Led, hvoraf det yderste er særdeles smalt.

Bagkroppens Buglemmer (se Fig. 22) er samtlige udviklede til mægtige Svommeredskaber, der i sin Bygning stemmer nær overens med samme hos Hannen af *B. arctica*. Den indre Gren paa 1ste Par (Fig. 26) er ligesom hos denne Art uleddet og pladeformig samt i den indre Kant forsynet med en Rad af 10 Torner. Den ydre Gren paa 2det Par er betydelig stærkere forlænget end paa de ovrige Par, og dens ydre Led er istedetfor med de sædvanlige Randbørster bevæbnede med korte Torner.

Det midterste Halevedhæng (Fig. 27) er af betydelig Storrelse omtrent saa langt som de 2 sidste Bagkropssegmeter tilsammen og af den for Slægten characteristiske aflangt-firkantede Form. Det afsmalnes kun høist ubetydeligt mod Enden og har Sidekanterne næsten fuldkommen lige samt bevæbnede med et stort Antal af smaa, noget ulige udviklede Torner, der dog mangler ved det basale Parti. Enden er som hos Slægtens ovrige Arter dybt indskaaret i Midten. Indsnittet, der omtrent indtager $^1/_6$ af Vedhængets Længde, er i Bunden afrundet og dets Kanter bevæbnede med stærke, kamformigt ordnede Tænder. Ende-

The eyes are well developed, though not particularly large, and project but very little, if at all, toward the sides. In shape, they are abrupt-pyriform, or almost circular, somewhat bevelled, and attached by a slender stem comparatively close together. The cornea occupies, above, only the outermost or marginal zone (see fig. 23), whereas, below, it has greater extent. The pigment is a dark reddish-brown, that in the living specimen exhibited the brilliant golden lustre recorded as occurring in *Parerythrops spectabilis*.

The peduncle of the 1st pair of antennæ has a powerful structure, and, as regards the relative length of the joints, closely corresponds with that in *B. arctica* and *B. tridens*. Moreover, the exceedingly short, tuberculiform, and densely ciliated appendix at the extremity of the peduncle, has precisely the same appearance as that in the male of *B. arctica*. The outer flagellum exhibits the lamelliform dilatation at the base characteristic of the 2 species in question.

The scale of the 2nd pair of antennæ (see fig. 24) is of considerable length, viz. twice as long as the peduncle of the 1st pair, but very slender, almost lanceolate in form, its greatest breadth scarcely attaining one-fifth of the length. It tapers abruptly toward the point, which, unlike what usually occurs, is obliquely truncate, from without to within, and has the outer corner very considerably protending and drawn out to a sharp, dentiform projection. The peduncle of the flagellum is comparatively short, but strong, measuring in length about one-third of that of the scale. The length of the terminal portion cannot be determined, its outer part having been broken off: this was the case, too, with the terminal part of both flagella on the 1st pair of antennæ.

The legs agree perfectly in all essential characteristics with those in the typical species. The outermost portion (fig. 25) consists in this animal too, not including the terminal claw, of 3 well-defined joints, of which the last is exceedingly slender.

The abdominal limbs (see fig. 22) are all developed to powerful natatory organs, which, in structure, agree closely with those in the male of *B. arctica*. The inner branch of the 1st pair (fig. 26) is, as in that species, non-articulate and lamelliform, and has, along the inner margin, a series of 10 spines. The outer branch on the 2nd pair is much more produced than on any of the other pairs, and has, in place of the usual marginal bristles, its outer joint armed with short spines.

The telson (fig. 27) is of considerable size, about as long as the 2 last segments of the abdomen taken together, and has the oblongo-quadrate form characteristic of the genus. It tapers but very slightly toward the end, and has the lateral margins almost perfectly straight, as also furnished with a large number of small, somewhat unequally developed spines, which, however, are wanting on the basal part of the telson. The extremity appears, as in the other species of the genus, deeply incised in the middle. The incision, occupying about one-sixth of the length of the appendage, is rounded off at the bottom, and has the margins

fligerne (se Fig. 28) er i Spidsen stumpt tilrundede og her forsynede med 3 Torner, hvoraf den midterste er storrt.

De ydre Halevedhæng synes ikke at vise noget særligt udmærkende i sin Bygning. Horeapparatet i Basis af den indre Plade er som hos de ovrige Arter ufuldstændigt udviklet, idet Otolithen kun er liden og ikke incrusteret. Den ydre Plade har i Yderkanten den sædvanlige med 2 korte Torner bevæbnede Afsats; Spidsen var hos det undersogte Exemplar afbrukket paa begge Sider.

Legemet var i levende Tilstand prydet med et vakkert lyserødt Pigment, der var afsat i temmelig regelmæssige Shatteringer saavel paa Forkrop som Bagkrop. Munddelene, Fødderne og Oienstilkene var intensivt rødfarvede, og ogsaa den i den forreste Del af Kroppen gjennemskinnende kugleformige Mave viste et morkt rodligt Indhold.

Det foreliggende Exemplar har den for en Myside meget anselige Længde af 60^{mm}, maalt fra Spidsen af 2det Par Antenners Blad til Enden af Halevedhængene.

Forekomst. Det ovenfor beskrevne Exemplar blev under Expeditionens sidste Togt optaget ved Hjælp af Trawlnettet fra et Dyb af 459 Favne i Havet NV af Spitsbergen (Stat. 362), under nær 80° Brede. Stationen tilhorer den kolde Area, og Arten maa folgelig, ligesom de i det foregaaende beskrevne Mysider ansees for en arktisk Form.

armed with strong teeth, arranged in a pectinate form. The terminal lobules (see fig. 28) are obtusely rounded at the point, where they have 3 spines, of which the median is the largest.

The outer caudal appendages would not appear to have anything specially characteristic in their structure. The auditory apparatus at the base of the inner plate is, as in the other species, imperfectly developed, the otolith being but small and not incrusted. The outer plate exhibits on the exterior margin the usual projection, armed with 2 short spines; the point in the specimen examined had been broken off on both sides.

The body, in a living state, was coloured with a beautiful light-red pigment, diffused with comparative uniformity alike over the anterior and the posterior divisions of the body. The oral appendages, the legs, and the eyestalks were of a vivid red, and even the globular stomach, seen shining through the foremost part of the body, exhibited within a dark, reddish substance.

The specimen secured has, for a Mysidian, the very considerable length of 60^{mm}, measured from the point of the scale of the 2nd pair of antennæ to the extremity of the caudal appendages.

Occurrence. — The specimen treated of above was brought up in the trawl from a depth of 459 fathoms, in the open sea, north-west of Spitzbergen (Stat. 362), close to the 80th parallel of latitude. This Station being in the cold area, the species must, equally with the Mysidians previously described, be regarded as an Arctic form.

II. **Boreomysis scyphops**, G. O. Sars, n. sp.

Pl. VI).

Boreomysis scyphops, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 3.

Artscharacteristik. Rygskjoldet stort, dækkende fuldstændigt Forkroppen, fortil i Midten noget fremspringende, men uden at danne noget Pandehorn; de nedre forreste Sidehjørner stumpt tilrundede i Enden. Øinene af meget eiendommelig Form, stillede vertikalt og tæt sammen, med den ydre Flade skaalformigt indhulet, uden Spor af Pigment eller Synselementer. 1ste Par Føleres Skaft simpelt cylindriskt; den ydre Svobe ved Basis noget udvidet, uden imidlertid at danne nogen skarpt begrændset Lap. 2det Par Føleres Blad mere end dobbelt saa langt som 1ste Pars Skaft, aflangt lineært med Enden afrundet og det ydre Hjørne bevæbnet med en liden Tand. Fødderne tæt børstebesatte, med Tarsen kun sammensat af 2 Led; Svommegrenene af enorm Længde. Hannens Bagkropslemmer alle vel udviklede, med stærkt forlængede Endegrene; den indre

II. **Boreomysis scyphops**, G. O. Sars, n. sp.

(Pl. VI).

Boreomysis scyphops, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 3.

Specific Character. — Carapax large, covering the whole of the anterior division of the body, and projecting somewhat anteriorly, but without forming any rostrum; anterolateral corners obtusely rounded at the extremity. Eyes very peculiar in appearance, placed vertically and close together, calyciform, with the outer surface hollowed, and not exhibiting any trace of pigment or visual elements. Peduncle of 1st pair of antennæ simple-cylindric; outer flagellum somewhat dilated at the base, without however forming any sharply defined lobule. Scale of 2nd pair of antennæ more than twice as long as peduncle of 1st pair, oblongo-linear, with the end rounded, and having at the outer corner a small tooth. Legs densely beset with bristles, and tarsus composed of only 2 articulations; natatory branches of prodigious length. Abdominal limbs in

paa 1ste Par af samme Udseende som paa de ovrige: den ydre paa 2det Par overordentlig forlænget, med de ydre Led bevæbnede med korte Torner. Det midterste Halevedhæng bagtil noget afsmalnende, til Siderne bevæbnet med uligestore Torner; det bagre Indsnit omtrent som hos foregaaende Art. Horeapparatet i Basis af den indre Haleplade fuldstændig rudimentært. Farven ensformig lys kjodrod. Længden indtil 70^{mm}.

Findested. Stat. 295.

Bemærkninger. Nærværende interessante Myside skiller sig i flere Punkter ikke uvæsentligt fra de typiske Arter af Slægten og slutter sig, navnlig hvad Bygningen af 1ste Par Folere og Fodderne angaar, nærmere til den aberrante Art, *B. megalops* G. O. Sars. Saavel fra denne som de ovrige Arter er den, foruden ved sin kjæmpemæssige Storrelse, let kjendelig ved Øinenes mærkværdige og usædvanlige Form, hvilken Character ogsaa har givet Anledning til Artsbenævnelsen.

Beskrivelse af Hunnen. Legemets Form er (se Pl. VI, Fig. 1 og 2) noget mindre slank end hos de øvrige Arter af Slægten, idet Forkroppen næsten indtager Halvparten af Totallængden. Bagkroppen viser den sædvanlige spinkle, cylindriske Form og afsmalnes ganske svagt bagtil. Af dens Segmenter er det sidste længst, omtrent ligt de 2 foregaaende tilsammen.

Rygskjoldet er forholdsvis meget stort, saa at det ikke blot fuldstændigt dækker Forkroppen, men ogsaa bagtil for en Del skyver sig noget ud over 1ste Bagkropssegment. Dets forreste, foran Cervicalfuren beliggende Parti indtager omtrent $^1/_3$ af hele Rygskjoldets Længde og er kjendeligt bredere end Bagkroppens forreste Segment. Panderanden er i Midten noget fremspringende, uden dog at danne noget tydeligt Pandehorn, men kun en stump Vinkel. De nedre forreste Sidehjorner er noget uddragne, men i Spidsen stumpt tilrundede.

Øinene er af en høist mærkværdig Beskaffenhed og Form, idet deres ydre Flade, istedetfor at være convex er omvendt stærkt indhulet, hvorved de næsten faar en skaaldannet Form. De er fæstede temmelig nær sammen og staar verticale, med den convexe Flade indad, den concave udad. Hverken noget specifiskt Øiepigment eller nogetsomhelst Spor af Synselementer var at bemærke paa de friskt indfangede Exemplarer, og den senere Undersøgelse har ogsaa bekræftet den fuldstændige Mangel heraf.

1ste Par Foleres Skaft (Fig. 4 og 5) er, uligt hvad Tilfældet er hos de typiske Arter, simpelt cylindriskt og temmelig spinkelt, med 1ste og sidste Led omtrent lige store, 2det tydelig mindre og af fuldkommen normal Form. Af Svøberne er den ydre betydelig længere og stærkere end den indre og viser sig ved Basis noget udvidet samt her tæt besat med lange baandformige Sandseborster. Udvidningen er imidlertid ikke saa skarpt begrændset som hos de typiske Arter, men ligner mere samme hos den aberrante Form, *B. megalops*.

the male all well developed, with greatly produced terminal branches; the inner on the 1st pair of similar appearance to that on the others; the outer on the 2nd pair remarkably elongate, with the exterior articulations armed with short spines. Telson tapering slightly backward, and bearing, laterally, spines of unequal size; the posterior incision about as in the preceding species. Auditory apparatus at the base of the inner caudal plate quite rudimentary. Colour a uniform light-red. Length reaching 70^{mm}.

Locality. — Stat. 295.

Remarks. — The present interesting Mysidian differs in several respects not unessentially from the typical species of the genus, approximating closer, more particularly as regards the structure of the 1st pair of antennæ and of the legs, the aberrant form, *B. megalops* G. O. Sars. Both from this and the other species, it is, however, let alone its great size, easy to distinguish by the remarkable and unusual form of the eyes, — a character indeed on which its specific designation is founded.

Description of the Female. — Form of the body (see Pl. VI, figs. 1, 2) somewhat less slender than in the other species of the genus, the cephalo-thorax measuring almost one-half of the total length. The abdominal division exhibits the usual slender, cylindric form, tapering but very slightly backward. Of its segments, the last is the longest, about equal in length to both the preceding ones taken together.

The carapax is comparatively very large, covering not only the whole of the anterior division of the body, but also jutting out a little posteriorly over the 1st abdominal segment. Its foremost part, anterior to the cervical groove, measures about one-third of the whole length of the carapax, and is obviously broader than the foremost abdominal segment. The frontal margin slightly projecting in the middle, without however forming a distinct rostrum, but merely an obtuse angle. The antero-lateral corners are somewhat produced, but obtusely rounded at the point.

The eyes are very remarkable, alike in character and form, their outer surface being, instead of convex, considerably hollowed, which gives them a well-nigh calyciform appearance. They are attached comparatively close together, in a vertical position, with the convex surface turning in and the concave out. Of any specific ocular pigment, or indeed of any visual elements whatsoever, no trace could be detected in the recently taken specimens; and subsequent examination has fully confirmed the absolute want of such.

The peduncle of the 1st pair of antennæ (figs. 4, 5), unlike what is observed in the typical species, is simple-cylindric, and somewhat slender, with the first and last joints about equal in size, the second considerably smaller, and perfectly normal in form. Of the flagella, the outer is much longer and more powerful than the inner, as also somewhat dilated at the base, where it exhibits a dense armature of long, riband-shaped sensory bristles. The dilatation, however, is less sharply defined than in the typical species; it has greater resemblance to that in the aberrant form, *B. megalops*.

2det Par Foleres Blad (Fig. 6) er af betydelig Størrelse, mere end dobbelt saa langt som 1ste Pars Skaft, og af aflang lineær Form, omtrent 5 Gange længere end bredt. Det afsmalnes ganske svagt mod Enden, der er stumpt tilrundet, med det ydre Hjørne noget fremspringende og forsynet med et kort tandformigt Fremspring. Svøbens Skaft er omtrent halvt saa langt som Bladet, smalt cylindriskt, med 2det Led længst. Endedelen er stærkt forlænget og omtrent af hele Legemets Længde.

Munddelene viser idethele den for Slægten typiske Bygning.

Overlæben (Fig. 7, *L*) er af den sædvanlige, noget hjelmdannede Form.

Underlæben *(ibid. l)* er kloftet i to tungeformige, i Spidsen jevnt tilrundede og navnlig langs den indre Kant tæt cilierede Lapper.

Kindbakkerne *(ibid. M)* er kraftigt udviklede og har den mod Munden vendte Ende oxeformigt udvidet samt noget ulige i sin Bevæbning paa høire og venstre Side (se Fig. 9). Paa venstre Kindbakke findes fortil to tydelige, hinanden delvis dækkende grovt tandede Plader, og mellem disse og den skraat afskaarne Tyggeknude er fæstet 7 tykke og boiede, i den ene Kant fint cilierede Børster. Paa høire Kindbakke kan fortil ligeledes adskilles to tandbærende Grene; men de er her, navnlig den bagre, forholdsvis mindre og ikke saa grovt tandede. Mellem disse og Tyggeknuden bemærkes et afrundet Fremspring, der langs Kanten er besat med et stort Antal af fine, bagtil i Længde tiltagende Torner. Palpen (Fig. 7, *p*) er forholdsvis temmelig stor, med 2det Led pladeformigt og noget vredent, sidste Led, som hos Slægtens øvrige Arter, ganske smalt, næsten lineært.

1ste Par Kjæver (Fig. 10) viser intet udmærkende i sin Bygning; kun er de paa Enden af den større Gren fæstede Torner usædvanlig korte og tandformige.

2det Par Kjæver (Fig. 11) er forholdsvis stærkt udviklede, med Basaldelen af betydelig Størrelse og indad dannende en noget buet og tilskjærpet Kant, der er besat med en regelmæssig Rad af lange tynde Børster. Tyggelapperne er tilstede i det normale Antal (3) og tæt sammentrængte ved det indre Hjørne af Basaldelen. Exognathen er af smal elliptisk Form og langs den ydre Kant besat med talrige tæt cilierede Børster. Mesognathens sidste Led er stærkt indadbøiet, aflangt ovalt og rundt om tæt børstebesat; de i den ydre Kant fæstede Børster er delvis ligesom hos den typiske Art noget tilbagebøiede og sparsomt cilierede.

1ste Par Kjævefødder (Fig. 12) har Basaldelen omtrent af samme Længde som den øvrige Del af Stammen samt indad forsynet med en smal, tungedannet Tyggelap. Sidste Led er kegleformigt tilspidset og ender med en kort, men tydelig Klo. Exognathen er her ligesom paa følgende

The scale of the 2nd pair of antennæ (fig. 6) is of considerable size, more than twice the length of the peduncle of the 1st pair, and oblongo-linear in form, its length exceeding about 5 times its breadth. It tapers very slightly toward the end, which is obtusely rounded, with the outer corner somewhat projecting, and furnished with a short, dentiform process. The peduncle of the flagellum, slender-cylindric, has about half the length of the scale, with the 2nd joint longest. The terminal portion is greatly produced, equalling about the whole body in length.

The oral appendages exhibit on the whole the typical structure of the genus.

The labrum (fig. 7 *L*) has the usual somewhat galeate form.

The labium *(ibid. l)* is cleft into two linguiform lobules, uniformly rounded at the point, and, more particularly along the inner margin, densely ciliated.

The mandibles *(ibid. M)* are powerfully developed, with the extremity directed toward the mouth securiform-dilated, and differ somewhat in their armature on the right and left sides (see fig. 9). On the left mandible, occur anteriorly two distinct, coarsely dentate plates, the one partially overlapping the other; and between these plates and the obliquely truncate molar protuberance are attached 7 thick and curving bristles, along one side finely ciliated. On the right mandible, anteriorly, two dentiferous branches can likewise be distinguished; but these, in particular the posterior one, are comparatively smaller and less coarsely dentate. Between the branches and the molar protuberance is seen a rounded projection, beset along the margin with a large number of slender spines, increasing in length posteriorly. The palp (fig. 7, *p*) is comparatively large, with the 2nd joint lamelliform and somewhat twisted, the last being, as in the other species of the genus, quite slender, almost linear.

The 1st pair of maxillæ (fig. 10) exhibit nothing characteristic in their structure, saving only that the spines attached to the extremity of the larger branch are unusually short, and dentiform.

The 2nd pair of maxillæ (fig. 11) are comparatively well developed, with the basal portion of considerable size, and forming, inwards, a somewhat arched and sharp edge, furnished with a regular series of long and slender bristles. The masticatory lobes are present in the usual number (3), and placed close together at the inner corner of the basal part. The exognath is slender-elliptic in form, and armed along the outer margin with numerous closely ciliated bristles. The last joint of the mesognath is greatly incurved, oblongo-oval, and densely bristle-beset round the edges; the bristles attached to the outer margin curve, as in the typical species, somewhat backward, and are but sparingly ciliated.

The 1st pair of maxillipeds (fig. 12) have the basal part about of the same length as the remaining section of the stem, and, inwards, are provided with a slender, linguiform masticatory lobe. The last joint is conically pointed, and terminates in a short, but distinctly developed claw.

Par enormt forlænget, over dobbelt saa lang som selve Stammen, med Endedelen sammensat af et stort Antal af korte Led. Epignathen er smalt lancetformig og omtrent af Basaldelens Længde.

2det Par Kjævefødder (Fig. 13) er kraftigt udviklede, mere end dobbelt saa lange som 1ste Par og mangler som sædvanligt Epignath, hvorimod Exognathen er af samme Udseende som paa foregaaende Par. Af Stammens Led er det 4de længst. 5te Led, der sædvanlig med foregaaende danner en stærk knæformig Boining, er noget fortykket i Enden og her tæt børstebesat. Sidste Led er særdeles lidet og meget bevægeligt forbundet med det foregaaende, saa at det kan slaaes ind mod en tilsvarende Udrandning i den indre Kant af dette (se Fig. 14). Det har foruden en hel Del finere Børster paa hver Side en Rad af korte ciliérede Torner. Selve Spidsen indtages af en noget større uciliéret Torn, der forestiller den rudimentære Endeklo.

Fødderne (Fig. 15) viser den for Slægten characteristiske spinkle Form og er navnlig i den indre Kant forsynede med talrige lange og tynde Børster. Det stærkt forlængede 4de Led har paa 1ste Par ved Enden i det ydre Hjørne et Knippe af lange fortilrettede Fjærborster, der mangler paa de øvrige Par. Endedelen er (paa de forreste Par) betydelig kortere end 4de Led og bestaar ligesom hos *B. megalops* kun af 2 Led, foruden Endekloen. Svømmegrenen (Exopoditen) svarer i sin Bygning fuldkommen til Exognathen paa Kjævefødderne og er som denne ualmindelig stærkt forlænget, med Endedelen sammensat af indtil 36 Led.

Brystposen eller Marsupium, der paa et Par af de erholdte Exemplarer var stærkt udviklet (se Fig. 2), er som hos de øvrige Arter af denne Slægt sammensat af ikke mindre end 7 Par tydelige Plader, der udgaar fra Basis af samtlige Fødder samt sidste Kjævefodpar, hvorfor den ogsaa indtager Størsteparten af Forkroppens Ventralside. De forreste af disse Plader (se Fig. 13 og 15) er smalt tungeformige, de øvrige bliver bagtil successivt større og mere lancetdannede.

Bagkroppens Buglemmer (Fig. 16) er af den sædvanlige rudimentære Beskaffenhed, kun dannende smaa enkle, i den ene Kant med stærke Fjærborster forsynede tilspidsede Plader.

Det midterste Halevedhæng (Fig. 17) er temmelig stort, pladeformigt og af aflang Form, med den ydre Del noget afsmalnende. Dets Sidekanter er ganske svagt buede og, naar undtages det basale Parti, tæt besat med Torner, der er af meget ulige Størrelse og saaledes grupperede, at der mellem to længere altid findes et vist Antal (6—8) kortere. Enden er som sædvanligt i Midten dybt indskaaret. Indsnittet, der omtrent indtager $^1/_5$ af Vedhængets Længde, er fortil ganske smalt, dog afrundet i Bunden, og har Kanterne besatte med kamformigt ordnede Tænder. Endefligerne (Fig. 18) er stumpt koniske og ved Spidsen forsynede med 3 omtrent ligestore Torner.

Here, as in the succeeding pairs, the exognath is quite unusually produced, being more than twice as long as the stem itself, and has the terminal section composed of a large number of short articulations. The epignath is slender-lanceolate, and about of the same length as the basal part.

The 2nd pair of maxillipeds (fig. 13) are powerfully developed, more than twice as long as the 1st pair, and as usual without any epignath. Of the joints of the stem, the 4th is the longest. The 5th joint, which, along with the preceding, usually forms a strong, geniculate curve, is somewhat inspissated at the extremity, and there densely beset with bristles. The last joint is exceedingly small, and very flexibly connected with the preceding, in such manner, that it admits of being bent in toward a corresponding emargination on the inner border of the latter (see fig. 14). It has, exclusive of a great many slender bristles, on either side a series of short ciliated spines. The point itself bears a somewhat larger, naked spine, that represents the rudimentary terminal claw.

The legs (fig. 15) exhibit the slender form characteristic of the genus, and are furnished, more particularly along the inner margin, with numerous long and slender bristles. The very elongate 4th joint has on the first pair, at the extremity, in the outer corner, a fascicle of long, anteriorly directed, plumose bristles, wanting in the other pairs. The terminal part (on the foremost pairs) is considerably shorter than the 4th joint, and consists, as in *B. megalops*, of 2 articulations only, besides the terminal claw. The natatory branch (the exopodite) corresponds in its structure perfectly with the exognath on the maxillipeds, and is, like that, greatly produced, the terminal part being composed of as many as 36 articulations.

The marsupium, or incubatory pouch which, in one or two of the specimens collected, was greatly developed (see fig. 2), is, as in the other species of this genus, composed of not less than 7 pairs of distinctly defined plates, proceeding from the base of the legs and of the last pair of maxillipeds; and hence it occupies the greater part of the ventral face of the anterior division of the body. The foremost of these plates (see figs. 13, 15) are narrow-linguiform, the others become successively larger posteriorly and more lanceolate in shape.

The abdominal limbs (fig. 16) have the usual rudimentary character, forming merely small, simple, pointed plates, furnished along one of the margins with strong, plumose bristles.

The telson (fig. 17) comparatively large, oblongo-lamellar in form, with the outer part somewhat tapering. Its lateral margins are very slightly arched, and, saving the basal part, densely beset with spines, very unequal in size, and so disposed that a certain number (6—8) of shorter always occur between two longer ones. The extremity is, as usual, deeply cleft in the middle. The incision, measuring about one-fifth of the length of the appendage, is quite narrow anteriorly, but rounded at the bottom, and has the margins beset with teeth, in a pectinate arrangement. The terminal lobes (fig. 18) are obtusely conical, and furnished at the point with 3 spines, about equal in size.

De ydre Halevedhæng (Fig. 19) har Endepladerne temmelig store og brede. Den indre er omtrent $^1/_4$ kortere end den ydre og lancetformig tilspidset samt viser ved Basis kun en yderst svag, neppe mærkelig Antydning til det for Familien characteristiske Horeapparat. Den ydre Plade er af aflang oval Form og viser i den ydre Kant nærmere Basis en liden med to Torner bevæbnet Afsats; foran denne er den ydre Kant ganske glat, medens disse Plader forøvrigt er rundtom børstebesatte.

Hannen (Fig. 3) er adskilligt større og kraftigere bygget end Hunnen og desuden let kjendeligt fra samme ved de tydeligt udprægede secundære Kjønscharacterer.

1ste Par Foleres Skaft (se fig. 20) er saaledes betydelig tykkere og har ved Enden under Svøberne det sædvanlige haarede Appendix, der dog her er særdeles kort, knudeformigt og næsten ganske skjult af eller ligesom indsænket i en fra Skaftet udgaaende Hudduplicatur.

Svømmegrenene paa Kjævefødderne og de egentlige Fødder er (se Fig. 3) forholdsvis endnu stærkere udviklede end hos Hunnen, med Basaldelen bredere og stærkere muskulos.

Ved Basis af sidste Fodpar bemærkes de ydre Kjønsvedhæng i Form af to cylindriske, noget fortil krummede og i Spidsen med stive Børster besatte Lapper.

Bagkroppen er forholdsvis kraftigere bygget end hos Hunnen, og dens Buglemmer samtlige udviklede til mægtige Svømmeredskaber, med bred muskulos Basaldel og særdeles lange, mangeleddede Endegrene. Den indre Gren er her paa alle Par, ogsaa paa 1ste (Fig. 21), af ens Udseende. Den er kjendeligt kortere end den ydre og danner ved Basis en oval, med nogle faa fine Børster besat pladeformig Udvidning. Den ydre Gren paa 2det Par (Fig. 22) er af enorm Længde og delt i ikke mindre end 38 Led, hvoraf de ydre, istedetfor Fjærborster, er forsynede med korte simple Torner.

Farven saavel af Han som Hun er i levende Tilstand temmelig uniform lyserød eller kjødrød. Da imidlertid Legemet er temmelig gjennemsigtigt, skinner enkelte af de indre Dele og navnlig den store med mørkerødt Indhold fyldte Mave, igjennem Integumenterne.

Nærværende Art opnaar en for en Mysside colossal Størrelse, idet Hunnen har en Længde af 64^{mm}, medens Hannen bliver endnu adskilligt længere, nemlig indtil 70^{mm}.

Forekomst. Fem mere eller mindre fuldstændige Exemplarer af denne mærkelige Form blev under Expeditionens sidste Togt optaget ved Hjælp af Trawlnettet fra det enorme Dyb af 1110 Favne i Havet NV. af Finmarken (Stat. 295), og i det selvsamme overordentlig righoldige Kast, der blandt mange andre interessante Ting ogsaa bragte op det i det foregaaende omtalte Exemplar af den eiendommelige Mysideform, *Pseudomysis abyssi*, ligesom ogsaa de 4 pragtfulde Exemplarer af *Bythocaris leucopis*.

The outer caudal appendages (fig. 19) have the terminal plates comparatively large and broad. The inner is about one-fourth shorter than the outer, and lanceolate, exhibiting at the base an exceedingly faint, scarcely perceptible indication of the auditory apparatus distinguishing the family. The outer plate is oblongo-oval in form, and bears on the outer margin, near the base, a small shelf, armed with two spines; anterior to this shelf, the outer margin is quite smooth, whereas the plates are elsewhere beset with bristles round the edges.

The *male* (fig. 3) is considerably larger and more powerful in structure than the female, and, moreover, may be readily distinguished from the latter by reason of its prominent secondary sexual characters.

Thus, the peduncle of the 1st pair of antennæ (see fig. 20) is considerably thicker, and has at the extremity the usual hirsute appendix, which, however, is exceedingly short, tuberculiform, and almost entirely concealed by, or rather sunk into, a thick integumental duplicature issuing from the peduncle.

The natatory branches on the maxillipeds and the true legs (see fig. 3) exhibit comparatively a still more powerful development than in the female, having the basal part broader and more prominently muscular.

At the base of the last pair of legs, are seen the outer sexual appendages, having the form of two cylindrical, somewhat anteriorly curved lobes, armed at the point with stiff bristles.

The posterior division of the body is comparatively more robust in structure than in the female, and has all of its limbs developed as powerful natatory organs, with a broad, muscular basal part and exceedingly long, multiarticulate terminal branches. The inner branch on all the pairs, also the 1st (fig. 21), is uniform in appearance. It is appreciably shorter than the outer, and exhibits at the base an oval, lamelliform dilatation, beset with a few slender bristles. The outer branch on the 2nd pair (fig. 22) is of prodigious length, and divided into not less than 38 articulations, of which the outer, instead of having plumose bristles, are furnished with short, simple spines.

The colour, both of the male and female, in a living state, is a comparatively uniform light-red, or pink. The body, however, being well-nigh translucent, some few of the inner parts, and more especially the large stomach, filled with a dark-red substance, are seen shining through the integuments.

The present species attains, for a Mysidian, a colossal size, the female reaching a length of 64^{mm}, while the male has a still greater, viz. 70^{mm}.

Occurrence. — Five more or less perfect specimens of this striking form came up in the trawl, on the last cruise of the Expedition, from the prodigious depth of 1110 fathoms, in the open sea, north-west of Finmark (Stat. 295), and in the same remarkably rich haul that, among other interesting objects, also brought to light the previously recorded specimen of the characteristic Mysidian, *Pseudomysis abyssi*, along with 4 magnificent specimens of *Bythocaris leucopis*.

Som disse er nærværende Mysside en udpræget Dybvandsform, hvad der allerede paa Forhaand tydeligt nok fremgaar af Øinenes rudimentære Beskaffenhed, og da den ovenomtalte Station tilhører den kolde Area, er den endvidere at betragte som en ægte høinordisk eller arktisk Form.

Like these animals, the present Mysidian is a prominent deep-sea form, which appears at a glance from the rudimentary character of the eyes; and the above-mentioned Station having been in the cold area, it must, moreover, be regarded as a true Arctic species.

Ordo Cumacea.

Fam. Diastylidæ.

Gen. **Diastylis**, Say.

Transactions of the Philadelphia Philosophical Society.

12. Diastylis nodosa, G. O. Sars, n. sp.

(Pl. VII, Fig. 1—4).

Diastylis nodosa, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 51.

Artscharacteristic. Rygskjoldet stort og opsvulmet, bagtil høit hvælvet, fortil nedadskraanende, uden Haar eller Pigge, men forsynet med et Antal af større afrundede, glatte og glindsende Knuder, hvoraf 8 til hver Side danner en horizontal buet Række, der begrændser et noget affladet dorsalt Felt. Rostrum af middelmaadig Længde, horizontalt med Sidekanterne tandede. De frie Forkropssegmenter næsten ganske glatte; det sidste med en enkelt opret Torn i Midten og Sidehjørnerne noget koniskt uddragne. De 2 forreste Bagkropssegmenter ovenfil ved den bagre Rand bevæbnede med 2 parvis ordnede Torner, de 2 følgende kun med en enkelt saadan, de 2 sidste med en median Række af Torner. Øiet ikke synligt. 1ste Par Føleres Skaft overragende Rostrum, Svøberne meget korte. 1ste Fodpar med de ydre Led tynde og forlængede; sidste Led kortere end det foregaaende. Det midterste Halevedhæng stærkt forlænget, med 9 Par Sidetorner. De ydre Halevedhæng kun lidet længere end det midterste, med Endegrenene korte og omtrent af ens Længde, den indre 3leddet med 10 Torner i den indre Kant og Spidsen dolkformigt udtrukken. Farven blegt kjodrød. Længden indtil 18^{mm}.

Findested. Stat. 357.

Bemærkninger. Den her omhandlede nye Art slutter sig i flere Henseender meget nær til den af Heller fra den Østerrigsk-Ungarske Nordpolexpedition beskrevne *D. spinulosa,* men skiller sig strax ved Mangelen af de talrige spidse Torner, hvormed saavel Rygskjoldet som de frie Forkropssegmenter hos denne sidste Art er bevæbnet. Det eneste

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Diastylis nodosa, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 51.

Specific Character. — Carapax large, posteriorly high and arched, anteriorly shelving downward, without either hairs or spikes, but having a number of large, rounded, smooth, and shining prominences, of which 8 on either side form a horizontal, arcuate series, bounding a somewhat applanated dorsal tract. Rostrum of moderate size, horizontal, with the lateral margins dentate. Free segments of the anterior division of the body almost quite smooth; the last having a single perpendicular spine in the middle, and with the lateral corners somewhat conically produced. The two anterior segments of the posterior division of the body armed above, on the posterior margin, with 2 spines, arranged in pairs; the 2 succeeding with but a single spine, the 2 last with a median row of spines. Eye not visible. Peduncle of 1st pair of antennæ projecting over the rostrum, flagella exceedingly short. First pair of legs having the outer joints slender and produced; the last joint shorter than the preceding. Telson greatly produced, with 9 pairs of lateral spines. Outer caudal appendages but little longer than telson, with the terminal branches short, and well-nigh uniform in length, the inner one three-jointed, with 10 spines along the inner margin, and having the point dagger-shaped and elongate. Colour a light-red, or pink. Length reaching 18^{mm}.

Locality. — Stat. 357.

Remarks. — The species treated of here approximates in several respects very closely *D. spinulosa.* — from the Austrio-Hungarian Expedition, — described by Heller, but is at once distinguished by its wanting the numerous acute spines with which, in the latter form, both the carapax and the free segments of the anterior division of the body

foreliggende Exemplar er vistnok en Han, medens det til Grund for Hellers Beskrivelse af *D. spinulosa* liggende Exemplar er en Hun; men da det nedenfor beskrevne Individ aabenbart endnu ikke er slægtsmodent udviklet, er der heller ikke nogen Grund til at antage, at Skulpturen i mærkbar Grad afviger fra samme hos Hunnen. Det er nemlig ifølge mine Undersøgelser først efter den Hudskiftning, der gaar umiddelbart forud for den slægtsmodne Tilstand, at de ofte mærkelige Forandringer i Legemets Form og Skulptur hos Cumacehannerne optræder, der tidligere har givet Anledning til Opstillelsen af flere nominelle saavel Arter som Slægter. Jeg kan derfor heller ikke tvivle om, at de for nærværende Art fra Skulpturen hentede Distinctionscharacterer er af virkelig specifisk Vægt ligeoverfor Hellers Art.

Beskrivelse. Legemets Form er (se Pl. VII. Fig. 1 og 2) temmelig undersætsig, med stærkt opsvulmet ægformig Forkrop og spinkel Bagkrop. Den sidste er, naar Halevedhængene fraregnes, noget kortere end den første.

Integumenterne er særdeles haarde og stærkt incrusterede med Kalk, samt, naar afsees fra Lemmerne, næsten ganske nøgne, uden Haar.

Rygskjoldet er af særdeles betydelig Størrelse, over dobbelt saa langt som de frie Forkropssegmenter tilsammen og ogsaa betydelig bredere end disse, med Gjelleregionerne stærkt opsvulmede. Seet fra Siden (Fig. 2) viser det sig bagtil høit hvælvet eller ligesom puklet, fortil jevnt nedadskraanende mod det saakaldte Rostrum og her ligesom indtrykt i Midten. Frontallappen viser (se Fig. 1) den sædvanlige, noget klokkedannede Form og har langs ad Midten en utydelig Kjøl. Det foran samme fremskydende, af de 2 i Midtlinien sammenstødende Sidelliger dannede Fremspring, der kun høist uegentligt kan benævnes Pandehorn eller Rostrum, indtager omtrent $^1/_5$ af Rygskjoldets Længde og er koniskt tilspidset samt horizontalt, med Sidekanterne grovt tandede. Nedenunder det saakaldte Pandehorn danner de frie nedre Kanter af Rygskjoldet (se Fig. 2) et stumpt tandet Hjørne og har længere bagtil et stærkt bugtet Forløb, med en stærk Bøining omtrent paa Midten.

Rygskjoldets Overflade viser overalt en meget iøinefaldende Skulptur i Form af talrige smaa Gruber, der giver den et elegant spættet Udseende. Desforuden bemærkes nærmere den dorsale Flade et Antal af symetriske gruppererede større knudeformige Fremspring, der er af stumpt tilrundet Form og ligesom polerede. Man tæller ialt omtrent 32 saadanne, hvoraf dog nogle er mindre tydelige. Mest iøinefaldende er til hver Side 8 større Knuder, der danner en nogenlunde regelmæssig horizontal og noget buet Række strækkende sig fra det saakaldte Pandehorn og bagover indtil det mest ophøiede Parti af Rygskjoldet. Begge disse Knuderækker begrændser tilsammen et noget fordybet ovalt Felt, der forstørstedelen repræsenterer den saakaldte Maveregion; bagenfor dette staar desuden til hver Side 2 ligeledes tydeligt markerede Knuder, dannende sammen en regulær Firkant (se Fig. 1).

are furnished. The only example secured is, indeed, a male, whereas the specimen from which Heller worked out his description of *D. spinulosa*, is a female; but the specimen described below being not yet sexually developed, there is no reason to infer that the sculpture should in any perceptible degree deviate from that in the female. According to my researches, it is not till after the moult, which immediately precedes the sexually mature state, that the changes, frequently so remarkable, in the form and sculpture of the body characterising the males in Cumacea actually occur, — a circumstance that has previously led to the establishment of several spurious species and genera. Hence, I am fully convinced, that, to the distinctive characters educed for the present species from its sculpture we can attach a real specific weight when comparing it with Heller's species.

Description. — The form of the body (see Pl. VII, figs. 1, 2) comparatively thickset, with the cephalo-thorax considerably swollen and ovate, and the abdomen slender. Excluding the caudal appendages, the latter is somewhat shorter than the former.

The integuments are exceedingly hard and strongly incrusted with lime, as also, apart from the limbs, almost entirely naked, and without hair.

The carapax is of very considerable size, more than twice as long as the free segments of the cephalo-thorax taken together, and also considerably broader, with the branchial regions much swollen. Viewed from the side (fig. 2), it appears, posteriorly, high and arcuate, or, as it were, hunched, anteriorly shelving down toward the so-called rostrum, and there impressed in the middle. The frontal lobe exhibits (see fig. 1) the usual, somewhat bell-shaped form, and has, extending along the middle, an indistinct carina. The process generally termed the rostrum, jutting out before the lobe, and composed of the lateral lobules that meet on the medial line, measures about one-fifth of the length of the carapax: it is conically pointed and horizontal, with the lateral margins coarsely dentate. Underneath this rostriform projection, the free margins of the carapax (see fig. 2) form an obtusely dentate corner, and somewhat farther behind are exceedingly sinuous, with a strong curve about in the middle.

The surface of the carapax exhibits everywhere a very conspicuous sculpture, with numerous small pits, giving it a curious speckled appearance. Moreover, in close proximity to the dorsal surface are seen a number of large, symmetrically disposed, tuberculiform projections, obtusely rounded in form, and, as it were, polished. In all, may be counted 32 such projections, some of which however are less distinctly developed. The most conspicuous are 8 large protuberances, on either side, constituting a comparatively regular horizontal and somewhat arched series, extending posteriorly from the so-called rostrum to the most elevated portion of the carapax. Both of these series of protuberances constitute together the boundary of a somewhat depressed oval area, representing the greater part of the so-called gastric region; posterior to this area occur, moreover, on either side, 2 distinctly marked protuberances, that form a regular square (see fig. 1).

De frie Forkropssegmenter er meget smale, næsten baandformige og saagodtsom ganske glatte. Man bemærker alene paa de 3 bagerste til hver Side et meget lidet tandformigt Fremspring og paa sidste Segment desuden i Midten en opadrettet Torn. Epimererne er noget udstaaende til Siderne og paa de 4 forreste Segmenter jevnt afrundede med delvis saugtakket Rand. Sidste Segments Epimerer er udtrukne i en kort bagtil og noget udadrettet Spids.

Bagkropssegmenterne viser den sædvanlige ligesom knudrede Form, idet de saavel oventil som nedentil er stærkt udrandede, med de bagre Sidehjørner tilspidsede og noget udstaaende. Paa ethvert af de 2 forreste Segmenter bemærkes ved den bagre Rand oventil 2 symetrisk stillede tilspidsede Torner, medens der paa de 2 følgende kun findes en enkelt saadan stillet i Midtlinien. Paa de 2 sidste Segmenter er der en median Længderad af flere (4—5) Torner. Desuden findes til Siderne ligesom nedentil nogle mindre tydelige Smaatænder. Næstsidste Segment er af alle det længste. Sidste Segment er af den sædvanlige noget fladtrykte, femkantede Form og er ovenfra seet bredere end det foregaaende.

Af noget tydeligt udviklet Øie var intet Spor at opdage paa det friskt indfangede Exemplar. Vistnok findes ved Enden af Frontallappen (se Fig. 1) den sædvanlige Øielob; men denne er ganske flad, og indenfor den sees intet Pigment eller andre Synselementer.

1ste Par Følere har Skaftet af forholdsvis kraftig Bygning og kjendeligt overragende Spidsen af det saakaldte Pandehorn. Derimod er de to Svøber særdeles korte.

2det Par Følere og Munddelene kunde ikke paa det eneste foreliggende Exemplar nøiere undersøges.

1ste Fodpar er af den sædvanlige spinkle Bygning og lige udstrakt omtrent af Forkroppens Længde. Basalleddet er temmelig stort, men noget kortere end de øvrige tilsammen, jevnt afsmalnende mod Enden og i den indre Kant grovt tandet. 4de og 5te Led er meget tynde og omtrent indbyrdes af ens Længde; sidste Led kjendeligt kortere end disse.

2det Fodpar er neppe mere end halvt saa langt, koniskt tilspidset i Enden og har de 2 ydre Led ganske korte.

De 2 følgende Fodpar er af forholdsvis robust Bygning og tæt børstebesatte.

Sidste Fodpar er betydelig mindre end disse, meget tyndt og mindre rigeligt børstebesat.

Til Basis af 3die og 4de Fodpar var hos det undersøgte Individ fæstet en ufuldkommen udviklet konisk Exopodit og til de 2 første Bagkropssegmenter et Par ligeledes ufuldkommen udviklede Buglemmer, hvoraf fremgik, at Individet var en endnu ikke slægtsmodent udviklet Han.

Det midterste Halevedhæng er stærkt forlænget, næsten af Bagkroppens halve Længde og af den sædvanlige smale,

The free segments of the cephalo-thorax are exceedingly narrow, well-nigh riband-shaped, and almost quite smooth. On the 3 posterior segments, is seen, issuing from either side, a minute dentiform projection; and on the last segment, in the middle, also an upward-directed spine. The epimera jutting a little toward the sides, and, on the 4 anterior segments, uniformly rounded, with the margin partly serrate. The epimera of the last segment are produced to a posteriorly and somewhat outward-extending point.

The abdominal segments exhibit the usual, as it were, nodulose character, being, both above and below, very considerably emarginate, with the posterior lateral corners acuminately pointed, and somewhat projecting. On each of the 2 anterior segments, are observed above, springing from the posterior margin, 2 symmetrically disposed, acute spines, whereas on the 2 succeeding ones, a single spine only occurs, in the medial line. On the 2 last segments, there is a median longitudinal row of spines (4—5), and, moreover, toward the sides, as also below, a few less distinctly developed denticles. The penultimate segment is the longest of all. The last segment has the usual somewhat depressed, pentagonal form, and, viewed from above, appears broader than the preceding.

Of a distinctly developed eye no trace could be detected in the recently taken specimen. True, the usual ocular track occurs at the extremity of the frontal lobe (see fig. 1); it is however quite flat, and within neither pigment nor any other visual element can be seen.

The peduncle of the 1st pair of antennæ is comparatively powerful in structure, and projects perceptibly over the point of the so-called rostrum. The two flagella are, on the other hand, exceedingly short.

The 2nd pair of antennæ and the oral appendages could not be accurately examined in the only specimen we succeeded in obtaining.

The 1st pair of legs have the usual slender structure, and, when fully extended, about equal the anterior division of the body in length. The basal joint is comparatively large, but somewhat shorter than the others, taken together, tapering uniformly toward the extremity, and, along the inner margin, coarsely dentate. The 4th and 5th joints are exceedingly slender, and relatively about equal in length; last joint perceptibly shorter than either of these.

The 2nd pair of legs are scarcely more than half as long as the 1st, conically pointed at the extremity, and have the 2 outer joints quite short.

The 2 succeeding pairs of legs are comparatively robust in structure, and densely beset with bristles.

The last pair of legs are considerably smaller than these, exceedingly slender, and less abundantly furnished with bristles.

To the base of the 3rd and 4th pairs of legs was attached, in the specimen examined, an imperfectly developed conical exopodite, and to the 2 first abdominal segments a pair of likewise imperfectly developed pleododa, showing the individual to have been a not yet sexually mature male.

The telson is greatly produced, almost half as long as the posterior division of the body, and of the usual

omvendt flaskedannede Form. Dets forreste Halvpart, der indeholder Endeafsnittet af Tarmen, er af cylindrisk Form, medens Endepartiet er stærkt afsmalnende og til hver Side bevæbnet med 9 smaa Torner foruden de to noget større fra Spidsen udgaaende (se fig. 3).

De ydre Halevedhæng er kun ubetydelig længere end det midterste og har Basaldelen eller Stammen særdeles tynd og forlænget samt i den indre Kant forsynet med smaa Torner. Endegrenene (se Fig. 4) er ganske korte, neppe halvt saa lange som Stammen og indbyrdes omtrent af ens Størrelse. Den indre er dolkformig og delt i 3 tydelige Led, hvoraf det 1ste er længst. Til den indre Kant af denne Gren er fæstet ialt 10 korte Torner, hvoraf 4 tilhører 1ste, 3 ethvert af de 2 følgende Led. Sidste Led gaar ud i en stærk tornformig Spids. Den ydre Gren er noget smalere end den indre og som sædvanlig 2-leddet med Basalleddet ganske kort. Endeleddet lineært og i den ydre Kant samt ved Spidsen forsynet med nogle tynde Børster.

Dyrets Farve var i levende Tilstand, navnlig paa Forkroppen, blegt kjødrod.

Længden af det erholdte Individ, maalt fra Spidsen af Pandehornet til Enden af det midterste Halevedhæng, er 18^{mm}, og Arten hører altsaa til de største af Slægten.

Forekomst og Udbredning. Det beskrevne Exemplar blev under Expeditionens sidste Togt optaget i Bundskraben fra et Dyb af 125 Favne i Havet lige i Vest for Isfjorden paa Spitsbergen.

Om Artens geografiske Udbredning kan selvfølgeligt intet med Bestemthed anføres. Dog er man ifølge Findestedets høie nordlige Brede berettiget til at antage, at den ligesom den nærstaaende *D. spinulosa* Heller, er en ægte arktisk Form.

slender, inverted bottle-shape form. Its foremost half, containing the terminal section of the intestine, is cylindric, whereas the terminal portion tapers abruptly, and, on either side, is armed with 9 small spines, exclusive of the two somewhat larger ones proceeding from the point (see fig. 3).

The outer caudal appendages are but very little longer than the telson, and have the basal part, or stem, exceedingly slender and elongate, as also furnished along the inner margin with small spines. The terminal branches (see fig. 4) are quite short, scarcely half as long as the stem, and well-nigh uniform in size. The inner is dagger-shaped, and divided into 3 distinctly defined joints, of which the first is longest. To the inner margin of this branch are attached 10 short spines, 4 of which belong to the 1st joint and 3 to each of the 2 succeeding ones. The last joint juts out as a strong, spiniform point. The outer branch is a little more slender than the inner, and, as usual, two-jointed, with the basal articulation quite short, the terminal joint linear, and furnished along the outer margin, as also at the point, with a few slender bristles.

The colour of the animal in a living state, more especially on the anterior division of the body, was a light-red, or pink.

The length of the specimen taken, measured from the tip of the rostrum to the extremity of the telson, is 18^{mm}, and the species ranks therefore among the largest of the genus.

Occurrence and Distribution. — The specimen described above was brought up in the dredge, on the last cruise of the Expedition, from a depth of 125 fathoms, in the open sea, due west of Ice Sound, Spitzbergen.

As regards the geographical distribution of the species, nothing can of course be stated with certainty. Judging, however, from the high northern latitude of the locality in which the animal was found, we are warranted in regarding it, equally with the species *D. spinulosa* Heller, as a true Arctic form.

Ordo Isopoda.

Trib. 1. Chelifera.

Fam. 1. Apseudidæ.

Gen. **Sphyrapus,** Norman. M. S.

(G. O. Sars, Revision af Gruppen Isopoda chelifera).

Slægtscharacteristik. Legemet bagtil afsmalnende med skarpt afsatte Segmenter, hos Hannen betydelig smækrere end hos Hunnen. Hovedsegmentet stort, oventil jevnt

Ordo Isopoda.

Trib. 1. Chelifera.

Fam. 1. Apseudidæ.

Gen. **Sphyrapus,** Norman. M. S.

(G. O. Sars, Revision af Gruppen Isopoda chelifera).

Generic Character. — Body tapering posteriorly, with sharply defined segments, and much more slender in the male than in the female. Cephalic segment large, uniformly arched

bevæbnet, fortil gaaende ud i en bred horizontal Pandeplade. Øienloberne tydeligt adskilte, men meget smaa, beliggende ved Hovedets ydre Hjørner. 1ste frie Forkropssegment, jevnt afrundet til Siderne og forsynet med smaa og stumpe Epimerer. Bagkroppen forholdsvis kort, med sidste Segment lidet smalere end de øvrige. 1ste Par Følere vidt adskilte, med Skaftets 1ste Led meget stort og pladeformigt, sidste Led ganske lidet. Svoberne forholdsvis korte, den ydre hos Hannen betydelig stærkere udviklet end hos Hunnen og forsynet med tætte Knipper af Sandseborster. 2det Par Følere meget tynde, simple, uden Biplade, med kort Svobe. Kindbakkerne vel udviklede, med de bag det tandede Parti fæstede Torner simple. Tyggefortsatsen smalt cylindrisk. Palpen særdeles tynd og sparsomt borstebesat. Saxfødderne med de 2 Haanden forudgaaende Led smale og hos Hannen særdeles stærkt forlængede, selve Haanden stærkt opsvulmet med lange tilspidsede Fingre: et lidet 2-leddet borstebesat Vedhæng (rudimentær Exopodit) ved Basis. Gravefødderne kraftigt byggede, uden Vedhæng ved Basis, med de ydre Led pladeformigt udvidede og bevæbnede med stærke Torner, hos Hannen enormt forlængede. Gangfødderne smækre og svagt byggede samt sparsomt borstebesatte. Bagkroppens Buglemmer alle vel udviklede, med den ydre Plade bestaaende af 2 tydelige Segmenter. Halevedhængene af et lignende Udseende som hos Slægten Apseudes, men forholdsvis kortere.

Bemærkninger. Slægten *Sphyrapus* er opstillet af Norman i en under Arbeide værende Afhandling over Isopoder indsamlede under de engelske Expeditioner. Jeg har ved nævnte Forskers Velvillie havt Anledning til at undersøge 2 meget distincte Arter tilhørende denne Slægt, nemlig *Sphyrapus tudes* og *malleolus*, og har derved kunnet overbevise mig om, at den nedenfor nærmere omtalte Form ligeledes er en ægte Sphyrapus. Foruden disse 3 Arter hører ogsaa herhen den af mig som *Apseudes anomalus* characteriserede norske Form. Slægten tæller saaledes for Tiden 4 Arter.

Fra Slægten *Apseudes* skiller den sig blandt andet meget bestemt ved Mangelen af det eiendommelige bladformige Vedhæng til 2det Par Følere og derved, at kun Saxfødderne, men ikke som hos Apseudes tillige Gravefødderne, har en rudimentær Exopodit ved Basis; fremdeles ved den eiendommelige Udvikling af begge disse Fodpar samt 1ste Par Følere hos Hannen, endelig derved, at den ydre Plade paa Bagkroppens Buglemmer bestaar af 2 tydelige Segmenter.

above, anteriorly protending as a broad, frontal plate. Ocular lobes distinctly separate, but exceedingly small, placed at the outer corners of the head. First free segment firmly connected with the cephalic segment, uniformly rounded toward the sides, and furnished with small and obtuse epimera. Abdomen comparatively short, with the terminal segment but a trifle more slender than the others. First pair of antennæ widely separated, with the 1st joint of the peduncle very large and lamelliform, the last joint quite small, the flagella comparatively short, the outer one in the male much more powerfully developed than in the female, and armed with dense fascicles of sensory bristles. Second pair of antennæ exceedingly slender, simple, without secondary plate, and having a short flagellum. Mandibles well developed, with the spines attached behind the dentate part simple, the molar projection narrow-cylindric, the palp exceedingly slender, and but sparingly beset with bristles. Chelipeds with the 2 joints preceding the hand narrow, and in the male very greatly produced: the hand itself much swollen, with long, pointed fingers: a small two-jointed appendage (rudimentary exopodite), beset with bristles, at the base. Fossorial legs powerfully developed, without any appendage at the base: the outer joints lamelliform-dilated, and armed with strong spines: in the male, remarkably produced. Ambulatory legs more slender and feeble in structure, as also sparingly furnished with bristles. Pleopoda all well developed, with the outer plate composed of 2 distinct segments. Caudal appendages presenting a similar appearance to those in the genus Apseudes, but comparatively shorter.

Remarks. — The genus *Sphyrapus* was established by Norman, in a Memoir he had commenced on the Isopods collected during the various British Expeditions. By the kindness of that naturalist I was enabled to examine 2 very distinct species of the said genus, — viz. *Sphyrapus tudes* and *S. malleolus*, and feel convinced, from the result of my investigations, that the form described in detail below is likewise a true Sphyrapus. Exclusive of the aforesaid 3 species, comes the Norwegian form to which I had given the appellation of *Apseudes anomalus*. The genus comprises therefore at present 4 species.

From the genus Apseudes it is, for example, unmistakeably distinguished by the absence of the peculiar squamiform appendage on the 2nd pair of antennæ, and by the chelipeds only — not as in Apseudes the fossorial legs also — being furnished with a rudimentary exopodite at the base; moreover, by the peculiar development of both those pairs of feet, as also of the 1st pair of antennæ in the male: and finally by the outer plate of the pleopoda consisting of 2 distinct segments.

13. Sphyrapus serratus. G. O. Sars, n. sp.

(Pl. XXI).

Sphyrapus serratus. G. O. Sars. Revision af Gruppen Isopoda chelifera. pg. 20.

Artscharacteristik. Legemet hos Hunnen neppe 5 Gange saa langt som bredt, hos Hannen betydelig smækrere. Pandepladen meget bred, horizontal, i Midten uddraget i en stump 4-tandet Spids. Sidste Forkropssegment betydelig kortere end de øvrige. Bagkroppens 5 første Segmenter med udstaaende, triangulært tilspidsede Epimerer. Sidste Segment stumpt tilrundet. Ingen Øine. 1ste Par Følleres Basalled meget stort, udvidet paa Midten, med 4 Børster i den ydre Kant; den indre Svøbe ganske kort, 3-leddet, den ydre hos Hunnen 5-leddet, hos Hannen 7-leddet. Saxfødderne kraftigt udviklede, med stærkt opsvulmet Haand, Tibialleddet hos Hannen længere end Tarsalleddet. Gravefoddernes næstsidste Led hos Hunnen bevæbnet med 3 stærke Torner i den indre Kant. Halevedhængene neppe længere end Bagkroppen, med den ydre Gren meget liden og 3-leddet, den indre 10-leddet. Farven ensformig hvid. Længden 5—6^{mm}.

Findesteder. Stat. 40, 51, 353.

Bemærkninger. Nærværende Art viser en saa paafaldende Lighed med den af mig tidligere characteriserede norske Art, *Sph. anomalus*, at jeg i lang Tid kun holdt den for en Varietet af samme. Ved den nøiere anatomiske Undersøgelse, jeg senere har anstillet over begge disse Former, har jeg dog fundet visse constante Forskjelligheder saavel hos Hun som hos Han, der gjør det nødvendigt at skille dem som distincte Arter. Et meget let opfatteligt ydre Kjendemærke for nærværende Art er de til Siderne stærkt udstaaende og triangulært tilspidsede Epimerer paa Bagkroppens 5 første Segmenter, hvilket har givet Anledning til Artsbenævnelsen. Hos *Sph. anomalus* er disse Segmenter til Siderne stumpt afrundede, og hele Bagkroppen synes derved ogsaa her betydelig smalere.

Beskrivelse af Hunnen. Legemet er (se Pl. XXI, Fig. 1 og 2) noget nedtrykt og jevnt afsmalnende bagtil, med den største Brede, der falder over 1ste frie Forkropssegment, noget større end $^1/_5$ af Længden.

Integumenterne er temmelig haarde, glatte og glindsende, samt uden nogen bemærkelig Haarbesætning, naar afsees fra Lemmerne.

Det forreste Kropssegment, der kun uegentlig kan benævnes Hovedet, da det i sig tillige indbefatter det 1ste fodbærende Segment, er meget stort, dannende et Slags Rygskjold (carapax) af triangulær Form, med den største Brede, der omtrent er lig Længden, i sin bageste Del. Fortil gaar det ud i en bred, horizontal Pandeplade, der i Enden er udtrukket i en kort stump Spids besat med 4 smaa Tænder (se Fig. 4). Ved Basis af denne Pandeplade og indtagende Sidehjørnerne af Hovedskjoldet sees 2 smaa

13. Sphyrapus serratus, G. O. Sars, n. sp.

(Pl. XXI).

Sphyrapus serratus, G. O. Sars. Revision af Gruppen Isopoda chelifera. p. 20.

Specific Character. — Body in female scarcely 5 times as long as broad, in male much more slender. Frontal plate exceedingly broad, horizontal, produced in the middle to an obtuse four-toothed point. Last thoracic segment considerably shorter than the others. Five first segments of abdomen with projecting, triangular, acuminate epimera. Last segment obtusely rounded. No eyes. Basal joint of 1st pair of antennæ exceedingly large, dilated in the middle, with 4 bristles on the outer margin; inner flagellum very short, three-jointed; outer in female five-jointed, in male seven-jointed. Chelipeds powerfully developed, with the hand greatly swollen; tibial joint in male longer than tarsal joint. Penultimate joint of fossorial legs in female armed with 3 strong spines on the inner margin. Caudal appendages scarcely, if at all, longer than posterior division of body, with the outer branch exceedingly small and three-jointed, the inner ten-jointed. Colour a uniform white. Length from 5 to 6^{mm}.

Locality. — Stats. 40, 51, 353.

Remarks. — The present species exhibits so striking a resemblance to the Norwegian I had previously described under the name of *Sph. anomalus*, that I long held it to be a mere variety of that form. Meanwhile, a closer anatomical examination of both these animals has brought to light divers constant deviations both in the female and the male, that render it necessary to establish them as distinct species. A readily appreciable outer characteristic in the present form are the triangularly pointed epimera on the 5 first segments of the abdomen, prominently projecting toward either side, from which indeed the specific designation is derived. In *Sph. anomalus*, these segments are at the sides obtusely rounded; and hence the whole posterior division of the body in that species too, appears considerably more slender than in the present form.

Description of the Female. — The body somewhat depressed (see Pl. XXI, figs. 1, 2) and tapering gradually backward, with its greatest breadth, that occurs across the 1st free thoracic segment, slightly exceeding one-fifth of the length.

The integuments comparatively hard, smooth, and lustrous, as also without any covering of hair, except on the appendages.

The most anterior segment of the body, which in anything but a strict sense can be termed the head, comprising as it does also the 1st pedigerous segment, is exceedingly large, constituting a kind of carapax, triangular in form, its greatest breadth about equal to the length across the posterior portion. Anteriorly, it projects as a broad, horizontally extending frontal plate, which, at the extremity, is produced to a short, obtuse point, beset with 4 small teeth (see fig. 4). At the base of this frontal plate, and

triangulære, skarpt begrændsede Lapper, der forestiller Øienloberne. Lige bag disse danner Hovedskjoldet nedad til hver Side en dyb Udrandning, indenfor hvilken Kindbakkerne og Overlæben træder frit frem (se Fig. 3), medens det længere bagtil bøier sig om paa Bugfladen i Form af 2 uregelmæssigt firkantede Flige, der mellem sig indslutter de øvrige Munddele. Disse Flige dækker sammen med Hovedskjoldets bagre Sidedele til hver Side en tydelig Hule, hvori 2 eiendommeligt modificerede Vedhæng til Munddelene rager frem. Det bagerste og største af disse Vedhæng danner, som nedenfor nærmere skal vises, et compliceret Ventilapparat, ved hvis Bevægelser en stadig Strømning af Vandet i Retningen bagfra fortil underholdes i de nævnte Huler. Indgangsaabningerne til disse Huler er beliggende ved Basis af Kjævefødderne, medens Udgangsaabningerne ligger foran de omtalte Flige, mellem disse og Kindbakkernes Corpora. Det hele er, saaledes som af Fritz Müller hos Slægten Tanais paavist, utvivlsomt at betragte som et Respirationsapparat og har sit fuldstændige Homologon i Cumaceernes Gjellehuller, skjøndt paa langt nær ikke opnaaende disses mægtige Udvikling. Lige bag Kjævefødderne sees paa Bugsiden en ganske smal transversal Chitinplade, der aabenbart forestiller Sternaldelen af det forøvrigt ganske med Hovedet sammenvoxede 1st fodbærende Segment. Til Siderne af denne Chitinplade og umiddelbart indenfor en kort fra Hovedskjoldet udskydende tungeformig Fortsats er Saxfødderne fæstede.

Af tydeligt begrændsede Forkropssegmenter findes ligesom hos de øvrige til denne Gruppe hørende Former kun 6, idet det 1ste fodbærende Segment, som anført, saagodtsom ganske er gaaet op i Dannelsen af Hovedskjoldet. Det 1ste af disse frie Segmenter er meget fast og, som det synes, ubevægeligt forbundet med Hovedsegmentet. Det er noget bredere end dette, med jevnt afrundede Sidedele, og er bagtil stærkt udrandet til Optagelse af den smale forreste Del af 2det Segment. Dette og de følgende Segmenter er betydelig smalere og ved dybe Indsnøringer skilte fra hinanden. De har alle (se Fig. 2) meget smaa, med de tilsvarende Lemmer forbundne og fra selve Segmenterne skarpt adskilte Epimerer. De til 1ste Segment hørende er størst, men ikke som hos Slægten Apseudes forlænget til fortilrettede Torner.

Bagkroppen, der indtager omtrent $^1/_4$ af Totallængden, bestaar af 6 tydeligt begrændsede Segmenter, hvoraf de 5 forreste er ganske korte og i høi Grad udmærkede ved de triangulært tilspidsede og til Siderne udstaaende Epimerer, der giver denne Kropsdel et eiendommeligt saugtakket Udseende. Sidste Segment er i Enden stumpt afrundet og noget længere end de 2 foregaaende tilsammen.

Egentlige Øine mangler ganske. Thi indenfor de smaa

occupying the lateral corners of the cephalic shield, are seen 2 triangular, sharply defined lobules, representing the ocular lobes. Immediately posterior to these lobules, the cephalic shield forms below, on either side, a deep emargination, within which the mandibles and the labrum are seen freely protending (fig. 3), while, farther behind, it bends round the ventral surface in the form of 2 irregular-quadrate lappets, enclosing the rest of the oral appendages. These lappets, along with the posterior lateral portions of the cephalic shield, cover, on either side, a conspicuous cavity, into which 2 peculiarly modified appendices of the oral parts are observed to project. The larger and more posteriorly placed of these appendices, constitutes, as will be shown in the sequel, a complicated ventilatory apparatus, by the movements of which an uninterrupted current of water is made to flow in a postero-antero direction through the aforesaid cavities. The entrance-apertures to these cavities are located at the base of the maxillipeds, whereas the outlet-apertures occur anterior to the above-mentioned lobules, — viz. between the latter and the corpora of the mandibles. The whole arrangement must, as shown by Fritz Müller to be the case in the genus Tanais, unquestionably perform the functions of a respiratory apparatus, and has its perfect analogue in the branchial cavities of the Cumacea, though far from attaining their prodigous development. Immediately posterior to the maxillipeds are seen on the ventral side an exceedingly narrow, transversal, chitinous plate, manifestly representing the sternal portion of the 1st pedigerous segment, which, for the rest, is quite connate with the head. On the sides of this chitinous plate, and immediately anterior to a short, linguiform projection jutting out from the cephalic shield, are attached the chelipeds.

Of well-defined thoracic segments, occur, as in the other forms belonging to this group, 6 only, the first pedigerous segment being, as stated above, almost entirely confounded with the cephalic shield. The 1st of these free segments is exceedingly firm, and, it would appear, immovably connected with the cephalic segment. It is somewhat broader than the latter, with uniformly rounded lateral parts, and has posteriorly a deep emargination, to receive the narrow foremost part of the 2nd segment. This and the succeeding segments are considerably narrower, and separated by deep instrictions from one another. They have all of them (see fig. 2) exceedingly small epimera, connected with the corresponding appendages and distinctly separated from the segments themselves. Those on the 1st segment are largest, but not, as in the genus Apseudes, produced to anteriorly directed spines.

The posterior division of the body, measuring about one-fourth of the total length, consists of 6 well-defined segments, of which the 5 foremost are quite short, and conspicuously distinguished by the epimera, triangularly pointed and projecting toward the sides, which gives to this part of the body a characteristic serrate appearance. The terminal segment is, at the extremity, obtusely rounded, and somewhat longer than the 2 preceding ones, taken together.

Eyes, in a strict sense, are entirely wanting. For,

Øienlober kunde paa de friskt indfangede Exemplarer hverken Spor af Pigment eller lysbrydende Medier bemærkes.

1ste Par Folere (Fig. 5) udspringer vidt adskilte fra Hovedets forreste Sidehjorner umiddelbart foran Øienloberne og er lige udstrakte omtrent af Hovedkjoldets Længde. De bestaar, som hos Slægten Apseudes, af et 3leddet Skaft og 2 Svøber. Skaftets 1ste Led er meget stort, indtagende mere end Halvparten af Folernes Længde, pladeformigt, noget udvidet mod Enden og i den ydre buede Kant forsynet med 4 stærke Borster. 2det Led, der tilligemed den øvrige Del af Foleren danner med Basalleddet en vinkelformig Boining udad, er neppe mere end $^1/_3$ saa langt og simpelt cylindriskt samt ved Enden i hver Kant forsynet med nogle lange Borster. 3die Led endelig er særdeles lidet, omtrent ligesaa bredt som langt og uden tydelige Borster. Svøberne er af ulige Længde og ved Basis forbundne med hinanden. Den ydre er længst og sammensat af 4 Led, hvoraf de 2 midterste hvert foruden en simpel Børste bærer i den forreste Kant et smalt gjennemsigtigt Sandsvedhæng eller saakaldt Lugtepapille; dens sidste Led ender med et Knippe af simple Borster. Den indre Svøbe er neppe mere end halvt saa lang som den ydre og bestaar af 3 med simple Borster besatte Led.

2det Par Folere (Fig. 6) udspringer ligeledes vidt adskilte lige under 1ste Par (se Fig. 3) og er omtrent af samme Længde som disse, men meget spinklere. Man kan paa dem adskille et 4-leddet Skaft og en enkelt kort Svøbe. Skaftets 1ste Led er ganske kort, men forholdsvis bredt, noget udvidet mod Enden eller næsten omvendt hjerteformigt. 2det Led er smalt og cylindriskt; 3die særdeles lidet og rudimentært; 4de derimod meget langt og smalt samt forsynet i begge Kanter med flere af de eiendommelige pensel-formige saakaldte Horeborster. Svøben, der omtrent er af samme Længde som Skaftets sidste Led, bestaar af 4 Led, hvoraf de 3 yderste er forsynede med nogle simple Haarborster. Det for Slægten Apseudes characteristiske bladformige Vedhæng til disse Folere mangler her ganske og aldeles.

Imellem Folernes Insertion og Munddelene findes et temmelig betydeligt, noget concaveret Mellemrum, der danner Epistomet, hvilket fortil umiddelbart fortsætter sig i Pandepladen (se Fig. 3).

Omtrent i Midten af Hovedsegmentets nedre Flade sees (Fig. 3) en noget hjelmformig Forhoining, der danner Basis for Overlæben. Denne har Formen af en afrundet firkantet Lap, der ender med en i Midten svagt indbugtet skarp Kant (se Fig 7 og 9).

Underlæben (Fig. 8) er temmelig stor, pladeformig og bestaar af 2 symetriske, i Midten sammenvoxede Lapper. Til det ydre Hjorne af hver Lap er fæstet et lidet bevægeligt indadrettet Led af konisk Form og besat med fine Borster.

within the small ocular lobes, in the recently taken specimens, neither traces of pigment nor any visual elements whatsoever could be detected.

The 1st pair of antennæ (fig. 5) spring, widely apart, from the foremost lateral corners of the head, immediately anterior to the ocular lobes, and, fully extended, about equal the cephalic shield in length. They consist, as in the genus Apseudes, of a three-jointed peduncle and 2 flagella. The 1st joint of the peduncle is very large, measuring more than half the length of the antennæ, lamelliform, somewhat dilated towards the extremity, and on the outer arcuate margin armed with 4 strong bristles. The 2nd joint, which, together with the remaining portion of the antenna, bends outward, forming with the basal joint a distinct angle, is scarcely more than one-third as long, and simple-cylindric, as also, at the extremity, on either side furnished with a few long bristles. Finally, the 3rd joint is exceedingly small, about as long as broad, and without distinctly developed bristles. The flagella are unequal in length and at the base connected together. The outer flagellum is longest, and composed of 4 joints, of which the 2 median have each, exclusive of a simple bristle on the anterior margin, also a narrow, translucent sensory appendix, or, as it is termed, olfactory papilla; its last joint terminates in a fascicle of simple bristles. The inner flagellum is scarcely more than half as long as the outer, and consists of 3 joints, beset with simple bristles.

The 2nd pair of antennæ (fig. 6) take their origin, likewise widely apart, just under the 1st pair (see fig. 3), and are about of the same length, but much more slender. On these antennæ can be distinguished a four-jointed peduncle and a single, short flagellum. The first joint of the peduncle is quite short, but comparatively broad, somewhat expanded towards the end, or almost inverted-cordiform; the 2nd joint is slender and cylindric; the 3rd exceedingly small and rudimentary, the 4th, on the other hand, very long and slender, as also furnished on both margins with several of the peculiar scopiform, so-called auditory, bristles. The flagellum, about of the same length as the last joint of the peduncle, consists of 4 articulations, of which the 3 outermost are provided with a few simple bristles. The squamiform appendix to these antennæ characteristic of the genus Apseudes is entirely wanting.

Between the points of insertion for the antennæ and the oral appendages, occurs a comparatively extensive, somewhat concave space, forming the epistome, which, anteriorly, protends straight into the frontal plate (see fig. 3).

About in the middle of the lower surface of the cephalic segment, is seen (fig. 3) a somewhat galeate prominence, that forms the base of the labrum. The latter has the form of a rounded quadrate lobe, terminating in the middle with a faintly incurved sharp margin (see figs. 7 and 9).

The labium (fig. 8) is comparatively large, lamelliform, and consists of 2 symmetrical lobes, connate in the middle. To the outer corner of each lobe, is attached a small movable, inward-directed joint, of conical form, and beset with delicate bristles.

Kindbakkerne, der, naar Dyret sees nedenfra (se Fig. 3), viser sig som to temmelig store convexe Fremstaaenheder til hver Side af Overlæben, er af temmelig kraftig Bygning og stærkt incrusterede. Deres Corpora har (se Fig. 9) den sædvanlige baaddannede Form og fyldes af de stærke Adductormuskler, der i Midten gaar over i en chitinagtig Aponeurose. Deres indre Del gaar ud i 2 divergerende Fortsatser, hvoraf den forreste gaar i lige Flugt med Corpus og forestiller Kindbakkens egentlige Endeparti; den er noget indadkrummet og i Enden delt i 2 tandbærende Plader, der forholder sig noget ulige paa høire og venstre Kindbakke (se Fig. 10). Paa venstre Kindbakke er begge Plader omtrent ligestore og dækker hinanden gjensidig: paa høire Kindbakke er den bageste meget liden, næsten cylindrisk og ved Spidsen besat med nogle fine Torner. Lige bag disse Plader findes paa begge Kindbakker en Rad af simple tornformige Borster, 4 paa høiere og 5 paa venstre. Den bagre Fortsats, der udgaar fra Kindbakkens Corpus næsten under en ret Vinkel, forestiller Tyggeknuden. Den er smalt cylindrisk, noget tyndere mod Enden og her forsynet med den sædvanlige riflede Sculptur. Kindbakkernes Palpe (Fig. 11) er meget spinkel og kun yderst sparsomt børstebesat. Den bestaar af 3 tydelige Led, hvoraf det 2det er længst og ved Enden i den ene Kant forsynet med en enkelt kort Børste. Sidste Led er ganske lidet, koniskt og ender med 2 noget stærkere Borster.

1ste Par Kjæver (Fig. 12) har 2 tydeligt udviklede fortilrettede Tyggelapper, hvoraf den ydre er stærkest og paa Enden bevæbnet med talrige spidse Torner, medens den indre er af membranos Beskaffenhed, tungeformig og ved Spidsen forsynet med 4 cilierede Børster. Fra Ydersiden af Basaldelen udgaar en lige bagudrettet Gren (Palpe), der bestaar af 3 utydeligt begrændsede Segmenter og ved Spidsen er forsynet med 3 stærke indadkrummede Børster. Denne Gren rager, ligesom Epignathen paa Kjævefødderne, frit frem i Gjellehulen og synes nærmest bestemt til at rense samme for fremmede Partikler.

2det Par Kjæver (Fig. 13) er smaa, men normalt udviklede. Den noget pladeformige Basaldel danner indad en stump Vinkel og har foran denne en tæt Besætning af fine Børster. Fortil gaar den ud i en kort afstumpet Tyggelap, der foruden med Børster er bevæbnet med 3 stærke, i den ene Kant grovt tandede Torner (se Fig. 14). Det ydre Parti af Kjæven, der ved en tydelig Sutur er begrændset fra Basaldelen, bestaar af 2 Led, hvoraf det 1ste indad løber ud i en lignende Tyggelap, som den Basaldelen tilhørende, men kun besat med simple Børster. Endeleddet er ganske lidet og forsynet med 5 noget stærkere Borster, ordnede i 2 Knipper.

Kjævefødderne (Fig. 15), som delvis dækker Kjæverne nedad (se Fig. 3), bestaar af en 2-leddet pladeformig Basaldel, som er fast forbunden men den tilsvarende paa den anden Side, en 4-leddet Endedel eller Palpe og en eien-

The mandibles, which, on viewing the animal from below (fig. 3), present the appearance of two comparatively large convex protuberances, one on either side of the labrum, are powerful in structure, and very considerably incrusted. Their corpora (see fig. 9) have the usual navicular form, and are filled up with the strong adductor muscles, which, in the middle, pass into a chitinous aponeurosis. Their inner part branches out into 2 diverging projections, of which the more anterior protends in the same plane as the corpus, and, strictly, represents the terminal part of the mandible: it is somewhat incurved, and divided at the extremity into 2 dentiferous plates, differing slightly in character on the right and left mandibles (see fig. 10). On the left mandible, the plates are about equal in size, the one covering the other: on the right mandible, the posterior one is very small, almost cylindric, and at the point beset with a few slender spines. Immediately posterior to these plates, on both mandibles, is seen a row of simple spiniform bristles, 4 on the right and 5 on the left. The posterior projection, jutting out almost at right angles from the corpus of the mandible, represents the molar protuberance. It is slender-cylindric, somewhat slimmer toward the extremity, where it has the usual grooved sculpturing. The palp of the mandibles (fig. 11) is exceedingly slender, and but sparingly furnished with bristles. It consists of three distinct joints, of which the 2nd is the longest, and has on one of the margins, at the extremity, a single short bristle. The last joint is quite small, conic, and terminates with 2 somewhat stronger bristles.

The 1st pair of maxillæ (fig. 12) have 2 distinctly developed, anteriorly directed masticatory lobes, of which the outer one is the stronger, and furnished at the extremity with numerous acute spines, while the inner lobe is of a membranous character, linguiform, and armed at the point with 4 ciliated bristles. From the outer side of the basal part proceeds a posteriorly directed branch (the palp), composed of 3 indistinctly defined segments, and furnished at the point with 3 strong, inward-curving bristles. This branch — as does also the epignath on the maxillipeds — projects freely into the branchial cavity, its chief function being apparently to cleanse the latter from detrimental particles.

The 2nd pair of maxillæ (fig. 13) are small, but normally developed. The somewhat lamelliform basal part forms inward an obtuse angle, anterior to which it has a dense armature of slender bristles. Anteriorly, it juts out as a short, truncate masticatory lobe, armed, exclusive of bristles, with 3 strong, on one side coarsely dentate, spines (see fig. 14). The outer portion of the maxilla, separated by a distinct suture from the basal part, consists of 2 joints, of which the 1st protends inward as a masticatory lobe, similar to that on the basal part but furnished merely with simple bristles. The terminal joint is quite small, and armed with 5 somewhat stronger bristles, arranged in 2 bunches.

The maxillipeds (fig. 15), which, below, partially cover the maxillæ (fig. 3), consist of a two-jointed, lamelliform basal part, firmly connected with that corresponding to it on the opposite side, a four-jointed terminal part, or palp,

dommeligt udviklet Epignath. Basaldelens 1ste Led er ganske kort, dobbelt saa bredt som langt og er maaske egentlig at betragte som Sternaldelen af et særskilt Segment. Dens 2det Led er bredt bagtil, men afsmalnes hurtigt fortil, idet den ydre Kant er skraat afskaaret: indad løber det ud i en oval, i Enden med korte Borster og Torner besat Tyggeplade. Palpen er længere end Basaldelen og alle dens 4 Led lamellose samt i den indre Kant besat med indadkrummede Borster. Af Leddene er det 2det størst: sidste Led er skraat afskaaret i Enden og her forsynet med 7 bøiede Borster. Den mærkværdigt udviklede Epignath udspringer fra Basaldelens 1ste Led med en tyk, muskulos Stilk og er ligesom Palpen paa 1ste Par Kjæver ganske skjult i Gjellehulen, hvori den danner et Ventilapparat, der ved sine rythmiske Svingninger frem og tilbage underholder en stadig Strømning af Vandet i en bestemt Retning. Dens ydre Parti dannes af en bred, stærkt buet Plade af oval Form og membranos Beskaffenhed, der bagtil ender med et tyndt, snærtformigt Appendix. Noget foran Midten er denne Plade forsynet med en tydelig Tværsutur, hvorved den deles i 2 Segmenter. Det foran Suturen liggende Segment er i Kanterne meget fint cilieret. Den hele Epignaths Homologi med Gjelleapparatet hos Cumaceerne er evident saavel ifølge dens Structur som Beliggenhed og Forhold til Kjævefødderne.

Af Fødderne er de 2 forreste Par, ligesom hos Slægten Apseudes, eiendommeligt udviklede, medens de 5 bagerste Par er af mere normal Bygning og forestiller de egentlige Gangfødder.

1ste Fodpar (Fig. 17), der udspringer fra den bagerste Del af Hovedsegmentet, til hver Side af den for omtalte transversale Chitinplade, er udviklet til særdeles kraftige Griberedskaber i Lighed med de saakaldte Fangarme hos høiere Krebsdyr (Decapoda). De viser en temmelig stærk Sformig Krumning og er bøiede ind under Forkroppen saaledes, at deres Endeparti let kan bringes i Berørelse med Mundaabningen. Man kan paa dem adskille 6 Led, hvoraf de 2 sidste tilsammen danner en vel udviklet Sax. 1ste Led er stærkt indknebet ved Basis, men derpaa meget opsvulmet og fyldt med kraftige Muskler, der tjener til at bevæge den øvrige Del af Foden: det bærer ved Roden paa den ydre Side et lidet 2-leddet, med 4 lange ciilierede Borster endende Appendix (Fig. 19), der aabenbart svarer til den saakaldte Exopodit hos høiere Crustaceer (Schizopoder og Cumaceer), og som vi hos Slægten Apseudes ogsaa gjenfinder paa det følgende Fodpar. 2det Led er ganske og aldeles rudimentært og saa lidet, at det let undgaar Opmærksomheden, ihvorvel dets Tilstedeværelse med fuld Sikkerhed kan paavises. 3die Led er meget smalt, men noget udvidet mod Enden og her ved en meget skjæv Sutur forbundet med det næste. Dette er omtrent af Basalleddets Længde, men betydelig smalere, noget sammentrykt fra Siderne og i den nedre eller indre Kant forsynet med 4 stærke Borster. Den følgende Del af Foden, der fore-

and a peculiar-developed epignath. The 1st joint of the basal part is quite short, twice as broad as long, and should, perhaps, strictly, be regarded as the sternal portion of a separate segment. The 2nd joint is broad posteriorly, rapidly tapering however anteriorly, the outer side being obliquely truncate: inward, it protends as an oval masticatory plate, beset at the extremity with short bristles and spines. The palp is longer than the basal part, and has each of its 4 joints lamellar, and armed along the inner margin with incurving bristles. Of the joints, the 2nd is the largest: the terminal joint is obliquely truncate at the extremity, where it has 7 curving bristles. The remarkably developed epignath takes its origin on the 1st joint of the basal part, as a thick, muscular stem, and, like the palp on the 1st pair of maxillæ, is entirely concealed within the branchial cavity, where it forms a ventilatory apparatus, which, by rhythmical vibrations backward and forward, produces an uninterrupted current of water in a given direction. Its outer part is composed of a broad, very considerably arcuate plate, oval in form and of a membranous character, terminating posteriorly with a narrow, digitiform appendix. A little anterior to the middle, this plate exhibits a distinct transverse suture, dividing it into 2 segments. The segment in advance of the suture is very finely ciliated along the margins. The homology of this epignath with the branchial apparatus in the Cumacea is indisputably apparent, alike from the structure of the organ and its position and relation to the maxillipeds.

Of the legs, the 2 foremost pairs exhibit, as in the genus Apseudes, a very peculiar development, whereas the 5 hindmost pairs are more normal in structure, and represent the true pereiopoda.

The 1st pair of legs (fig. 17), springing from the posterior part of the cephalic segment, on either side of the previously mentioned chitinous plate, are, like the so-called chelipeds in more highly developed Crustaceans (Decapods) exceedingly powerful prehensile organs. They exhibit a comparatively strong S-shaped curve, and are bent in under the body, so as to readily admit of their terminal part being brought in contact with the buccal orifice. They are composed of 6 joints, the last two forming together a well-developed chela. The 1st joint is very much constricted at the base, from thence however greatly swollen, containing as it does the powerful muscles that serve for moving the other part of the leg: it bears at the base, on the outer side, a small, two-jointed appendix, terminating in 4 long, ciliated bristles (fig. 19), which obviously correspond to the so-called exopodite in more highly developed Crustaceans (Schizopods and Cumaceans), and that, in the genus Apseudes, we also observe on the succeeding pair of legs. The 2nd joint is quite rudimentary, and so very small that it easily escapes observation, though its presence can be determined with perfect certainty. The 3rd joint is exceedingly slender, but somewhat dilated toward the extremity, where a very oblique suture connects it with the succeeding one. The latter is about equal in length to the basal joint, but much more slender, somewhat

stiller Haanden eller Saxen og er meget bevægeligt forbunden med det foregaaende Led, er enormt udviklet og selv længere end de 2 foregaaende Led tilsammen samt i sit basale Parti stærkt opsvulmet for at kunne optage de stærke divergerende Muskelknipper, der tjener til den bevægelige Fingers Adduction, og hvis Udspring frembringer paa den øvre stærkt convexe Del af Haanden en eiendommelig facetteret Tegning. Fingrene er særdeles lange, længere end Palmen, og ender i skarpe Spidser, der krydser hinanden, naar Saxen er lukket. Den indre Kant af begge Fingre er regelmæssigt saugtakket (se Fig. 18) indtil henimod Spidsen, som er ganske glat. Den ubevægelige Finger er noget bredere end den bevægelige og har mod Enden i den indre Kant 2 korte Børster, i den ydre Kant 3 lignende og ved Basis en enkelt saadan.

2ndet Fodpar (Fig. 20) har den for Familien Apseudidæ characteristiske Bygning, der synes at gjøre dem fortrinligt skikkede som Graveredskaber. De er noget længere end 1ste Par, men forholdsvis smækrere og har de ydre Led stærkt sammentrykte fra Siderne og bevæbnede med stærke Torner. Basalleddet, som mangler ganske Exopodit, er ikke mærkeligt indknebet ved Basis, men af nogenlunde cylindrisk Form og næsten nogent. 2det Led er vistnok meget lidet, men dog langt tydligere fremtrædende end samme paa 1ste Par. 3die Led er omtrent halvt saa langt som Basalleddet og foruden med en Del simple Børster bevæbnet med en stærk Torn ved Enden i den indre Kant. 4de Led er meget betydelig længere og bliver mod Enden successivt bredere og mere sammentrykt: dets ydre Rand er glat og kun ved Spidsen bevæbnet med en stærk Torn; den indre Rand er derimod forsynet med en Rad af Børster og i det forreste Parti desuden med 3 særdeles stærke Torner, der er fæstede til særegne Afsatser. 5te Led er ovalt, skiveformigt og bevæbnet med 8 stærke Torner, hvoraf 5 udgaar fra den indre Rand, 2 fra den ydre og 1 fra Spidsen. Denne sidste er betydelig større end de øvrige og i den indre Kant fint tandet; den forestiller egentlig Endeleddet (Dactylus).

De 5 følgende Fodpar (Fig. 21, 22, 24) er af meget svagere Bygning og forestiller de egentlige Gangfødder. De bestaar ligesom de 2 foregaaende Par af 5 Led foruden den tynde og meget bevægelige Endeklo. Af disse er Basalleddet omtrent saa langt som alle de øvrige tilsammen. De 2 første Par har en lignende Retning som Sax- og Gravefødderne, idet Endekloen vender nedad og bagtil, medens de 3 sidste i Regelen har en modsat Retning. I sin Bygning viser de forøvrigt indbyrdes stor Overensstemmelse, skjøndt der ved nøiere Undersøgelse lader sig paavise en Del mindre fremtrædende Differentser. De 2 forreste Par (se Fig. 21) er saaledes rigeligere børstebesatte end de øvrige, og de 2 følgende (Fig. 22) udmærker

compressed from the sides, and on the lower, or inner, margin furnished with 4 strong bristles. The remaining part of the leg, which represents the hand, or chela, and is very flexibly connected with the preceding joint, attains an enormous development, and is longer even than the 2 preceding joints taken together: moreover, it has the basal part considerably swollen, for the reception of the widely diverging fascicles of muscles that serve for the movable fingers' adduction, and whose origin produces on the upper, extremely convex portion of the hand a peculiar, areolated appearance. The fingers are remarkably long — longer than the palm — and terminate in acute points, that cross one another when the chela is shut. The inner margin of both fingers is regularly serrate (see fig. 18) to within a short distance from the point, which is quite smooth. The immovable finger is somewhat broader than the movable one, and has toward the extremity, on the inner margin, 2 short bristles, on the outer margin 3, of a similar kind, and at the base one such bristle.

The 2nd pair of legs (fig. 20) exhibit the structure characteristic of the family Apseudidæ, that would appear to render them admirably adapted to serve as fossorial organs. They are somewhat longer than the 1st pair, but comparatively more slender, and have the outer joints greatly compressed from the sides, as also armed with strong spines. The basal joint, on which the exopodite is entirely wanting, does not appear much constricted at the base, but has a well-nigh cylindrical form, and is almost naked. The 2nd joint is indeed very small, but far more prominent than that corresponding to it on the 1st pair. The 3rd joint is about half as long as the basal joint, and has, exclusive of a number of simple bristles, a strong spine at the extremity, on the inner margin. The 4th joint is very much longer, and becomes toward the extremity gradually broader and more compressed: its outer margin is smooth, and at the point armed only with a strong spine: the inner margin has, on the other hand, a row of bristles, and on the anterior portion also 3 exceedingly long spines, attached to special, ledge-like projections. The 5th joint is ovato-discoid, and armed with 8 strong spines, 5 of which proceed from the inner margin, 2 from the outer, and 1 from the point. The apical spine is considerably larger than the others, and finely dentate along the inner margin: it represents, strictly, the terminal joint (dactylus).

The 5 succeeding pairs of legs (figs. 21, 22, 24) are much more feeble in structure, and represent the true pereiopoda. They consist, like the 2 preceding pairs, of 5 joints, exclusive of the slender and very movable terminal claw. Of these, the basal joint is well-nigh as long as all the others taken together. The 2 first pairs have the same direction as the chelipeds and fossorial legs, the terminal claw turning downward and backward, whereas the 3 last take as a rule the opposite direction. In their structure, they exhibit for the rest very considerable agreement, though, on closer examination, a number of slight deviations can be shown. The 2 foremost pairs (see fig. 21) are, for instance, more abundantly furnished with bristles than the

sig blandt andet derved, at der til Ydersiden af sidste Led er fæstet en stærkt udviklet saakaldt Horeborste (se Fig. 23). Sidste Par (Fig. 24) er noget mindre end de øvrige og mangler Horebørsten paa sidste Led, hvorimod der langs den ydre Kant af Basalleddet er fæstet flere saadanne.

Brystposen, hvori Æggene optages og Ungerne undergaar sin første Udvikling, dannes af 8 Plader, der udspringer fra Basis af Gravefødderne og de 3 forreste Par Gangfødder. De var paa de erholdte Exemplarer endnu ikke fuldt udviklede og havde Udseendet af korte stilkede Blærer (se Fig. 2 og 3).

Bagkroppens Buglemmer er tilstede i 5 Par, svarende til de 5 forreste Segmenter. De bestaar (se Fig. 25) af en smalt cylindrisk Stamme og 2 smale pladeformige Grener, hvoraf den ydre, uligt hvad Tilfældet er hos Slægten Apseudes, er sammensat af 2 tydeligt begrændsede Segmenter. Ved Spidsen er begge Grener forsynede med lange Fjærborster, 8 paa den indre og 9 paa den ydre Gren. Desuden har denne sidste Gren paa Midten af den ydre Kant og ved Enden af dens 1ste Segment en lignende Fjærborste, og til Indersiden af den indre Gren er fæstet til en særegen Afsats en noget grovere, tornformig Borste.

Halevedhængene (se Fig. 26) er omtrent af Bagkroppens Længde og bestaar ligeledes af en Stamme og 2 Grene. Stammen udspringer til hver Side af sidste Segment fra en særegen Afsats og er ganske kort samt noget udvidet mod Enden. Grenene er smale, traadformige og af meget ulige Længde. Den indre og længste er sammensat af 10 Led, hvoraf ialmindelighed hvert andet bærer nogle lange Borster ved Enden; sidste Led har ved Spidsen en Dusk af 4 saadanne. Den ydre Gren er kun lidet længere end Stammen og bestaar kun af 3 Led, hvoraf det sidste er længst og ved Spidsen forsynet med 2 Borster.

Den fuldt udviklede Han (Fig. 27) er noget større end Hunnen og af forholdsvis betydelig smækrere Kropsform. Den kjendes desuden let ved den eiendommelige Udvikling af 1ste Par Følere og de 2 første Fodpar.

1ste Par Følere (Fig. 28) har Skaftet og den indre Svøbe af samme Udseende som hos Hunnen. Derimod er den ydre Svøbe betydelig kraftigere udviklet og sammensat af 7 Led, der alle med Undtagelse af det sidste er forsynede med et tæt Knippe af særdeles lange, vifteformigt divergerende Sandseborster.

Saxfødderne (Fig. 27 og 28) viser et fra samme hos Hunnen temmelig afvigende Udseende. Basaldelen er betydelig større og de 2 Haanden forudgaaende Led overordentlig stærkt forlængede og tynde samt indbyrdes næsten af ens Længde. Selve Haanden er omtrent af samme Størrelse som hos Hunnen, men skiller sig derved, at Fingrene i den indre Kant har skarpere Smaatænder. Ved Basis af

others, and the 2 succeeding pairs (fig. 22) may be distinguished by their having, among other characteristics, a strongly developed, so-called auditory, bristle (see fig. 23) attached to the outer side of the terminal joint. The last pair (fig. 24) are somewhat smaller than the others, and without any auditory bristle on the terminal joint, whereas several such bristles occur along the outer margin of the basal joint.

The marsupium, in which the eggs are deposited and the young undergo their first development, is composed of 8 plates, proceeding from the base of the fossorial legs and the 3 most anterior pairs of pereiopoda. In the specimens taken, they were not fully developed, and presented the appearance of short, pedunculated vesicles (see figs. 2, 3).

The pleopoda are present in 5 pairs, corresponding to the 5 foremost segments of the abdomen. They consist (see fig. 25) of a slender, cylindric stem and 2 narrow, lamelliform branches, of which the outer, contrary to what is the case in the genus Apseudes, is composed of 2 distinctly defined segments. At the point, both branches are provided with long, plumose bristles, 8 on the inner and 9 on the outer branch. Moreover, the latter branch has in the middle of its outer margin and at the extremity of the 1st segment, a similar plumose bristle, and on the inner side of the inner branch is attached, to a ledge-like projection, a somewhat coarser, spiniform bristle.

The caudal appendages (see fig. 26) about equal in length the posterior division of the body, and also consist of a stem and 2 branches. The stem springs, on either side of the terminal segment, from a ledge-like projection, and is quite short, as also somewhat dilated at the extremity. The branches are slender, filiform, and very unequal in length. The inner and longer of the two is composed of 10 joints, of which every other joint as a rule bears a few long bristles at the extremity; the last joint has a tuft of 4 such bristles. The outer branch is but little longer than the stem, and consists of only 3 joints, of which the last is longest and furnished at the point with 2 bristles.

The fully developed Male (fig. 27) is somewhat larger than the female, and has the body of a comparatively much more slender form. Moreover, it may be readily distinguished by the peculiar development of the 1st pair of antennæ and of the 2 first pairs of legs.

The 1st pair of antennæ (fig. 28) have the peduncle and the inner flagellum of the same appearance as in the female. On the other hand, the outer flagellum is much more powerfully developed, consisting of 7 joints, all of which, with the exception of the last, are furnished with a dense fascicle of exceedingly long, flabelliform-divergent sensory bristles.

The chelipeds (figs. 27, 29) exhibit a rather deviating appearance from those in the female. The basal part is much larger, and the 2 joints preceding the hand are remarkably elongate and slender, as also about equal in length. The hand itself is very nearly of the same size as that in the female, but differs in the inner margin of the fingers having sharper denticles. Moreover, at the base

den bevægelige Finger sees desuden en større, i Enden tvekloftet Tuberkel, som ganske mangler hos Hunnen.

Gravefødderne (Fig. 27 og 30) er enormt forlængede, næsten af hele Legemets Længde og udmærker sig desuden derved, at de hos Hunnen i den indre Kant af næstsidste Led fæstede Børster her er omdannede til Torner af et lignende Udseende som de 3 i den forreste Del fæstede, skjøndt noget mindre.

Bagkroppens Buglemmer er forholdsvis kraftigere udviklede og forsynede med talrigere og længere Svømmebørster. Desuden bemærkes den Eiendommelighed, at der til Afsatsen i den indre Gren er fæstet ikke som hos Hunnen en enkelt, men 2 grove Børster.

Farven er saavel hos Hannen som hos Hunnen ensformig hvid, uden noget bemærkeligt Pigment.

Længden af Hunnen er 5^{mm}, af Hannen næsten 6^{mm}.

Forekomst og Udbredning. En Del Exemplarer af denne mærkelige Isopode erholdtes under Expeditionens 1ste Togt i Havet mellem Norge og Island (Stat. 40 og 51) fra det betydelige Dyb af 1163—1215 Favne. Et enkelt Exemplar optoges endelig under sidste Togt Vest af Spitsbergen (Stat. 353) fra et endnu større Dyb, nemlig 1333 Favne.

Artens hidtil bekjendte Udbredningsfelt er saaledes den dybe med iskoldt Vand ved Bunden fyldte Havdal mellem Norge, Beeren Eiland og Spitsbergen paa den ene Side og Island, Jan Mayen og Grønland paa den anden, fra den 63de til den 78de Bredegrad.

of the movable finger is seen a large, at the extremity bifurcate, tubercle, entirely wanting in the female.

The fossorial legs (figs. 27, 30) are enormously produced, equalling almost the whole of the body in length; moreover, they may also be distinguished by the bristles in the female attached along the inner margin of the penultimate joint being here transformed into spines, similar in appearance to the 3 on the foremost part, though a trifle smaller.

The pleopoda exhibit comparatively a more powerful development, and are furnished with numerous and long natatory bristles. Moreover, they are also characterized by the ledge-like projection on the inner branch not having, as in the female, a solitary bristle attached to it, but 2 coarse ones.

Colour, both in the male and female, a uniform white, without any trace of pigment.

Length of female 5^{mm}, of male almost 6^{mm}.

Occurrence and Distribution. — Some few specimens of this remarkable Isopod were taken, on the 1st cruise of the Expedition, in the open sea, between Norway and Iceland (Stats. 40, 51), at the considerable depth of 1163—1215 fathoms. A single specimen was brought up, on the last cruise, west of Spitzbergen (Stat. 353), from a still greater depth, viz. 1333 fathoms.

Hence, the tract over which the species is at present known to be distributed, comprises the deep ocean valley, filled at the bottom with ice-cold water, extending between Norway, Beeren Eiland, and Spitzbergen, on the one side, and Iceland, Jan Mayen, and Greenland, on the other, — from the 63rd to the 78th parallel of latitude.

Fam. 2. **Tanaidæ.**

Gen. 1. **Cryptocope,** G. O. Sars. 1881.

Revision af Gruppen Isopoda chelifera.

Slægtscharacteristik. Legemet af undersætsig Bygning, med mere eller mindre skarpt afsatte Segmenter. Hovedskjoldet fortil lige afskaaret, uden tydelige Øienlober. 1ste Par Følere hos Hunnen 4-leddede, hos Hannen betydelig stærkere udviklede, med tykt 2-leddet Skaft og 5-leddet Svøbe besat med tætte Knipper af Sandsebørster. Kindbakkerne af middelmaadig Størrelse, med sammentrykt, pladeformig Tyggefortsats. Saxfødderne kraftigt udviklede, af ens Udseende hos begge Kjøn. Gangfødderne spinkle, indbyrdes lidet forskjellige. Bagkroppens Buglemmer hos Hunnen overordentlig smaa og rudimentære, med 2 smaa børstelose Endeplader, hos Hannen vel udviklede, med lange Svømmebørster. Halevedhængene med 2 ulige udviklede Grene, hos Hannen betydelig længere end hos Hunnen.

Fam. 2. **Tanaidæ.**

Gen. 1. **Cryptocope,** G. O. Sars. 1881.

Revision af Gruppen Isopoda chelifera.

Generic Character. — Body thickset in structure, with more or less sharply defined segments. Cephalic shield truncate anteriorly, without distinct ocular lobes. First pair of antennæ, in female, four-jointed, in male much more powerfully developed, with a thick, two-jointed peduncle and a five-jointed flagellum, beset with dense fascicles of sensory bristles. Mandibles moderate in size, with a compressed, lamelliform molar projection. Chelipeds powerfully developed, of same appearance in both sexes. Ambulatory legs slender, differing but little one from the other. Pleopoda, in female, remarkably small and rudimentary, with 2 diminutive, naked terminal plates; in male well developed, and having long natatory bristles. Caudal appendages with 2 unequally developed branches, in male much longer than in female.

Bemærkninger. Den Character, hvorved nærværende Slægt især skiller sig fra de øvrige Tanaideslægter, er den rudimentære Beskaffenhed af Bagkroppens Buglemmer hos Hunnen. I denne Henseende kommer den nærmest Slægten *Haplocope* G. O. Sars;[1] men hos denne sidste Slægt danner disse Lemmer kun simple bladformige Appendices, medens de hos Slægten Cryptocope, trods sin rudimentære Beskaffenhed, er tydeligt tvegrenede. Ogsaa i Kindbakkernes Bygning afviger Slægten kjendeligt fra de øvrige Tanaideslægter. Foruden den nedenfor nærmere omtalte Form hører ogsaa herhen den af mig tidligere som *Tanais abbreviatus* kortelig characteriserede norske Art, hos hvilken Bagkropslemmerne forholder sig fuldkommen ligedan.

Remarks. — The character whereby in particular the present genus differs from the other genera of Tanaidæ, is the rudimentary nature of the pleopoda in the female. So far, the animal approximates closest the genus *Haplocope* G. O. Sars:[1] but in that form the said parts constitute mere simple, squamiform appendices, whereas in the genus Cryptocope they are, notwithstanding their rudimentary nature, distinctly biramous. Also in the structure of the mandibles, the genus differs very perceptibly from the other genera of Tanaidæ. Exclusive of the animal described more in detail below, this genus also comprises the Norwegian species that, as *Tanais abbreviatus*, I had briefly characterized on a former occasion, and which, as regards the pleopoda, exhibits a relation precisely similar.

14. Cryptocope Vøringii, G. O. Sars, n. sp.

Pl. VII. Fig. 5—16.

Tanais Vøringii, G. O. Sars, Prodromus descriptionis Crust. etc., No. 62.
Cryptocope Vøringii, G. O. Sars, Revision af Gruppen Isopoda chelifera.

Artscharacteristik. Legemet omtrent 5 Gange saa langt som bredt, med stærkt opblæste og ved dybe Indsnoringer adskilte Segmenter, hos Hannen noget smækrere især paa Midten. Hovedskjoldet til Siderne stærkt buget, med noget bugtet Panderand. Bagkroppen hos Hunnen smalere end Forkroppen med 5 stærke Torner langs Bugsiden og sidste Segment stærkt opblæst, næsten kugleformigt: hos Hannen uden ventrale Torner, med sidste Segment smalere og bagtil triangulært tilspidset. 1ste Par Folere hos Hunnen kortere end Hovedskjoldet, hos Hannen betydelig længere. Saxfodderne særdeles kraftige, med Haanden stærkt opsvulmet og Fingrene omtrent af Palmens Længde, endende med hornfarvede, hinanden krydsende Spidser. Halevedhængene hos Hunnen meget korte og skraat indadrettede, med den ydre Gren 1-leddet, den indre 2-leddet og betydelig større; hos Hannen med 2- og 3-leddede Grene. Farven ensformig hvid. Længden indtil $5^1/_2{}^{mm}$.

Findesteder. Stat. 31, 124, 248.

Bemærkninger. Nærværende anselige Tanaide er let kjendelig fra alle øvrige Former ved de stærkt opsvulmede og ved usædvanlig dybe Indsnoringer adskilte Segmenter, der giver Legemet et eiendommeligt perlebaandformigt Udseende. Fra Slægtens 2den Art, *C. abbreviata*, kjendes den desuden let ved sin langt betydeligere Størrelse samt ved en forholdsvis mindre undersætsig Kropsform.

[1] Se den ovenciterede Afhandling.

14. Cryptocope Vøringii. G. O. Sars, n. sp.

Pl. VII. figs. 5—16.

Tanais Vøringii, G. O. Sars, Prodromus descriptionis Crust. etc., No. 62.
Cryptocope Vøringii, G. O. Sars, Revision af Gruppen Isopoda chelifera.

Specific Character. — Body about 5 times as long as broad, with exceedingly tumid segments, separated one from the other by deep instrictions: in male a trifle more slender, particularly in the middle. Cephalic shield bellying out very considerably toward the sides, with a somewhat flexuous frontal margin. Posterior division of body, in female, more slender than anterior, with 5 strong spines along the ventral side, and having the last segment exceedingly tumid, almost globular: in male, without ventral spines, and having the last segment narrower and, posteriorly, triangular-acute. First pair of antennæ, in female, shorter than cephalic shield, in male considerably longer. Chelipeds remarkably powerful, with the hand exceedingly swollen, and the fingers about of same length as the palm, terminating in horn-coloured points, that cross one another. Caudal appendages in female very short, and directed obliquely inward, with the outer branch one-jointed, the inner two-jointed and considerably larger: in male with two and three-jointed branches. Colour a uniform white. Length reaching $5^1/_2{}^{mm}$.

Locality. — Stats. 31, 124, 248.

Remarks. — The present large-sized Tanaid is readily distinguished from all other forms by the exceedingly tumescent segments, separated one from the other by unusually deep instrictions, and giving to the body a peculiar moniliform appearance. Moreover, from the 2nd species of the genus *C. abbreviata*, it may be easily recognized by its far greater size, as also by a comparatively less thickset form of body.

[1] See aforecited Memoir.

Beskrivelse af Hunnen. Legemets Form er (se Pl. VII. Fig. 5 og 6), ialfald i Sammenligning med de fleste ovrige Tanaider, temmelig undersætsig, idet den største Brede omtrent er lig $^1/_5$ af Længden, og udmærker sig, som ovenfor anført, ved den usædvanlig skarpt markerede Begrændsning af Forkroppens Segmenter.

Integumenterne er særdeles haarde, glatte og glindsende, uden nogen tydelig udpræget Skulptur.

Hovedskjoldet er neppe længere end bredt, til Siderne, hvor det omslutter Gjellehulerne, stærkt buet, fortil temmelig hurtigt afsmalnende og ender med en næsten lige afskaaret, eller kun meget svagt bugtet Panderand.

De 3 første frie Segmenter er noget bredere end Hovedskjoldet, med Sidedelene noget fortilrettede og afrundede samt Længden mindre end den halve Brede. De 2 derpaa følgende er noget længere og til Siderne jevnt buede eller næsten af elliptisk Form. Sidste Forkropssegment endelig er lidt udvidet bagtil og har den bagre Rand ganske svagt concaveret.

Bagkroppen, der omtrent indtager $^1/_4$ af Totallængden, er noget smalere end Forkroppen og bestaar som sædvanligt af 6 Segmenter, hvoraf de 5 forreste er meget korte og indbyrdes af ens Udseende, med jevnt tilrundede Epimerer. Sidste Segment er derimod betydelig større og bredere, oventil stærkt hvælvet, næsten kugleformigt og bagtil i Midten endende med en stump Spids. Langs den ventrale Side af de 5 forreste Segmenter findes (se Fig. 6 og 8) en stærkt fremtrædende Kjøl, der for hvert Segment springer frem i Form af en sammentrykt og noget bagudkrummet Torn, der navnlig paa 2det Segment er af betydelig Størrelse. Sidste Segment er derimod (se Fig. 8) paa den nedre Side i Midten noget fordybet og bagtil vinkelformigt indskaaret for at kunne optage de blode Dele, der omgiver den spaltformige Analaabning.

Af Øine findes ikke det allermindste Spor, og heller ikke bemærkes nogen fra Hovedskjoldet tydeligt adskilte Øienlober.

1ste Par Følere (se Fig. 5 og 7), der udspringer tæt sammen fra Panderanden, er betydelig kortere end Hovedskjoldet og jevnt afsmalnende mod Enden. De er som hos alle andre Tanaider simple og bestaar af 4 tydeligt begrændsede Led, hvoraf det 1ste er betydelig større end de øvrige. Sidste Led, der vel egentlig repræsenterer den rudimentære Svøbe, er af lineær Form, omtrent saa langt som de 2 foregaaende tilsammen og bærer paa Spidsen et Knippe af tynde Børster, imellem hvilke ved stærk Forstørrelse viser sig et enkelt gjennemsigtigt Sandsevedhæng (Lugtepapille).

2det Par Følere *(ibid.)* udspringer lige under 1ste Par og er noget kortere og betydelig spinklere end disse. De bestaar af 6 Led, hvoraf det 1ste er meget kort, medens 4de Led er stærkt forlænget. Sidste Led, er overordentlig lidet og kun synligt ved stærke Forstørrelser: det bærer

Description of the Female. — The form of the body (see Pl. VII. figs. 5, 6) is, compared to that in most other Tanaids, rather thickset, its greatest breadth being about equal to one-fifth of the length; and, as stated above, it is characterized by the unusually well-marked separation of the segments belonging to the anterior division.

The integuments are exceedingly hard, smooth, and lustrous, without any perceptible sculpturing.

The cephalic shield scarcely at all longer than broad; toward the sides, where it encloses the branchial cavities, exceedingly arcuate, anteriorly rather rapidly tapering, and terminating in a well-nigh truncate, or at least but very slightly flexuous, frontal margin.

The 3 first free segments are a trifle broader than the cephalic shield, with the lateral portions somewhat anteriorly directed and rounded off, as also with the length less than half the breadth. The 2 succeeding segments are somewhat longer, and, toward the sides, uniformly arched, or well-nigh elliptic in form. The last segment is a little dilated posteriorly, and has the hinder margin very slightly concave.

The posteror division of the body, measuring about one-fourth of the total length, is somewhat more slender than the anterior, and, as usual, composed of 5 segments, of which the 5 foremost are very short, and similar in appearance, with uniformly rounded epimera. The terminal segment, on the other hand, is considerably larger and broader, above exceedingly arched, almost globular, and posteriorly terminating in the middle with an obtuse point. Along the ventral side of the 5 foremost segments (see figs. 6, 8), runs an exceedingly prominent carina, which, at each segment, springs out in the form of a compressed and somewhat posteriorly curving spine, that, more particularly on the 2nd segment, is of considerable size. The last segment is, however (see fig. 8), on the lower side, somewhat depressed in the middle, and posteriorly angular-incised, for the reception of the soft parts surrounding the fissure-like anal opening.

Of eyes, not a trace can be found; nor do any distinctly defined ocular lobes proceed from the cephalic shield.

The 1st pair of antennæ (see figs. 5, 7), springing, close together, from the frontal margin, are considerably shorter than the cephalic shield, and taper uniformly toward the extremity. As in all other Tanaids, they are simple, and consist of 4 distinctly defined joints, of which the 1st is considerably larger than the rest. The last joint, which, in a strict sense, probably represents the rudimentary flagellum, is linear in form, about as long as the 2 preceding joints taken together, and bears at the point a fascicle of slender bristles, between which, under a strong magnifier, can be seen a single translucent, sensory appendix (olfactory papilla).

The 2nd pair of antennæ *(ibid.)* have their origin immediately beneath the 1st pair, and are somewhat shorter and considerably more feeble in structure than the latter. They consist of 6 joints, the 1st very short, whereas the 4th joint is greatly prolonged. The terminal segment is

ved Spidsen et Par meget lange og tynde Borster. De 4 første Led forestiller Skaftet, de 2 sidste Svøben.

Munddelene viser sig, naar Dyret sees nedenfra (se Fig. 7) sammentrængte paa et forholdsvis lidet Rum og til Siderne indesluttede af de paa Bugsiden ombøiede Sidedele af Hovedskjoldet. Fortil mellem Roden af 2det Par Følere bemærkes en liden afrundet firkantet, noget fremspringende Plade, der forestiller Overlæben. Umiddelbart bag denne og tildels dækket af samme sees de brunt farvede Tænder paa Kindbakkernes indre Ender. Den øvrige Del af disse Organer ligesom Underlæben og Kjæverne dækkes derimod fordetmeste ganske af Kjævefødderne. Disse viser en lignende Bygning som hos Sl. Sphyrapus. Den 4-leddede Palpe er noget udadrettet og langs den indre Kant tæt besat med stærke indadkrummede Borster.

1ste Fodpar (se Fig. 6 og 7) er som hos de øvrige til denne Tribus hørende Former udviklede til særdeles kraftige Griberedskaber. De udspringer temmelig nær sammen med en bred Basis fra den bageste Del af Hovedsegmentets Ventralside og retter sig med en stærk Sformig Bøining fortil langs Siderne af Hovedskjoldet. Leddene er særdeles brede, noget sammentrykte fra Siderne og fyldte med kraftige Muskler: de 2 sidste danner tilsammen en vel udviklet Sax, der indtager omtrent $^1/_3$ af Fodens Længde. Fingrene, der neppe er kortere end Palmen, ender med en skarp, stærkt krummet og hornfarvet Spids og viser langs den indre Kant nogle uregelmæssige tandformige Fremspring, der gribe ind mellem hverandre, naar Saxen er lukket (sml. Fig. 14); i dette Tilfælde krydser Spidserne hinanden meget stærkt.

De øvrige Fodpar (se Fig. 5 og 6) er alle omtrent af ens Udseende og forestiller de egentlige Gangfødder. De er af meget spinkel Form, med Basalleddet størst, men neppe bredere end de øvrige Led. Endekloen er paa alle ganske kort og simpel, ligesom de paa disse Fodpar fæstede Borster er smaa og faa i Antal.

Bagkroppens Buglemmer (se Fig. 8 og 9) er ganske og aldeles rudimentære og saa smaa, at de meget let kan forbises. De er imidlertid tilstede i det sædvanlige Antal og fæstede nær de afrundede Sidekanter af de 5 forreste Segmenter (se Fig. 8). De bestaar som sædvanligt af en Basaldel og 2 Endeplader; men disse sidste er særdeles smaa og mangler ganske ethvert Spor af Borster, hvorfor disse Lemmer heller ikke kan fungere som Svømmeredskaber, hvortil desuden deres ringe Størrelse vilde gjøre dem ganske utjenlige.

Halevedhængene (se Fig. 8 og 10) er forholdsvis meget korte, paa langt nær ikke af sidste Segments Længde, og viser ialmindelighed en skraa Retning indad mod Midtlinien, saa at, naar Dyret sees ovenfra, oftest kun de lange Endeborster rager frem fra Segmentets bagre Rand. De bestaar

remarkably small, and not visible save when highly magnified; it bears at the point a couple of very long and slender bristles. The 4 first joints represent the peduncle, the 2 last the flagellum.

The oral appendages — on viewing the animal from below (see fig. 7) — appear crowded over a relatively small space and enclosed at the sides by the lateral parts of the cephalic shield, that bend over on the ventral surface. Anteriorly, between the bases of the 2nd pair of antennæ, is seen a small, rounded, quadrate, somewhat projecting plate, representing the labrum. Immediately posterior to this plate, and partially covered thereby, appear the brown-coloured teeth, at the inner extremities of the mandibles. The remaining portion of these organs, as also the labium and the maxillæ, are, on the other hand, as a rule, entirely concealed by the maxillipeds. The latter exhibit a similar structure to those in the genus Sphyrapus. The four-jointed palp is directed somewhat outward, and closely beset along the inner margin with strong incurving bristles.

The 1st pair of legs (see figs. 6, 7) are, as in the other forms belonging to this tribe, developed to exceedingly powerful organs of prey. They have their origin rather close together, with a broad base, from the posterior part of the ventral side of the cephalic segment, proceeding anteriorly, in a strong, S-shaped curve, along the sides of the cephalic shield. The joints are exceedingly broad, somewhat compressed from the sides, and provided with powerful muscles; the 2 last constitute together a well-developed chela, measuring about one-third of the length of the leg. The fingers, scarcely at all shorter than the palm, terminate in a short, exceedingly curved, and horn-coloured point, and exhibit, along the inner margin, a few irregular, dentiform projections, that fit in between one another when the chela is closed (see fig. 14), the points then crossing very prominently.

The remaining pairs of legs (see figs. 5, 6) have all about the same appearance, and represent the true pereiopoda. They are exceedingly slender in form, with the basal joint largest, but scarcely at all broader than the other joints. The terminal claw is without exception quite short and simple, the bristles, too, attached to these pairs of legs being likewise small and few in number.

The abdominal limbs (see figs. 8, 9) are in every sense rudimentary, and so small as to be easily overlooked. Meanwhile, they are present in the usual number, and attached close to the rounded lateral margins of the 5 anterior segments of the abdomen (see fig. 8). They consist as usual of a basal part and 2 terminal plates; but the latter are exceedingly small, and do not exhibit a trace of bristles; hence these parts can by no means serve as natatory organs, for which, too, their small size must render them wholly inefficient.

The caudal appendages (see figs. 8, 10) are comparatively very short, not attaining by far the length of the last segment, and have as a rule an oblique, inward direction towards the medial line, so that, on viewing the animal from above, it is generally the terminal bristles alone that

af en kort, men temmelig tyk Stamme, til hvis Ende er fæstet 2 ulige udviklede Grene. Den ydre af disse er meget liden, smalt konisk og kun bestaaende af et enkelt Led, hvorimod den indre er betydelig større og sammensat af 2 tydeligt begrændsede Led, hvoraf det sidste paa Spidsen bærer flere særdeles lange og tynde, divergerende Børster.

Den fuldt udviklede Han (Fig. 11 og 12) er noget mindre end Hunnen og i flere Henseender forskjellig fra samme.

Kropsformen er forholdsvis noget spinklere og Legemet paa Midten ligesom indsnoret, idet de 3 bageste Forkropssegmenter, er kjendeligt smalere end saavel de foregaaende som Bagkropssegmenterne. Disse sidste er betydelig kraftigere udviklede end hos Hunnen, oventil stærkt hvælvede og mangler ganske den ventrale Kjøl med sine tornformige Fortsatser. Sidste Segment er dog forholdsvis mindre stærkt opsvulmet og gaar bagtil ud i en temmelig lang konisk Spids.

1ste Par Folere (se Fig. 18) er af et fra samme hos Hunnen meget forskjelligt Udseende. De er betydelig større og sammensatte af 7 tydeligt begrændsede Led, hvoraf de 2 første maa henregnes til Skaftet, de 5 sidste til Svøben. Af Skaftets 2 Led er det 1ste omtrent dobbelt saa stort som det 2det: begge er af bred cylindrisk Form og fyldte med stærke Muskelknipper, der tjener til at bevæge Svøben. Denne sidste er noget længere end Skaftet og jevnt afsmalnende mod Enden. Dens 3 første Led er meget korte og bærer ligesom det følgende i den ydre Kant et tæt Knippe af klare, viftеformigt udbredte Sandseborster; sidste Led er noget længere end det foregaaende og ved Spidsen forsynet med en Del simple Børster.

2det Par Folere viser derimod ingen bemærkelig Forskjel fra samme hos Hunnen.

Munddelene er, som hos de fleste Tanaidehanner, ufuldstændigt udviklede, og alene Kjævefoddernes Palpe af normalt Udseende.

I Foddernes Bygning er ingen væsentlig Afvigelse at notere, og Saxfodderne, der hos enkelte til denne Familie hørende Former viser en saa paafaldende Forskjel hos begge Kjøn, er her fuldkommen af ens Udseende som hos Hunnen (se Fig. 12 og 14).

Derimod viser Bagkroppens Vedhæng mere udprægede Afvigelser.

Buglemmerne (se Fig. 12 og 15) er saaledes her i Modsætning til deres rudimentære Beskaffenhed hos Hunnen, udviklede til kraftige Svømmeredskaber og har i Overensstemmelse hermed Endepladerne besat med overordentlig lange og stærke Fjærborster.

Halevedhængene (Fig. 16) er betydelig stærkere forlængede end hos Hunnen, og Grenene har hver 1 Led flere end hos denne, idet den ydre er 2-leddet, den indre 3-leddet.

Farven saavel hos Han som Hun er ensformig hvid ligesom hos de fleste til denne Tribus hørende Former.

are seen to project from the posterior margin of the segment. They consist of a short, but somewhat thick stem, to the extremity of which are attached 2 unequally developed branches. The outer of these is very small, conically slender, and consists of but one joint, whereas the inner branch is considerably larger, and composed of 2 distinctly defined joints, the latter of which bears at the point several exceedingly long and slender, diverging bristles.

The fully developed Male (figs. 11, 12) is somewhat smaller than the female, from which, in several respects, it is found to differ.

The body is relatively a trifle more slender in form, and in the middle, as it were, constricted, the 3 posterior pedigerous segments being perceptibly narrower than both the anterior and the abdominal segments. The latter are much more powerfully developed than in the female, exceedingly arcuate above, as also without a trace of the ventral keel and its spiniform projections. The last segment is, however, comparatively less tumid, and projects posteriorly into a long, conical point.

The 1st pair of antennæ (see fig. 18) have a widely different apparance from those in the female. They are considerably larger, and composed of 7 distinctly defined joints, of which the 2 first must be regarded as belonging to the peduncle, the 5 last to the flagellum. The latter somewhat exceeds the peduncle in length, and tapers gradually toward the end. Its 3 first joints are very short, and bear, as does also the succeeding, on the outer margin, a dense fascicle of pellucid, flabelliform-expanded sensory bristles: the last joint is somewhat longer than the preceding, and furnished at the point with a number of simple bristles.

The 2nd pair of antennæ exhibit on the other hand no conspicuous difference from those in the female.

The oral appendages are, as in most Tanaid males, imperfectly developed, only the palp of the maxillipeds being of normal appearance.

In the structure of the legs, there is no essential deviation to record: and the chelipeds, which in several forms of this family exhibit so striking a difference in the two sexes, have precisely the same appearance as in the female (see figs. 12, 14).

On the other hand, the abdominal appendages exhibit more salient deviations.

Thus, the ventral limbs (see figs. 12, 15), in direct opposition to their rudimentary character in the female, are developed as powerful natatory organs, and have, in agreement herewith, the terminal plates beset with remarkably long and stiff, plumose bristles.

The caudal appendages (fig. 16) are much more elongate than in the female, and the branches have each 1 joint more, the outer branch being two-jointed and the inner three-jointed.

Colour, alike in male and female, a uniform white, as with most of the forms belonging to this tribe.

Længden af Hunnen er $5^1/_2{}^{mm}$, af Hannen ubetydelig mindre. Nærværende Art hører saaledes til de største i denne Familie.

Forekomst og Udbredning. 2 Exemplarer, en Hun og en Han af den ovenbeskrevne Tanaide blev under Expeditionens 1ste Togt optaget i Bundskraben fra et Dyb af 417 Favne udenfor Storeggen (Stat. 31). Under 2det Togt erholdtes enkelte Exemplarer af samme Art paa 2 andre Lokaliteter (Stat. 124 og 248), begge beliggende i Havet udenfor Kysten af Helgeland, Dybden fra 350 til 778 Favne. Alle 3 Stationer tilhører den kolde Area.

Artens for Tiden bekjendte Udbredningsfelt er saaledes det store Havdyb udenfor Norges Vestkyst fra den 63de til den 68de Bredegrad. Men efter al Rimelighed er den en ægte arktisk Form, der vistnok vil vise sig at forekomme paa mange andre Steder i den kolde Area's Dyb.

Length of female $5^1/_2{}^{mm}$, of male but very little less. The present species ranks accordingly as one of the largest in this family.

Occurrence and Distribution. — Two specimens, a female and a male, of the Tanaid described above, were brought up, on the 1st cruise of the Expedition, in the dredge, from a depth of 417 fathoms, off the Storeggen bank (Stat. 31). On the 2nd cruise, a few specimens were obtained of the same species at 2 other localities (Stats. 124, 248), both in the open sea, off the coast of Helgeland, depth from 350 to 778 fathoms. All 3 Stations in the cold area.

Hence, the tract throughout which the species is at present known to be distributed coincides with the great ocean depths off the West Coast of Norway, extending from the 63rd to the 68th parallel of latitude. But, in all probability, it is a true Arctic form, that no doubt will be found to occur in many other parts of the cold area.

Gen. 2. **Leptognathia**, G. O. Sars, 1881.

Revision af Gruppen Isopoda chelifera.

Slægtscharacteristik. Legemet hos Hunnen mere eller mindre langstrakt og smalt, med skarpt begrændsede Segmenter, hos Hannen betydelig kortere. Ingen Øine eller Øienlober. 1ste Par Følere hos Hunnen 4-leddede, hos Hannen betydelig større, med tykt 3-leddet Skaft og 4-leddet Svøbe forsynet med tætte Knipper af Sandsehorster. Kindbakkerne meget smaa og svage, med fligformig tilspidset Tyggefortsats. Saxfødderne noget ulige hos Han og Hun, Saxen hos Hunnen kraftigt udviklet af triangulær Form, hos Hannen betydelig svagere, med den ubevægelige Finger kortere end den bevægelige. Gangfødderne forholdsvis meget smaa og spinkle, de 3 bagerste Par noget ulig de foregaaende og bevæbnede med stærke Torner. Bagkroppens Buglemmer saavel hos Han som Hun vel udviklede, med ovale, tæt børstebesatte Endeplader. Halevedhængene tvegrenede, med den ydre Gren meget liden, undertiden ganske rudimentær, den indre hos Hunnen 2-leddet, hos Hannen 3-leddet. Hunnens Brystpose af normal Bygning.

Bemærkninger. Denne Slægt udmærker sig især ved Kindbakkernes eiendommelige Udseende og svage Bygning, hvilket har givet Anledning til Slægtsnavnet. Fra foregaaende Slægt, med hvilken den i Følernes Bygning stemmer overens, skiller den sig blandt andet væsentlig derved, at Bagkroppens Buglemmer hos Hunnen er vel udviklede og forsynede med børstebesatte Endeplader.

Slægten er temmelig artsrig, idet jeg har kunnet henføre til samme ikke mindre end 10 forskjellige Arter. De

Gen. 2. **Leptognathia**, G. O. Sars, 1881.

Revision af Gruppen Isopoda chelifera.

Generic Character. — Body in female more or less elongate and slender, with sharply defined segments; in male considerably shorter. No eyes or ocular lobes. First pair of antennæ in female four-jointed, in male considerably larger, with a thick, three-jointed peduncle, and a four-jointed flagellum furnished with dense fascicles of sensory bristles. Mandibles very small and weak, with an acutely lobular molar projection. Chelipeds somewhat dissimilar in male and female. Chela in female powerfully developed, triangular: in male much more feeble, with the immovable finger shorter than the movable. Ambulatory legs comparatively very small and fragile, the 3 posterior pairs somewhat unlike the preceding, and armed with stronger spines. Pleopoda both in male and female well developed, with ovate, closely setiferous terminal plates. Caudal appendages biramous, with the outer branch very small, sometimes quite rudimentary, the inner, in female, two-jointed, in male three-jointed. Marsupium of female normal in structure.

Remarks. — The genus is distinguished more particularly by the peculiar appearance and feeble structure of the mandibles, from which its generic appelation is derived. From the preceding genus, with which it agrees in the structure of the antennæ, it differs, among other characteristics, chiefly in the pleopoda of the female being well developed and furnished with setiferous terminal plates.

The genus may be regarded as rich in species, since I have been able to class under it not less than 10 different

fleste af disse er først opdagede af Prof. Lilljeberg ved Bohuslän og Norges Vestkyst. Slægten er forøvrigt ogsaa repræsenteret i Middelhavet og ved Nordamerikas Østkyst. Alle dens Arter synes at være ægte Dybvandsformer, og den fuldstændige Mangel af Øine synes at staa i god Samklang hermed.

most of these were discovered by Professor Lilljeborg, off Bohuslän, in Sweden, and the West Coast of Norway. For the rest, the genus is also represented in the Mediterranean and off the eastern shores of North America. All these species are apparently true deep-sea forms, and the absolute want of eyes would seem to be in strict accordance therewith.

15. Leptognathia longiremis. (Lilljeborg).

(Pl. VII, Fig. 17—28).

Tanais longiremis, Lilljeborg, Bidrag til Kundskab om de inom Sverige och Norrige förekomande Crustaceer af Tanaidernas underfamilj No. 7.

Tanais islandicus, G. O. Sars, Prodromus descriptionis Crust. etc., No. 61.

Leptognathia longiremis, G. O. Sars, Revision af Gruppen Isopoda chelifera pg. 41.

Artscharacteristik. ♀ Legemet af smal lineær Form, med den største Brede nepe mere end $^1/_7$ af Længden. Hovedskjoldet betydelig længere end bredt, i sin forreste Del afsmalnende, med lige afskaaret Panderand. Bagkroppen af samme Brede som Forkroppen, sidste Segment forholdsvis kort, med et lidet tandformigt Fremspring ved Basis af Halevedhængene. 1ste Par Følere noget kortere end Hovedskjoldet, med 1ste Led omtrent saa langt som de øvrige tilsammen. Saxfødderne af middelmaadig Størrelse, med Haanden noget udvidet mod Enden og den ydre Kant forsynet med en kort takket Kam; Fingrene lidt kortere end Palmen, den bevægelige i Yderkanten saugtakket. Halevedhængene længere end sidste Segment med begge Grene 2-leddede, den ydre særdeles liden, den indre 3 Gange saa lang, med særdeles lange divergerende Endeborster. Farven hvid. Længden indtil 3.70^{mm}.

Findested. Havnen ved Reikjavik.

Bemærkninger. Ved den nøiere Undersøgelse, som jeg fornylig har anstillet over de til nærværende Tribus hørende Former, har jeg fundet, at den af mig som en ny Art opstillede Form, *Tanais islandicus*, ikke skiller sig fra Lilljeborgs T. longiremis. Den opføres derfor her under sit rette Navn, og da Figurerne allerede var graverede inden jeg kom til dette Resultat, vedføier jeg nedenfor en udførlig Beskrivelse, skjøndt en saadan egentlig, efter den for dette Arbeide lagte Plan, ikke skulde meddeles her.

Arten er let kjendelig fra de øvrige til denne Slægt hørende Former ved Saxføddernes Bygning og de særdeles ulige udviklede Grene paa Halevedhængene, samt ved de usædvanlig lange Endeborster, hvormed disse, og navnlig den indre Gren, er forsynede.

15. Leptognathia longiremis. (Lilljeborg).

(Pl. VII, figs. 17—28).

Tanais longiremis, Lilljeborg, Bidrag til Kundskab om de inom Sverige och Norrige förekomande Crustaceer af Tanaidernas underfamilj, No. 7.

Tanais islandicus, G. O. Sars, Prodromus descriptionis Crust. etc., No. 61.

Leptognathia longiremis, G. O. Sars, Revision af Gruppen Isopoda chelifera, p. 41.

Specific Character. — ♀ Body of a slender, linear form, with its greatest breadth scarcely more than one-seventh of the length. Cephalic shield considerably longer than broad, tapering throughout, with the frontal margin abruptly truncate. Abdomen of same breadth as anterior division, terminal segment comparatively short, with a small dentiform projection at the base of the caudal appendages. First pair of antennæ somewhat shorter than cephalic shield, with the 1st joint about as long as the others taken together. Chelipeds moderate in size, with the hand somewhat dilated toward the extremity, and provided on the outer margin with a short, dentate comb; fingers a trifle shorter than palm, the movable one serrate on the outer margin. Caudal appendages longer than last segment, with both branches two-jointed, outer exceedingly small, inner 3 times as long, with remarkably elongate, diverging terminal bristles. Colour white. Length reaching 3.70^{mm}.

Locality. — Rejkjavik harbour.

Remarks. — From the closer examination I undertook some time since of the various forms belonging to the present tribe, I found that the new species I had established as *Tanais islandicus* is not distinct from Lilljeborg's T. longiremis. Hence, it is referred here under its proper designation; and as the figures had been already engraved previous to my arriving at this result, I annex below a detailed description, though, strictly, such does not come within the compass of the present Memoir.

The species may be easily distinguished from the other forms belonging to this genus by the structure of the chelipeds and the very unequally developed branches on the caudal appendices, as also by the unusually long terminal bristles with which those parts, in particular the inner branch, are furnished.

Beskrivelse af Hunnen. Legemet er (se Pl. VII. Fig. 17 og 18) af smal og langstrakt Form, omtrent 7 Gange længere end bredt, og har Segmenterne vel begrændsede ved laterale Indsnoringer.

Integumenterne er tyndere end hos den i det foregaaende omtalte Tanaide og hos enkelte Exemplarer halvt gjennemsigtige.

Hovedskjoldet er betydelig længere end bredt og i sin forreste Del temmelig stærkt afsmalnende, med næsten lige afskaaret Panderand og uden Spor af Øine eller fra Hovedskjoldet adskilte Øienlober.

Af Forkroppens Segmenter er det sidste kortest; næstsidste og 1ste omtrent ligestore og noget mindre end de 3 øvrige, der kun er ubetydelig bredere end lange.

Bagkroppen indtager omtrent $^1/_4$ af Totallængden og er af samme Brede som Forkroppen. Dens sidste Segment er forholdsvis kort og i Enden stumpt tilrundet samt viser nedad noget foran Halevedhængenes Insertion til hver Side et lidet tandformigt Fremspring (ikke antydet paa Figuren).

1ste Par Følere er noget kortere end Hovedskjoldet og viser den for Slægten sædvanlige Bygning. De bestaar af 4 mod Enden stærkt afsmalnende Led, hvoraf det 1ste er størst og af samme Længde som de øvrige tilsammen. Hos et af de erholdte Exemplarer, der tilfældigvis udvalgtes til Dissection, viste disse Følere (se Fig. 19) den Anomali, at sidste Led var delt i 2 tydelige Segmenter, hvorved disse Følere her blev 5-leddede. Jeg antager, at dette Exemplar *har været en endnu ikke fuldt udviklet Han*, hos hvem den yderligere Segmentering af disse Organer netop var paabegyndt. Ved en Feiltagelse er Følerne ogsaa paa det Fig. 17 og 18 afbildede Exemplar, der var en fuldt udviklet Hun, fremstillede som 5-leddede. Dette er urigtigt. De var her, som jeg senere har overbevist mig om, som sædvanlig, 4-leddede.

2det Par Følere (Fig. 20) er betydelig baade kortere og tyndere end 1ste Par og har de 2 midterste Led noget, skjøndt ikke meget længere end de øvrige. Ved Spidsen bærer disse Følere ligesom 1ste Par et Knippe af simple Børster.

Kindbakkerne (Fig. 21) er som hos alle til denne Slægt hørende Arter mærkelig smaa og svagt byggede. Selve Corpus er meget kort samt ufuldstændigt incrusteret, og den mod Munden rettede indre Ende smalt udtrukket og jevnt indadbøiet; paa høire Kindbakke er den bevæbnet med 2 smaa simple Tænder, paa venstre desuden med en secundær pladeformig Fortsats. Tyggekanden har den usædvanlige Form af en simpel tilspidset, noget bagudkrummet Flig af kun lidet fast Consistens og uden Spor af den sædvanlige riflede Skulptur.

1ste Par Kjæver (Fig. 22) har som hos andre Tanaider kun en enkelt smalt lineær Tyggelap, der paa Spidsen er bevæbnet med talrige divergerende Torner. Den bag-

Description of the Female. — The body (see Pl. VII, figs. 17, 18) is slender and elongate in form, about 7 times longer than broad, and has the segments well defined by lateral instrictions.

The integuments are thinner than in the preceding Tanaid, and in some specimens semi-diaphanous.

The cephalic shield is considerably longer than broad, and tapers somewhat rapidly throughout its anterior portion; the frontal margin abruptly truncate, without any trace of eyes, or of ocular lobes separated from the cephalic shield.

Of the segments belonging to the anterior division, the last is shortest; the penultimate and the 1st about equal in size, and a trifle smaller than the 3 others, which are but very little broader than long.

The posterior division of the body, measuring about one-fourth of the total length, is of the same breadth as the anterior. Its terminal segment is comparatively short, and obtusely rounded at the extremity; moreover, it exhibits, downward, a little anterior to the insertion of the caudal appendages, on either side, a small dentiform projection (not represented in the Figure).

The 1st pair of antennæ are somewhat shorter than the cephalic shield, and have the structure characteristic of the genus. They consist of 4 joints, rapidly tapering toward the extremity, of which the 1st is largest, and equal in length to the others taken together. In one of the specimens that chanced to be selected for dissection, these antennæ (see fig. 19) exhibited the anomaly of the terminal joint being divided into 2 distinct segments; and hence *the said antennæ are five-jointed*. In my judgment, this specimen must have been a male not fully developed, in which the segmentation of the organs in question had only just commenced. The antennæ of the specimen — a fully developed female — represented in figs. 17 and 18, are also erroneously shown as five-jointed. They were, in this specimen too, as I have subsequently been enabled to determine, as usual four-jointed.

The 2nd pair of antennæ (fig. 20) are considerably shorter and more slender than the 1st pair, and have the 2 middle joints a trifle longer than the rest. At the point, these antennæ bear, as do the 1st pair, a fascicle of simple bristles.

The mandibles (fig. 21) are, as in all the species belonging to this genus, remarkably small and feeble in structure. The corpus itself is exceedingly short and imperfectly incrusted, and the inner extremity directed toward the mouth, slenderly produced and uniformly incurved: on the right mandible it has 2 small, simple teeth: on the left, also a secondary, lamelliform projection. The molar protuberance exhibits the very unusual form of a simple, acute, somewhat posteriorly curving lobule, anything but firm in consistence, and without a trace of the usual fluted sculpturing.

The 1st pair of maxillæ (fig. 22) are provided, as in other Tanaids, with only a single narrow, linear masticatory lobe, armed at the point with numerous diverging spines,

udrettede Exognath er kortere end Tyggelappen og forsynet med 2 ulige lange Borster ved Spidsen.

2det Par Kjæver er som hos alle til denne Familie hørende Former ganske rudimentære, kun dannende et Par smaa, børstelose Lapper.

Kjævefødderne (Fig. 23) er ved Basis ubevægeligt forbundne med hinanden, skjøndt en tydelig median Sutur antyder deres Adskillelse. Tyggelappen er af uregelmæssig firkantet Form og uden tydelige Torner eller Borster. Palpen er vel udviklet og bestaar af 4, mere eller mindre pladeformigt udvidede Led, der i sin indre Kant bærer nogle faa, men stærke indadkrummede Borster; fra det lille ovale Endeled udgaar 4 saadanne.

Saxfødderne (Fig. 24) er temmelig kraftigt udviklede, med Leddene tykke og fyldte med stærke Muskler. Haanden er noget længere end det foregaaende Led (carpus), udvidet mod Enden og her i den forreste Kant forsynet med en kort takket Kam, der ogsaa fortsætter sig langs ad den bevægelige Finger. Den ubevægelige Finger ender med en temmelig stærk hageformig Spids og viser indenfor denne en fin Crenulering samt 2 korte Borster. Begge Fingre er noget kortere end Palmen og slutter, naar Saxen er lukket, temmelig nøie sammen, uden at Spidserne krydser hinanden mærkbart.

De egentlige Gangfødder er forholdsvis meget smaa og spinkle. De 3 forreste Par (Fig. 25) er indbyrdes omtrent af ens Udseende, kun sparsomt børstebesatte og ender med en lang børsteformig Klo. De 3 bagerste Par (Fig. 26), der i Modsætning til hine er rettede fortil, har de ydre Led temmelig rigeligt forsynede med Torner; Endekloen bestaar her af 2 tydelige Segmenter.

Bagkroppens Buglemmer (Fig. 27) er normalt udviklede og bestaar af et meget lidet Basalled, hvortil er fæstet 2 brede, ovale og indadbøiede Plader, der langs sin ene Kant er besatte med en Rad af udad i Længde successivt tiltagende Fjærborster.

Halevedhængene (Fig. 28) er noget længere end sidste Segment og har begge Grene, tydeligt 2-leddede, men meget ulige udviklede. Den ydre Gren er særdeles liden og tynd, neppe længere end Stammen og bærer ved Spidsen en enkelt lang Børste og en kortere i den ydre Kant. Den indre Gren er 3 Gange længere og betydelig tykkere. Dens 2 Led er omtrent af ens Længde, og det sidste har ved Spidsen 4 usædvanlig lange divergerende Borster.

Et af de erholdte Exemplarer (det Fig. 17 og 18 afbildede) var forsynet med fuldt udviklet Brystpose eller Klækkehule, hvoraf netop Ungerne var udkrobne, og viste derfor meget tydeligt dennes Sammensætning af 5 Par brede Plader, svarende til de 5 forreste frie Forkropssegmenter.

Farven er den sædvanlige, ensformigt hvide, uden al Pigmentering.

The posteriorly directed exognath is shorter than the masticatory lobe, and furnished at the point with 2 bristles, unequal in length.

The 2nd pair of maxillæ are, as in all forms belonging to this family, quite rudimentary, constituting merely a pair of small, bristleless lobes.

The maxillipeds (fig. 23) are at the base immovably connected, though a distinct median suture intervenes. The masticatory lobe is irregular-quadrate in form, and without distinctly developed spines or bristles. The palp is well developed, and consists of 4, more or less lamelliform-dilated joints, bearing on their inner margin a few strongly incurving bristles; 4 such may be observed to proceed from the small oval-shaped terminal joint.

The chelipeds (fig. 24) have rather a powerful development, with the joints thick, and furnished with strong muscles. The hand is somewhat longer than the preceding joint (carpus), dilated at the extremity, where it exhibits, on the anterior margin, a short, dentate comb, likewise produced along the movable finger. The immovable finger terminates in a comparatively strong, unguiform point, and exhibits, besides, a fine crenellation, together with 2 short bristles. Both fingers are somewhat shorter than the palm, and fit, when the chela is shut, tolerably close together, but without any obvious crossing of the points.

The true ambulatory legs are comparatively very small and feeble. The 3 anterior pairs (fig. 25) are very nearly uniform in appearance, but sparingly beset with bristles, and terminate in a long, setiform claw. The 3 posterior pairs (fig. 26) which, in contradistinction to the anterior, are directed forward, have the outer joints rather abundantly provided with spines: the terminal claw consists of 2 distinct segments.

The pleopoda (fig. 27) are normally developed, and consist of a very small basal joint, to which are attached 2 broad, oval, incurved plates, beset along one of the margins with a row of plumose bristles, increasing outwards successively in length.

The caudal appendages (fig. 28) are somewhat longer than the terminal segment, and have both branches distinctly two-jointed, but very unequal in development. The outer branch is exceedingly small and slender, scarcely at all longer than the stem, and bears at the point a long, isolated bristle and a shorter one on the outer margin. The inner branch is three times as long, and considerably thicker. Its two joints are well-nigh uniform in length, and the latter has at the point 4 unusually long, diverging bristles.

One of the specimens obtained (that represented in figs. 17 and 18) had a fully developed marsupium, or incubatory pouch, from which the young had just emerged; and hence the observer could plainly distinguish the 5 pairs of broad plates that compose it, corresponding to the 5 free anterior segments of the anterior division.

Colour, as usual, a uniform white, without a trace of pigment.

Længden af de erholdte Exemplarer var kun 2.80^{mm}. Ved vore Kyster har jeg fundet dem betydelig større.

Forekomst og Udbredning. Nogle faa Exemplarer af nærværende Art toges under Expeditionens 1ste Togt i Havnen ved Reikjavik paa 16—20 Favnes Dyb. Arten forekommer desuden ved Bohuslän (Lilljeborg) og langs hele Norges Kyst fra Kristiania til Vadso.

Length of the specimens collected not exceeding 2.80^{mm}. Off the coasts of Norway, I have met with considerably larger examples.

Occurrence and Distribution. — A few examples of the present species were taken on the first cruise of the Expedition, in Reikjavik harbour, at a depth of 16—20 fathoms. The species occurs, too, off Bohuslän (Lilljeborg), in Sweden, and along the whole coast of Norway, from Christiania to Vadso.

Gen. 1. **Typhlotanais.** G. O. Sars. 1881.

Revision af Gruppen Isopoda chelifera.

Slægtscharacteristik. Legemet mere eller mindre langstrakt, lineært, med kun svagt markerede Indsnoringer mellem Segmenterne. Ingen Øine eller Øienlober. 1ste Par Følere hos Hunnen 3-leddede, hos Hannen 6-leddede, med Basalleddet stort og pladeformigt udvidet. Kindbakkerne kraftigt udviklede, med cylindrisk, i Enden knudret Tyggefortsats. Saxfodderne af ens Udseende hos begge Kjøn, afsmalnende mod Enden, med Haanden forholdsvis smal og Fingrene simple. De 3 bagerste Par Gangfødder kortere end de foregaaende, med opsvulmet Basalled. Bagkroppens Buglemmer hos begge Kjøn vel udviklede. Halevedhængene tvegrenede, med Grenene 1- eller 2-leddede. Brystposen hos Hunnen af normal Bygning.

Bemærkninger. Fra de 2 foregaaende Slægter er denne let kjendelig derved, at 1ste Par Følere hos Hunnen kun bestaar af 3 Led. Fra Slægten Paratanais, med hvilken den, hvad den ydre Habitus angaar, stemmer mest overens, skilles den ved den fuldstændige Mangel af Øine og Øienlober samt ved Kindbakkernes afvigende Bygning.

Slægten indbefatter for Tiden ikke mindre end 10 forskjellige Arter, hvoraf 1 middelhavsk, Resten nordiske. Alle dens Arter er ægte Dybvandsformer.

Gen. 3. **Typhlotanais,** G. O. Sars. 1881.

Revision af Gruppen Isopoda chelifera.

Generic Character. — Body more or less elongate, linear, with but faintly marked instrictions between the segments. No eyes or ocular lobes. First pair of antennæ, in female, three-jointed, in male six-jointed, with basal joint large and lamelliform-dilated. Mandibles powerfully developed, with a cylindric, at the extremity rugged, masticatory projection. Chelipeds of uniform appearance in both sexes, tapering toward the extremity, with the hand comparatively slender and the fingers simple. The 3 posterior pairs of ambulatory legs shorter than the preceding, with the basal joint tumid. Pleopoda well developed in both sexes. Caudal appendages biramous, with the branches either one or two-jointed. Marsupium of female normal in structure.

Remarks. — From the 2 preceding genera, this genus may be easily recognized by the 1st pair of antennæ, in the female, consisting of but 3 joints. From the genus Paratanais, with which, as regards its outer habitus, it approximates closest, it differs in the total want of eyes and ocular lobes, and in the deviating structure of the mandibles.

The genus comprises at present 10 different species, 1 occurring in the Mediterranean, while the rest are exclusively Northern. All of the species are true deep-sea forms.

16. Typhlotanais cornutus, G. O. Sars. n. sp.

(Pl. VII, Fig. 29—38).

Paratanais cornutus, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 5.

Typhlotanais cornutus, G. O. Sars, Revision af Gruppen Isopoda chelifera. pg. 38.

Artscharacteristik. ♀ Legemet usædvanlig kort og undersætsigt, neppe mere end $4^1/_2$ Gang længere end bredt. Hovedskjoldet af samme Brede som Længde, til Siderne jevnt convext, fortil i Midten udgaaende i en tilspidset rostrumlignende Fortsats. 1ste frie Segment meget kort. Bagkroppen af samme Brede som Forkroppen, med sidste Segment forholdsvis kort. 1ste Par Folere af Hovedskjoldets Længde, med 1ste Led længere end de 2 ovrige tilsammen, sidste Led meget smalt og forsynet med lange Endeborster. Saxfodderne temmelig kraftigt udviklede, men med forholdsvis liden og smal Haand; Fingrene kortere end Palmen. Basalleddet paa de 3 sidste Par Gangfødder stærkt opsvulmet. Halevedhængene korte, med begge Grene 2-leddede, den indre noget længere end den ydre. Farven hvid. Længden 1,65^{mm}.

Findested. Stat. 290.

Bemærkninger. Nærværende Art udmærker sig fra de fleste ovrige til denne Slægt hørende Arter ved sin usædvanlig korte og undersætsige Kropsform, den i Midten til en tilspidset Fortsats uddragne Panderand og de usædvanlig lange Borster paa Spidsen af 1ste Par Folere. I alle disse Punkter viser den en stor Lighed med en anden af mig ved vor Vestkyst funden Art, *T. penicillatus*, som dog let kjendes fra samme ved sine betydeligt længere og tyndere 1ste Par Folere, de langt svagere byggede Saxfødder og de stærkere forlængede Halevedhæng. I Munddelenes Bygning stemmer disse to Arter paa det noieste overens med de ovrige Arter af Slægten.

Beskrivelse af Hunnen. Legemets Form er (se Pl. VII. Fig. 29 og 30), som anført, i Sammenligning med Slægtens ovrige Arter usædvanlig kort og undersætsig, idet den største Brede indeholdes $4^1/_2$ Gang i Længden. Ovenfra seet (Fig. 29) er Legemet næsten overalt af ens Brede, kun i sin forreste og bageste Del ubetydelig afsmalnende.

Integumenterne er forholdsvis tynde og halvgjennemsigtige, saa at flere af de indre Dele tydeligt sees igjennem samme.

Hovedskjoldet er temmelig stort, af samme Brede som Længde og til Siderne jevnt hvælvet samt udmærket derved, at Panderanden ikke som sædvanlig er lige afskaaret, men i Midten uddraget til en mellem Roden og 1ste Par Folere fremskydende tilspidset Fortsats eller Pandehorn.

16. Typhlotanais cornutus, G. O. Sars. n. sp.

(Pl. VII. figs. 29—38).

Paratanais cornutus, G. O. Sars. Crustacea et Pycnogonida nova etc., No. 5.

Typhlotanais cornutus, G. O. Sars. Revision af Gruppen Isopoda chelifera. p. 38.

Specific Character. — ♀ Body remarkably short and thickset, but very little, if at all, more than $4^1/_2$ times longer than broad. Cephalic shield of same breadth as length, uniformly convex at the sides, jutting forth anteriorly from the middle, as an acute, rostrum-like projection. First free segment exceedingly short. Abdomen of same breadth as anterior division, with last segment comparatively short. First pair of antennæ equal in length to cephalic shield, with 1st joint longer than the 2 others taken together, last joint exceedingly slender, and furnished with long terminal bristles. Chelipeds rather powerfully developed, but with a small and slender hand; fingers shorter than palm. Basal joint of 3 last pairs of ambulatory legs extremely tumid. Caudal appendages short, with both branches two-jointed, inner somewhat longer than outer. Colour white. Length 1,65^{mm}.

Locality. — Stat. 290.

Remarks. — The present species is distinguished from most other forms belonging to this genus by its remarkably short and thickset form of body, by the frontal margin jutting out in the middle as an acute projection, and by the unusually long apical bristles of the 1st pair of antennæ. In all these characteristics, the animal presents very considerable resemblance to another species I have met with off the Norwegian coast, viz. *T. penicillatus*, easily recognized however from the former by its very much longer and more slender 1st pair of antennæ, the far weaker structure of the chelipeds, and the more elongate caudal appendages. In the structure of the oral parts, these two species exhibit the most perfect agreement with the other species of the genus.

Description of the Female. — The form of the body is (see Pl. VII. figs. 29 and 30), as stated above, in comparison with that in the other species of the genus, remarkably short and thickset, the greatest breadth being contained not more than $4^1/_2$ times in the length. Viewed from above (fig. 29), the body appears almost everywhere uniform in breadth, tapering but very slightly in its anterior and posterior parts.

The integuments are comparatively thin and semitranslucent, so that several of the inner parts may be distinctly seen through them.

The cephalic shield is rather large, of the same breadth as length, and uniformly arched at the sides, as also characterized by the frontal margin not being, as usual, abruptly truncate, but jutting out from the middle, between the bases of the 1st pair of antennæ, as an acutely pointed projection, or rostrum.

De frie Forkropssegmenter er kun ved smaa og smale laterale Indsnit adskilte fra hinanden. Det forreste er betydelig kortere end de øvrige, som omtrent er dobbelt saa brede som lange.

Bagkroppen er af sædvanligt Udseende og har sidste Segment meget kort og bagtil stumpt tilrundet.

Af Øine eller særskilte fra Hovedskjoldet afgrændsede Øienlober er der ligesaalidt som hos Slægtens øvrige Arter noget Spor at bemærke.

1ste Par Følere (Fig. 31) er omtrent af Hovedskjoldets Længde og bestaar kun af 3 Led, der hurtigt aftager i Tykkelse mod Enden. 1ste Led er temmelig bredt ved Basis, længere end de 2 øvrige tilsammen og langs sin indre Kant forsynet med en Rad af Børster. Sidste Led er meget smalt, lineært og bærer ved Spidsen et Knippe af usædvanlig lange Børster.

2det Par Følere (Fig. 32) er omtrent af samme Længde som 1ste Par, men meget tyndere, og udmærket ved den betydelige Længde af de 2 midterste Led.

Kindbakkerne (Fig. 33) viser den for Slægten characteristiske Bygning. De er i Modsætning til hvad Tilfældet er hos foregaaende Slægt kraftigt udviklede og helt igjennem stærkt incrusterede, med forholdsvis stort, kileformigt Corpus. Den forreste tandbærende Gren gaar i lige Flugt med Corpus, men bøier sig ved Enden vinkelformigt indad og viser en lignende Forskjel i Bevæbningen paa høire og venstre Kindbakke som hos foregaaende Slægt. Tyggefortsatsen udgaar fra Corpus under en ret Vinkel og er af cylindrisk Form, dog noget udvidet mod Enden og her bevæbnet med et Antal af stærke knudeformige Udvæxter.

De øvrige Munddele viser intet usædvanligt i sin Bygning.

Saxfodderne (Fig. 34) er vistnok kraftigt byggede, men har som hos Slægtens øvrige Arter selve Haanden forholdsvis liden og smal samt kortere end det foregaaende Led (carpus). Fingrene er simple, uden nogen bemærkelig Crenulation og noget kortere end Palmen.

De 3 følgende Fodpar (Fig. 35) er af meget spinkel Form, med Basalleddet ganske smalt og Endekloen tynd, børsteformig. De 3 bagerste Par (Fig. 36) er temmelig ulig disse, betydelig kortere og har Basalledet meget tykt og opsvulmet.

Bagkroppens Buglemmer (Fig. 37) er vel udviklede, med tæt børstebesatte Endeplader.

Halevedhængene (Fig. 38) er forholdsvis smaa, men forsynede med 2 vel udviklede og tydeligt 2-leddede Grene, hvoraf den indre er noget, skjøndt ikke meget længere end den ydre.

Farven er den sædvanlige hvide, her dog paa Grund af Integumenternes Tyndhed mindre ren.

Længden af de største erholdte Exemplarer er kun lidet over $1^1/_2{}^{mm}$.

The free segments of the anterior division of the body are separated from one another only by small and narrow lateral incisions. The foremost is considerably shorter than the rest, which are about twice as broad as long.

The posterior division of the body is of the usual appearance, and has the last segment exceedingly short and, posteriorly, obtusely rounded.

Of eyes, or of ocular lobes separated from the cephalic shield, there was, as in the other species of the genus, no trace to be detected.

The 1st pair of antennæ (fig. 31) are about of the same length as the cephalic shield, and consist of only 3 joints, rapidly diminishing in thickness toward the extremity. The 1st joint is rather broad at the base, longer than the 2 others taken together, and furnished on its inner margin with a row of bristles.

The 2nd pair of antennæ (fig. 32) are about of the same length as the 1st pair, but much more slender, and characterized by the considerable length of the 2 median joints.

The mandibles (fig. 33) exhibit the structure peculiar to the genus. Contrary to what is the case in the preceding genus, they are powerfully developed, and strongly incrusted throughout, with a comparatively large, wedge-like corpus. The foremost dentiferous branch extends in the same plane as the corpus, bending however straight inward at the extremity, and exhibiting a difference in the armature on the right and left mandibles similar to that observed in the preceding genus. The molar projection springs at right angles from the corpus; it is cylindrical in form, though somewhat dilated at the extremity, where it has a number of strong, tuberculiform protuberances.

The remaining oral appendages exhibit nothing unusual in their structure.

The chelipeds (fig. 34) are, indeed, powerfully developed, but have, as in the other species of the genus, the hand itself rather small and narrow, as also shorter than the preceding joint (carpus). The fingers are simple, without any obvious crenellation, and somewhat shorter than the palm.

The 3 succeeding pairs of legs (fig. 35) are exceedingly feeble in structure, with the basal joint quite narrow, and the terminal claw slender, setiform. The 3 posterior pairs (fig. 36) differ a good deal from these, being shorter and having the basal joint exceedingly thick and swollen.

The pleopods (fig. 37) are well developed, with densely setiferous terminal plates.

The caudal appendages (fig. 38) are comparatively small, but furnished with 2 well developed and distinctly two-jointed branches, of which the inner is somewhat, though not much, longer than the outer.

Colour, as usual, white, but less pure in this animal, owing to the great tenuity of the integuments.

Length of the largest specimens taken but very little more than $1^1/_2{}^{mm}$.

Forekomst og Udbredning. Af den her omhandlede meget distincte Art blev under Expeditionens sidste Togt en Del Exemplarer optagne fra et Dyb af 190 Favne omtrent midt imellem Beeren Eiland og Finmarken (Stat. 290). Ved nylig at gjennemgaa det paa mine forskjellige Reiser indsamlede Materiale af Tanaider, finder jeg ogsaa et Par Exemplarer af samme Art fra vor nordlige Kyst (Hammerfest).

Dens for Tiden bekjendte Udbredning synes saaledes at indskrænke sig til Havet omkring Norges nordlige Kyster og Beeren Eiland.

Occurrence and Distribution. — Of the very distinctly characterized species described above, a number of specimens were taken, on the last cruise of the Expedition, at a depth of 190 fathoms, about midway between Beeren Eiland and Finmark (Stat. 290). Lately, on reviewing the material comprising the Tanaid group collected on my various exploratory excursions, I lighted on a few specimens of the species from the north coast of the country (Hammerfest).

The distribution of this form is therefore, apparently, at present confined to the sea off the northern shores of Norway and that surrounding Beeren Eiland.

Trib. 2. Flabellifera.

Bemærkninger. Under denne Tribus henfører jeg alle de Isopoder, hos hvem de bagerste Par Buglemmer sammen med sidste Segment danner en mere eller mindre tydelig Halevifte. Jeg har fundet, at disse Former ogsaa i flere andre Henseender frembyder Overensstemmelser indbyrdes, og derfor fortjener at sammenfattes som en særegen større Afdeling af Isopoderne. Følgende Familier hører herhen: Anthuridæ, Anceidæ, Cymothoidæ (incl. Ægidæ & Cirolanidæ), Serolidæ, Sphæromidæ (incl. Limnoriidæ).

Trib. 2. Flabellifera.

Remarks. — To this tribe I refer all Isopods in which the posterior pair of abdominal limbs, along with the last segment, constitute a more or less distinct caudal fan. I have found that the said forms also present agreement in several other respects, and hence afford warrantable grounds for classing them in a special, comprehensive section of the Isopods. The following families belong to this section: — The Anthuridæ, Anceidæ, Cymothoidæ (including the Ægidæ and the Cirolanidæ), Serolidæ, Sphæromidæ (including the Limnoriidæ).

Fam. **Anceidæ.**

Gen. **Anceus,** Risso, 1816.

Crustacés de Nice.

17. **Anceus stygius,** G. O. Sars.

(Pl. VIII, Fig. 1—22).

Anceus stygius, G. O. Sars, Prodromus descriptionis Crust. etc., No. 65.

Artscharacteristik. ♂ Legemet af aflang Form, 3 Gange længere end bredt, fortil noget afsmalnende, med særdeles haarde, piggede Integumenter. Hovedet mindre end sædvanligt, næsten pentagonalt, til hver Side forsynet med en i Midten afbrudt tandet Kjol. De frie Forkropssegmenter med grovt tandede Epimerer; de bagre Sidehjørner paa de 3 sidste udtrukne til skjævt udadrettede smale tandede Fortsatser; næstsidste Segment størst, oventil

Fam. **Anceidæ.**

Gen. **Anceus,** Risso, 1816.

Crustacés de Nice.

17. **Anceus stygius,** G. O. Sars.

(Pl. VIII, figs. 1—22).

Anceus stygius, G. O. Sars, Prodromus descriptionis Crust. etc., No. 65.

Specific Character. — ♂ Body oblong in form, 3 times longer than broad, forward somewhat tapering, with exceedingly hard, spiky integuments. Cephalic segment smaller than usual, almost pentagonal, furnished on either side with a dentate keel, disrupted in the middle. Free segments of anterior division with coarsely dentate epimera; posterior lateral corners on last 3 drawn out to oblique, exteriorly directed, slender, toothed projections: penultimate

i Midten ved en dyb Længdefure delt i 2 laterale Felter. Bagkroppen forholdsvis liden, oventil forsynet med en dobbelt Rad af korte Tænder: Epimererne tilspidsede og fremragende til Siderne. Intet Spor af Øine. Følerne korte, af ens Længde. Kindbakkerne mindre end sædvanlig, med en liden Afsats i den ydre Kant. Fødderne robuste, tæt haarede og forsynede med grove tandformige Knuder. Bagkropslemmerne med Endepladerne smale, uden Borster. Den midterste Haleplade stærkt indknebet bag Basis, med delvis tandede Kanter, Enden stumpt tilspidset. Sidevedhængene med smaa delvis tandede Endeplader. Farven hvidagtig med blaaligt Skjær. Længden indtil 12^{mm}.

Larven (Praniza) af sædvanlig Form med forholdsvis lidet triangulært Hovedsegment uden Spor af Øine. Klammerfødderne endende med en usædvanlig stærk og skarpt tilspidset Krog. Farven hvid, uden Pigment. Længden indtil 10^{mm}.

Findesteder. Stat. 35. 40. 51. 240. 248. 295. 312.

Bemærkninger. Nærværende anselige Art, den største hidtil bekjendte af Slægten, er let kjendelig fra alle tidligere beskrevne Former ved sit aflange, stærkt piggede Legeme, forholdsvis lille Hovedsegment og den fuldstændige Mangel af Øine saavel hos den fuldt udviklede Han som hos Larven.

Beskrivelse af Hannen. Legemet er (se Pl. VIII, Fig. 1 og 2) i Sammenligning med de øvrige bekjendte Arter temmelig langstrakt, med den største Brede neppe større end $^1/_3$ af Længden, forøvrigt af den sædvanlige stærkt nedtrykte Form, med Segmenterne adskilte ved dybe laterale Indsnit.

Integumenterne er særdeles haarde og rue af talrige Pigger eller Torner, som især langs Sidekanterne af Legemet er af betydelig Størrelse. Paa visse Steder er de ogsaa tæt besatte med lange fine Haar.

Hovedet er betydelig smalere end den bagenfor liggende Del af Forkroppen og næsten af pentagonal Form, bagtil convext, fortil i Midten concaveret og til hver Side forsynet med 2 tandede Kjøle, hvoraf den ene indtager Sidekanterne og er afbrudt paa Midten, medens den anden begrændser den fordybede trekantede Mundarea (se Fig. 3). Panderanden er i Midten temmelig stærkt fremspringende og til hver Side begrændset af en tornformig, i den ene Kant tandet Fortsats (Supraorbitalfortsatsen). Lige bag Hovedet, imellem dette og Forkroppen, findes paa Rygsiden indskudt en smal halvmaaneformig Plade, der egentlig repræsenterer Dorsaldelen af et særskilt til Forkroppen hørende Segment, hvis Sternaldele dog ganske er sammensmeltede med Hovedet (se Fig. 3).

Af tydeligt udviklede frie Forkropssegmenter findes som hos Slægtens øvrige Arter tilsyneladende kun 5. De 2 første af disse er ganske korte, med stærkt udstaaende, i Enden afstumpede og grovt tandede Epimerer. 3die Segment er betydelig større end disse, med den bagre Rand i Midten noget udbuet og de bagre Sidehjørner ligesom paa de

segment largest; above, divided in the middle, by a deep longitudinal sulcus, into 2 lateral areas. Abdomen comparatively small, furnished above with a double row of short teeth; epimera pointed, and projecting toward the sides. No trace of eyes. Antennæ short and of one length. Mandibles smaller than usual, with a minute projection on the outer margin. Legs robust in structure, densely clothed with hair, and furnished with coarse, dentiform protuberances. Terminal plates of pleopoda narrow, and without bristles. Median caudal plate very considerably instricted behind the base, and with partially dentate margins, extremity obtusely pointed. Colour whitish, with a tinge of blue. Length reaching 12^{mm}.

Larva (Praniza) of the usual form, with a comparatively small, triangular cephalic segment, exhibiting no trace of eyes. Prehensile legs, terminating in a remarkably strong and acutely pointed hook. Colour white, without pigment. Length reaching 10^{mm}.

Locality. — Stats. 35. 40. 51. 240. 248. 295. 312.

Remarks. — The present species, the largest hitherto obtained of the genus, may be readily distinguished from all other described forms by its oblong and excessively spiky body, the comparatively small cephalic segment, and the total absence of eyes, alike in the fully developed male and in the larva.

Description of the Male. — The body (see Pl. VIII, figs. 1, 2) is, when compared with the other known species, considerably elongate, its greatest breadth scarcely exceeding one-third of the length; for the rest, it exhibits the usual greatly depressed form, and has the segments separated by deep incisions.

The integuments are exceedingly hard and rough, a result of the numerous spikes or spines, which, more especially along the lateral margins of the body, are of considerable size. In certain places, they are also densely covered with long, delicate hairs.

The head is much narrower than any of the succeeding segments, and almost pentagonal in form, posteriorly convex, anteriorly, in the middle, concave, and on either side furnished with 2 dentate carinæ, of which the one, that occupying the lateral margins, is disrupted in the middle, while the other bounds the depressed, triangular buccal area (see fig. 3). The frontal border projects considerably in the middle, and is bounded on either side by a spiniform, along one of its margins dentate projection (the supraorbital projection). Immediately posterior to the head, between that part and the first free segment, occurs, inserted on the dorsal side, a narrow lunate plate, that, strictly, represents the dorsal section of a separate segment belonging to the anterior division of the body, the sternal parts of which are, however, wholly connate with the head (see fig. 3).

Of distinctly developed free segments belonging to the anterior division, occur, as in the other species of the genus, apparently but 5. The 2 first are quite short, with strongly projecting epimera, obtuse at the extremity and coarsely dentate. The 3rd segment is considerably larger than the preceding, with the posterior margin somewhat

2 følgende Segmenter udtrukne i en tornformig tandet Fortsats, der er noget skjævt udadrettet. 4de Segment er det største af alle og viser oventil i Midten en dyb Længdefure, hvorved dets dorsale Del bliver delt i 2 symmetriske Sidefelter. Sidste Forkropssegment er noget smalere end det foregaaende, med den bagre Kant dybt udrandet og de til hver Side af Udrandningen udgaaende laterale Fortsatser betydelig længere end paa de 2 foregaaende Segmenter. Paa Ventralsiden er (se Fig. 2) de 2 sidstnævnte Segmenter ufuldstændige, idet Kropsvæggen her indtages af en blød, ikke incrusteret Hud, der dog undertiden i Midten viser 2 symetriske forkalkede Plader. Helt bagtil bemærkes desuden en kort halvmaaneformig buet Plade, der egentlig, som af Prof. Dohrn først paavist,[1] repræsenterer den ventrale Del af et særskilt Segment. Ved nøiere Undersøgelse vil man ogsaa lægge Mærke til, at der mellem For- og Bagkrop paa Rygsiden er indskudt en lignende smal Plade, som den, der findes mellem Hoved og Forkrop. Denne Plade er at betragte som den dorsale Del af samme Segment. Herved faar man altsaa ud det normale Antal Forkropssegmenter, nemlig 7, hvoraf dog kun de 5 midterste er fuldstændigt udviklede, idet det 1ste delvis er gaaet op i Hovedets Dannelse, medens det sidste, ikke blot er ganske rudimentært, men endog mangler ethvert Spor af Lemmer.

Bagkroppen er meget liden og smal, neppe indtagende $^1/_4$ af Totallængden og bestaar egentlig af 6 Segmenter, hvoraf dog det sidste er omformet paa en eiendommelig Maade, dannede sammen med Halevedhængene en saakaldt Halevifte, i Lighed med hvad Tilfældet er hos høiere Crustaceer (Macrurer og Schizopoder). De 5 egentlige Bagkropssegmenter er ganske korte og af ens Udseende, med tilspidsede og udadrettede Epimerer, der paa de bagerste Segmenter synes at være dobbelte. Langs ad Rygsiden findes en dobbelt Rad af korte tandformige Fortsatser, hvorved hele denne Kropsdel i Gjennemsnit faar et kantet Udseende.

Øine mangler, i Modsætning til hvad Tilfældet er hos de øvrige bekjendte Arter, ganske og aldeles, og Integumenterne viser paa det Sted, hvor disse Organer skulde findes, ikke det mindste Spor af nogen Forandring, hverken hvad Farve eller Structur angaar.

De 2 Par Følere er fæstede tæt sammen ved de forreste Sidehjørner af Hovedet, umiddelbart indenfor Supraorbitalfortsatserne. De er forholdsvis smaa og indbyrdes omtrent af ens Længde, men viser et noget forskjelligt Forhold af de dem sammensættende Led.

1ste Par Følere (Fig. 4), der er fæstede lige over det 2det Par, bestaar af et 3-leddet Skaft og en kort 5-leddet Svøbe. Af Skaftets Led er det sidste stærkt forlænget og næsten saa langt som de 2 øvrige tilsammen. 2det Led bærer ved Enden i den ene Kant 2 saakaldte Horeborster.

[1] Untersuchungen über Arthropoden.

arched in the middle, and having the posterior latera corners, as in the 2 succeeding segments, drawn out to a spiniform, dentate projection, taking a somewhat oblique, outward course. The 4th segment is the largest of all, and exhibits above, in the middle, a deep, longitudinal sulcus, dividing the dorsal part into 2 symmetrical lateral areas. The last segment of the anterior division is a trifle narrower than the preceding one, with its posterior margin deeply emarginate, and having the lateral projections jutting forth from either side of the emargination considerably farther than on the 2 preceding segments. On the ventral side (see fig. 2), the 2 last-mentioned segments are incomplete, the wall of the body consisting here of a soft, non-incrusted pellicle, which, however, in some specimens, exhibits 2 symmetrical, calcareous plates. Moreover, far behind, is observed a small lunate, arched plate, that, strictly, as first pointed out by Professor Dohrn,[1] represents the ventral part of a separate segment. On closer examination will also be detected, between the anterior and posterior divisions of the body, inserted on the dorsal side, a narrow plate, similar to that occurring between the head and the trunk. This plate must be regarded as the dorsal part of the same segment. Thus, we have the normal number of segments belonging to the anterior division, viz. 7, but of which the 5 median only are fully developed, the first segment going in part to the formation of the head, while the last is not only quite rudimentary, but fails even to exhibit the slightest trace of limbs.

The posterior division of the body is very small and slender, measuring scarcely one-fourth of the total length; it consists, strictly, of 6 segments, the last transformed in a peculiar manner, constituting, as in more highly organized Crustaceans (Macrurans and Schizopods), together with the last pair of pleopods, a so-termed caudal fan. The 5 true abdominal segments are quite short and uniform in appearance, with pointed and outward-directed epimera, which, on the posterior segments, would appear to be double. Along the dorsal side, occurs a double series of short, dentiform projections, giving to the greater part of this division of the body an angulous appearance.

Eyes entirely wanting, contrary to what is the case in all other known species; and the integuments, where these organs might be looked for, do not present a trace of change, as regards either colour or structure.

The 2 pairs of antennæ are attached close together, at the foremost lateral corners of the head, immediately within the supraorbital projections. They are comparatively small, and well-nigh uniform in length, but differ somewhat in relation to the joints composing them.

The 1st pair of antennæ (fig. 4), attached immediately above the 2nd pair, consist of a three-jointed peduncle and a short, five-jointed flagellum. Of the joints of the peduncle, the last is very considerably produced, being almost as long as the 2 others taken together. The 2nd joint bears at

[1] Untersuchungen über Arthropoden.

Svøben er omtrent af samme Længde som Skaftets sidste Led og særdeles tynd. Dens 1ste Led er meget lidet saa at det let vil kunne overses: derimod er de 2 følgende Led temmelig forlængede, og ethvert af dem længere end de 2 sidste Led tilsammen. Foruden nogle simple Børster er til Enden af hvert af de 3 sidste Led fæstet en klar stavformig Sandseborste.

Paa 2det Par Folere (Fig. 5) kan ligeledes adskilles Skaft og Svøbe; men Skaftet bestaar her af 5 Led, hvoraf de 3 første er meget korte og delvis saugtakkede i Kanterne, medens sidste Led ogsaa her er stærkt forlænget og ved Spidsen forsynet med 4 stærkt udviklede Høreborster. Svøben er noget længere end Skaftets sidste Led og jevnt afsmalnende mod Spidsen samt sammensat af 8 korte, med simple Børster besatte Led.

De saakaldte Kindbakker (Fig. 6), der dog, som ſaf Prof. Dohrn (l. c.) paavist, baade ifølge sin Stilling i Forhold til Mundaabningen og sin Udvikling, neppe kan betragtes som homologe med Kindbakkerne hos andre Crustaceer, er fæstede til Hovedets forreste Rand og rager frit frem foran samme, idet de som Tænger kan bevæges i horizontal Retning imod hinanden. De er i Sammenligning med andre Arter ikke meget store, med af den sædvanlige Form, noget indknebne ved Basis og pladeformigt udvidede mod Enden, med Spidsen leformigt indadkrummet og den indre Kant tilskjærpet og glat, dannende paa Midten en fremstaaende Vinkel. Ligeoverfor denne Vinkel bemærkes paa den ydre convexe Rand en liden, noget uregelmæssig Afsats som Antydning til et tandformigt Fremspring.

Af andre Munddele er kun 2 Par tilstede, der er fæstede til det bagerste Parti af Hovedsegmentet og ligeledes i betydelig Afstand fra selve Mundaabningen. Denne sidste sees som en ubetydelig simpelt cirkelformig eller noget elliptisk Aabning omtrent i Midten af den fordybede Mundarea (se Fig. 3).

Det ene af disse Par (Fig. 7) udspringer tæt sammen ved den bagerste Del af Mundarean (se Fig 3) og dækkes fuldstændigt af det 2det Par (se fig. 2). Saavel ifølge sin Beliggenhed som Bygning er det heromhandlede Par Lemmer at opfatte som de egentlige Kjævefødder, hvoraf altsaa følger, at Kjæver ganske mangler. De er af blød og membranos Beskaffenhed samt halvt gjennemsigtige og bestaar af en bred muskuløs Basaldel, der paa den indre Side løber ud i en kort fingerformig Fortsats (Tyggelap), og en mod Spidsen noget afsmalnende Endedel eller Palpe. Denne er sammensat af 4 pladeformige Led eller Segmenter, hvoraf det 2det er størst. Alle disse Led er langs sin ydre Kant forsynede med en regelmæssig Rad af stærke, udadbøiede Fjærborster.

Det 2det Par til Hovedsegmentet fæstede Lemmer (Fig. 8) viser et meget eiendommeligt Udseende, idet de som et Par mægtige Valvler hvælver sig over den hele

the extremity, on one side, 2 so-called auditory bristles. The flagellum is about of the same length as the last joint of the peduncle, and remarkably slender. Its 1st joint is very small, so minute indeed as to be easily overlooked; on the other hand, the 2 succeeding joints are rather elongate, each being longer than the 2 terminal joints taken together. Exclusive of a few simple bristles, a pellucid, baculiform, sensory bristle is attached to the extremity of each of the 3 terminal joints.

On the 2nd pair of antennæ (fig. 5), a peduncle and a flagellum can likewise be distinguished; but the peduncle consists of 5 joints, of which the 3 first are very short, and in part serrate along the margins, whereas the last joint is here, too, very considerably elongate, and at the point provided with 4 strongly developed auditory bristles. The flagellum is somewhat longer than the last joint of the peduncle, and tapers gradually toward the point: it consists of 8 short joints, beset with simple bristles.

The so-called mandibles (fig. 6), which, however, as pointed out by Professor Dohrn (l. c.), both regarding their position relative to the buccal orifice and their general development, can scarcely be held as homologous with the mandibles in other Crustaceans, are attached to the foremost margin of the head, and project freely forward before it, admitting of being moved horizontally one toward the other, like a pair of forceps. They are, as compared with other species, not particularly large, but of the usual form, somewhat constricted at the base and lamelliform-dilated toward the extremity, with the point falciform-incurved, and the inner margin sharp and smooth and forming in the middle a protuberant angle. Opposite to this angle, is observed, on the outer convex margin, a small, somewhat irregular ledge, constituting a rudiment of the usual dentiform projection.

Of other oral appendages 2 pairs only are present, attached to the hindermost part of the cephalic segment, and likewise at a considerable distance from the buccal orifice. The latter has the appearance of a small, circular, or somewhat elliptic, opening, placed about in the middle of the depressed buccal area (see fig. 3).

One of these pairs (fig. 7) spring, close together — and wholly covered by the 2nd pair (see fig. 2) — from the hindermost portion of the buccal area (see fig. 3). Both by reason of their position and their structure, the said pair of appendages must be regarded as the true maxillipeds: and hence maxillæ are entirely wanting. They are soft and membranous in character, as also semi-translucent, and consist of a broad, muscular basal portion, which, on the inner side, juts out as a short, dactyliform projection (masticatory lobe), and of a somewhat tapering terminal portion, or palp. The latter is composed of 4 lamelliform joints, or segments, of which the 2nd is largest. All these joints are furnished along their outer margin with a regular series of strong, outward-curving, plumose bristles.

The 2nd pair of appendages (fig. 8), attached to the cephalic segment, present a very peculiar appearance, arching over as they do, like a pair of enormous valves, the whole of the

Mundarea og i Midten endog delvis griber over hinanden (se Fig. 2). De udspringer vidt adskilte nær Sidekanterne af Hovedsegmentet (se Fig. 3) og bestaar kun af 2 tydelige Segmenter. Det yderste af disse er ganske lidet og af oval Form, hvorimod det 1ste er overordentlig stort, dannende en bred hvælvet Plade af afrundet triangulær Form og langs den indre stærkt buede Rand forsynet med en regelmæssig Rad af Fjærborster. I Midten af Pladen findes 3 meget iøinefaldende kalkagtige Concretioner, der giver disse Plader en betydelig Grad af Fasthed. De her omhandlede Lemmer maa egentlig, som Prf. Dohrn rigtigt bemærker, betragtes som et eiendommeligt modificeret Fodpar, tilhørende det rudimentære mellem Hovedet og Kroppen beliggende Segment. Da de imidlertid saavel hvad Bygning som Stilling angaar nærmest slutter sig til Mundpartiet, kan de passende benævnes accessoriske Kjævefødder.

Af egentlige Fødder findes som hos de øvrige Arter af Slægten kun 5 Par. Disse er (Fig. 9) af kraftig Bygning, tæt besatte med lange Borster og delvis med grove Tænder. Af de 5 Led er det 1ste størst og omtrent saa langt som de 3 følgende tilsammen. Sidste Led danner med det foregaaende en meget bevægelig Articulation og bærer i Spidsen en kraftig, krummet Klo.

Det enkle Kjønsvedhæng, der er beliggende (se Fig. 2) paa Ventralsiden ved Enden af Forkroppen og støttet af en smal Chitinliste, er meget lidet, neppe fremragende.

Bagkroppens Buglemmer (Fig. 10) bestaar af en kort Basaldel og 2 smalt tungeformige Grene, hvoraf den indre er længst. Begge Grene mangler ethvert Spor af Borster, og disse Lemmer kan følgelig heller ikke fungere som Svømmeredskaber, hvorimod Structuren af Endepladerne snarere synes at antyde, at de staar i Respirationens Tjeneste.

Halevedhængene (Fig. 11) danner som hos de øvrige til denne Gruppe hørende Former en fuldstændig Halevifte.

Det midterste Halevedhæng, der egentlig forestiller sidste Bagkropssegment, er omtrent saa langt som de 4 foregaaende Segmenter tilsammen og ved Basis ligesaa bredt som disse; den ydre Del er imidlertid meget smal, næsten lancetdannet med stump tilspidset Ende. Langs Kanterne ligesom paa den øvre Flade findes talrige Smaapigge; derimod mangler de sædvanlige Endeborster.

De ydre Halevedhæng er adskilligt kortere end det midterste, til hvis Basis de er indleddede, og bestaar af en kort, men bred Basaldel, der indad gaar ud i en tungeformig Flig, og 2 smalt ovale Endeplader, hvoraf den indre er lidt større end den ydre. Begge Plader viser i Kanterne en Del uregelmæssige tandformige Fremspring og er desuden mod Enden i den indre Kant forsynede med nogle tynde ciliærede Borster, hvis Antal er størst paa den indre Plade.

Farven er hvidagtig med et tydeligt blaaligt Skjær. De blødere hudagtige Partier mellem Segmenterne og paa Ventralsiden viser en dyb mørkeviolet Farvetone.

Længden gaar op til fulde 12^{mm}, og den er saaledes

buccal area, and in the middle even overlapping each other (see fig. 2). They take their origin, widely apart, in close proximity to the lateral margins of the cephalic segment (see fig. 3), and consist of only 2 distinct segments, the outermost quite small and oval in form, whereas the other is exceedingly large, constituting a broad, arcuate plate, rounded-triangular, and furnished along its inner, exceedingly vaulted margin with a regular series of plumose bristles. In the middle of the plate, occur 3 very conspicuous calcareous concretions, that give to these plates considerable firmness. The appendages treated of here must, too, strictly, as Professor Dohrn with just appreciation observes, be regarded as a peculiar, modified pair of legs, belonging to the rudimentary segment placed between the head and the first free segment. Meanwhile, since, as regards alike their structure and their position, they approximate closest the buccal region, they may not improperly be termed accessory maxillipeds.

Of legs, in a strict sense, there occur, as in the other species of the genus, only 5 pairs. These are (fig. 9) powerful in structure, closely beset with long bristles, and furnished in places with coarse teeth. Of the 5 joints, the 1st is the largest, and about as long as the following 3 taken together. The last joint constitutes, along with the preceding one, a very mobile articulation, and bears at the point a powerful, curving claw.

The simple sexual appendix placed (see fig. 2) on the ventral side, at the extremity of the anterior division, and strengthened by a slender chitinous fillet, is exceedingly small, and projects but very slightly.

The pleopoda (fig. 10) consist of a short basal portion and 2 slender, linguiform branches. On neither of the branches can a trace of bristles be detected; and hence, too, these appendices, are unadapted to perform the function of natatory organs; nay, judging from the structure of the terminal plates, they would rather appear promotive of respiration.

The caudal appendages (fig. 11) form, as in the other species belonging to this group, a true caudal fan.

The median caudal plate, representing, strictly, the last abdominal segment, is about as long as the 4 preceding segments taken together, and at the base equal in breadth to the latter; the outer portion, however, is exceedingly narrow, almost lanceolate, with an obtusely pointed extremity. Along the margins, as also on the upper surface, occur numerous minute spikes, whereas the usual terminal bristles are wanting.

The outer caudal appendages are a good deal shorter than the telson, to the base of which they are jointed, and consist of a short and broad basal portion, jutting out inward as a linguiform lappet, and 2 slenderly ovate terminal plates, of which the inner is a trifle larger than the outer. Both plates exhibit along the margins a number of dentiform projections, and, moreover, are furnished toward the extremity, on the inner margin, with a few slender ciliated bristles, greatest in number on the inner plate.

Colour whitish, with a distinct shade of blue. The softer cutaneous parts between the segments and on the ventral side have a deep, dark-violet tinge.

Length reaching fully 12^{mm}; hence, this animal is

betydelig større end nogen af de tidligere bekjendte Arter af Slægten.

Beskrivelse af Larven (Praniza). Legemet viser (Fig. 12 og 13) den characteristiske tendannede Praniza-Form; men forholder sig noget ulige hos ulige store Individer.

Integumenterne er betydelig tyndere end hos den fuldvoxne Han, halvt gjennemsigtige samt mangler baade Børster og Pigge. Ved stærk Forstørrelse viser de derimod en tydelig granuleer Skulptur.

Hovedsegmentet er af smal triangulær Form, bredest bagtil og med en meget bemærkelig Indknibning bag Følernes Insertion. Fortil gaar det ud i et tilspidset Næb, der for en stor Del dannes af de eiendommeligt modificerede stikkende Munddele.

Af de 5 Forkropssegmenter er de 2 første altid meget korte forsynede med jevnt afrundede Epimerer. De 3 følgende Segmenter er kun hos ganske unge Exemplarer (Fig. 12) tydeligt begrændsede, skjøndt de 2 forreste oventil næsten ganske dækkes af en fra 3die Segment udgaaende skjoldformig Plade. Hos ældre Exemplarer (Fig. 13) er disse 3 Segmenter fuldstændigt sammenvoxede med hverandre, dannende et særdeles voluminost og stærkt opblæst Parti, der optager det her stærkt udvidede Afsnit af Næringskanalen.

Bagkroppen er forholdsvis kraftigere udviklet end hos den fuldvoxne Han, oventil jevnt hvælvet og forsynet med jevnt afrundede Epimerer.

Af Øine er her ligesaalidt som hos Hannen det mindste Spor at opdage; thi de laterale Udvidninger af Hovedet, hvor ellers disse Organer har sin Plads, viser fuldkommen samme Structur som de øvrige Integumenter og mangler ogsaa fuldstændig Pigment.

De 2 Par Følere (se Fig. 14) er ikke i nogen væsentlig Grad forskjellige i sin Bygning fra samme hos Hannen.

Derimod er Munddelene af et meget afvigende Udseende. De danner tilsammen (se Fig. 14) et koniskt tilspidset, lige fortilrettet Næb, der aabenbart er indrettet til et stikkende og sugende Apparat. Ved nærmere Undersøgelse finder man følgende Dele, der indgaar i Dannelsen af Næbbet.

Oventil findes en stumpt triangulær uparret Plade, der delvis hvælver sig over de øvrige Dele og forestiller Overlæben.

Umiddelbart nedenunder denne ligger et Par temmelig stærke, koniskt tilspidsede Organer (Fig. 15), bestaaende af en tykkere muskulos Basaldel og en stærkt chitiniseret, tornformig Endedel, der i sin indre Kant er forsynet med tilbagerettede Tænder. Disse Organer er de egentlige Kindbakker.

Derpaa følger 2 Par simple stiletformige Munddele, der aabenbart er at betragte som de modificerede Kjæver. Det 1ste af disse Par (Fig. 16) er ganske glatte, medens det noget længere og tyndere 2det Par (Fig. 17) viser ved Spidsen i den indre Kant en fin Tandbevæbning.

considerably larger than any of the previously known species of the genus.

Description of the Larva (Praniza). — The body (figs. 12, 13) exhibits the characteristic fusiform Praniza form, differing however somewhat in examples of unequal size.

The integuments are considerably thinner than in the full-grown male, semi-translucent, and have neither bristles nor spikes. Under a powerful magnifier, they exhibit however a distinct, granulous sculpturing.

The cephalic segment is narrow-triangular in form, broadest posteriorly, and with an exceedingly conspicuous instriction posterior to the origin of the antennæ. Anteriorly, it protends as a sharp-pointed beak, which, in great part, is formed by the peculiarly modified oral appendages.

Of the 5 segments belonging to the anterior division, the 2 first are always exceedingly short, and furnished with obtusely rounded epimera. The 3 succeeding segments occur distinctly defined in very young specimens only (fig. 12), although the 2 foremost are almost entirely covered above by a scutiform plate, proceeding from the 3rd segment. In more developed specimens (fig. 13), these 3 segments are completely connate one with the other, constituting an exceedingly voluminous and swollen part, which serves for the reception of the greatly dilated section of the alimentary canal.

The posterior division of the body has a comparatively more powerful development than in the full-grown male, and is uniformly arched above, as also provided with evenly rounded epimera.

Of eyes, not the slightest trace can, as in the male, be detected; for the lateral dilations of the head, on which these organs are otherwise located, exhibit the precise structure of the other integuments, and, besides, are wholly wanting in pigment.

The 2 pairs of antennæ (see fig. 14) do not differ essentially in their structure from those in the male.

On the other hand, the oral appendages present a widely deviating appearance. They constitute together (see fig. 14) a conically pointed beak, directed straight forward, obviously adapted for the purpose of piercing and suction. On closer examination, the beak is found to consist of the following parts.

Above, is seen a single, obtusely triangular plate, arching over, in part, the remaining appendages, and which represents the labrum.

Immediately beneath this plate, occur a pair of rather strong, conically pointed organs (fig. 15), composed of a thickish, muscular basal part, along with an exceedingly chitinised, spiniform terminal portion, which, on its inner margin, has a number of posteriorly directed teeth. These organs are the true mandibles.

Thence, succeed 2 pairs of simple, styliform oral appendages, obviously the modified maxillæ. The first of these pairs (fig. 16) are quite smooth, whereas the somewhat longer and more slender 2nd pair (fig. 17) exhibit at the points, on the inner margin, a delicate armature of denticles.

Nedentil afsluttes Næbbet med et Par noget mere complicerede Munddele (Fig. 18), der forestiller de egentlige Kjævefødder. De er ligesom de ovenfor omtalte Munddele rettede lige fortil og dækker disse mere eller mindre fuldstændigt nedentil (se Fig. 14). Man kan paa dem adskille en i 4 utydelige Segmenter afdelt Stamme eller Basaldel, der fortil gaar ud i en dolkformig, i den indre Kant fint tandet Fortsats (Tyggelap), og en til den ydre Side af denne sidste fæstet enleddet og med korte Børster besat Endedel eller Palpe, der kun lidet overrager hin Fortsats.

Bag Næbbet er til Hovedsegmentets Underside fæstet (se Fig. 14) et Par Lemmer, der aabenbart svarer til de operkelformige accessoriske Kjævefødder hos Hannen, men som her er udviklede paa en helt anden Maade, nemlig til kraftige Fastklamringsredskaber.

Af Form er de (Fig. 19) cylindriske og noget Sformigt boiede samt bestaar af 6 Led, hvoraf de bagerste paa den indre Side viser et Antal af skarpe chitinose Tværfolder. Sidste Led er omformet til en overordentlig kraftig hageformigt boiet Klo, hvis ydre Del er af særdeles fast Consistens og sylformigt tilspidset.

De egentlige Fødder (Fig. 20) stemmer i sin Bygning fuldkommen overens med samme hos Hannen, dog med den Forskjel, at de ganske mangler de knudeformige Tænder, hvormed de ydre Led hos hin er bevæbnede, ligesom ogsaa Børstebesætningen er langt sparsommere.

Bagkroppens Buglemmer (Fig. 21) er uddannede til vel udviklede Svømmeredskaber, idet de 2 ovale Endeplader i Spidsen er forsynede med lange cilierede Svømmebørster.

Haleviften (Fig. 22) er vistnok i Hovedsagen af samme Bygning som hos Hannen, men viser dog nogle mindre Differentser. Den midterste Haleplade er saaledes noget mindre indknebet i sit ydre Parti, og paa den stumpt tilrundede Spids bemærkes et lidet mediant Indsnit, fra hvis Bund 2 korte Børster rager frem. De ydre Halevedhængs Endeplader er forholdsvis noget bredere end samme hos Hannen og de paa dem fæstede Børster stærkere udviklede.

Farven er ensformig hvid og noget gjennemsigtig, uden Spor af nogen Pigmentering.

Længden af de største Larver er 10^{mm}, af de mindste erholdte 5.80^{mm}.

Forekomst og Udbredning. Nærværende eiendommelige Art forekommer, som det synes, ikke saa ganske sjeldent paa de store Dyb i den kolde Area. Vi har Exemplarer fra ikke mindre end 7 forskjellige Stationer. Dybden fra 658 til 1215 Favne. De allerfleste indsamlede Exemplarer var fuldt udviklede Hanner; derimod fandtes ingen fuldvoxen Hun og kun nogle faa Larver. Disse sidste lever rimeligvis parasitisk paa Dybvandsfiske eller andre større Dybvandsdyr.

Below, the beak is bounded by a pair of somewhat more complicated oral appendages (fig. 18), representing the true maxillipeds. They have, like the oral appendages spoken of above, a straight, anterior direction, covering the latter, more or less completely, below (see fig. 14). On the appendages may be distinguished a stem, or basal part, divided into 4 indistinct segments, that, anteriorly, jut out as a dagger-shaped, on the inner margin finely dentate, projection (masticatory lobe), and, attached to the outer side of this projection, a one-jointed terminal portion, or palp, beset with short bristles, reaching but slightly beyond the said projection.

Posterior to the beak, are attached on the under surface of the cephalic segment (see fig. 14) a pair of appendages, evidently corresponding to the operculiform accessory maxillipeds in the male, but here, however, developed for a widely different purpose, viz. to serve as powerful prehensile organs.

They are cylindric and somewhat S-shaped in form, and consist of 6 joints, of which the hindermost on the inner side exhibits a number of sharp-edged, chitinous, transverse folds. The last joint is transformed into a remarkably powerful, hook-shaped claw, the outer portion of which is exceedingly firm in consistence, and produced to an awl-shaped point.

The true legs (fig. 20) agree completely in structure with those of the male, saving however the total absence of tuberculiform teeth, with which the outer joints in the latter are armed, as also a much less abundant supply of bristles.

The pleopoda (fig. 21) are developed as fully efficient natatory organs, the 2 ovate terminal plates being furnished at the point with long, ciliated natatory bristles.

The caudal fan (fig. 22) is indeed essentially of the same structure as that in the male, but exhibits however a few minor points of difference. The median caudal plate is, for example, somewhat less constricted in its outer portion, and, at the obtusely rounded point, occurs a small median incision, from the bottom of which project 2 short bristles. The terminal plates of the outer caudal appendages are comparatively somewhat broader than those in the male, and the bristles attached to them more fully developed.

Colour a uniform white and semi-translucent, without a trace of pigment.

Length of the largest specimens of larvæ collected 10^{mm}, of the smallest 5.80^{mm}.

Occurrence and Distribution. — The present peculiar species occurs, it would seem, not so very rarely, throughout the great depths of the cold area. We obtained examples at not less than 7 different Stations, in depths ranging from 658 to 1215 fathoms. Most of the specimens collected were fully developed males, no full-grown female having been taken and but very few larvæ. The latter probably exist as parasites on deep-sea fishes or other large deep-sea animals.

Artens for Tiden bekjendt Udbredningsfelt er det store Havdyb mellem Norge, Beeren Eiland, Island og Jan Mayen fra den 63de til den 75de Bredegrad.

The tract throughout which the species is at present known to be distributed, comprises the great ocean deep between Norway, Beeren Eiland, Iceland, and Jan Mayen, from the 63rd to the 75th parallel of latitude.

18. Anceus hirsutus. G. O. Sars. n. sp.

Pl. VIII, Fig. 23—24).

Anceus hirsutus, G. O. Sars, Prodromus descriptionis Crust. etc., No. 66.

Artscharacteristik. ♂ Legemet af undersætsig Form, neppe 3 Gange saa langt som bredt og ikke mærkbart afsmalnende fortil. Integumenterne paa den forreste Del af Kroppen ru af smaa Pigge og tæt haarede. Hovedet stort og bredt, næsten firkantet, med Sidedelene jevnt convexe, uden Kjøl. De 2 bagre Forkropssegmenter uden Pigge, med afrundede Epimerer; næstsidste Segment størst og forsynet oventil med en korsformig Fordybning. Bagkroppen oventil glat, med tilspidsede, børstebesatte Epimerer. Øinene tydelige, men smaa, med mørkt Pigment. Folerne af sædvanlig Bygning. Kindbakkerne af middelmaadig Størrelse, med en liden, men tydelig Tand i den ydre Kant. Enden skarpt tilspidset. Bagkroppens Buglemmer med smale børsteløse Endeplader. Den midterste Haleplade aflangt triangulær, med Enden tilspidset og forsynet med 2 tynde divergerende Børster. Farven ensformig skidden graabrun. Længden $5^1/_2{}^{mm}$.

Findesteder. Stat. 31. 237.

Bemærkninger. Den her omhandlede Art kan ikke forvexles med foregaaende. Mere ligner den vore 3 indenlandske Arter: A. maxillaris, elongatus og dentatus, fra hvilke den dog let kjendes ved sine tæt børstebesatte Integumenter.

Beskrivelse af Hannen. Legemet er (se Pl. VIII, Fig. 23) kjendeligt kortere og plumpere end hos foregaaende Art, neppe 3 Gange saa langt som bredt og fortil ikke mærkbart afsmalnende.

Integumenterne er vistnok temmelig faste, dog langtfra i den Grad som hos foregaaende Art, og er delvis ru af meget smaa Pigge samt besat med lange og tætte Haar, navnlig paa den forreste Del af Kroppen.

Hovedet er meget bredt, næsten firkantet, med Panderanden i Midten kun lidet fremspringende og Sidedelene jevnt convexe, uden nogen tydelig Kjøl. Supraorbitalfortsatserne er tydelige, skjøndt temmelig smaa.

Af de frie Forkropssegmenter er de 2 forreste som hos foregaaende Art kortest. 3die Segment er ved en dyb Indsnøring skilt fra det følgende og er ligesom de 2 foregaaende Segmenter og Hovedet ru af talrige Smaapigge,

18. Anceus hirsutus. G. O. Sars. n. sp.

(Pl. VIII, figs. 23, 24).

Anceus hirsutus, G. O. Sars, Prodromus descriptionis Crust. etc., No. 66.

Specific Character. — ♂ Body thickset scarcely 3 times as long as broad, and not perceptibly tapering forwards. Integuments on anterior portion of body rough, by reason of minute spikes, and thickly covered with hairs. Head large and broad, well-nigh quadrate, with the lateral parts uniformly convex, and without any keel. The 2 posterior pedigerous segments without spikes, but with rounded epimera; penultimate segment largest, and exhibiting above a cruciform depression. Abdomen, above, smooth, with sharply pointed, bristle-beset epimera. Eyes distinct, but small, with a dark-coloured pigment. Antennæ of the usual structure. Mandibles moderate in size, with a small but distinct tooth on the outer margin, extremity acutely pointed. Pleopoda with narrow, bristleless terminal plates. Median caudal plate oblongo-triangular, with the extremity pointed, and furnished with 2 slender, diverging bristles. Colour a uniform dirty greyish-brown. Length $5^1{}_2{}^{mm}$.

Locality. — Stats. 31, 237.

Remarks. — The species here treated of cannot be confounded with the preceding. It has closer resemblance to our 3 native (Norwegian) forms viz. — A. maxillaris, A. elongatus, and A. dentatus, from which however it may easily be recognized by the densely bristle-beset integuments.

Description of the Male. — The body (see Pl. VIII, fig. 23) is perceptibly shorter, as also more clumsy in form, than in the preceding species, scarcely 3 times as long as broad, and not obviously tapering anteriorly.

The integuments are indeed rather firm, though by no means to the same extent as in the preceding species, and in places rough, by reason of minute spikes, as also clothed with long and close hairs, in particular on the anterior part of the body.

The head is very broad, almost quadrate, with the frontal margin projecting but slightly in the middle, and the lateral parts uniformly convex, without any distinct keel. The supraorbital projections are distinctly defined, though comparatively small.

Of the free segments belonging to the anterior division the 2 foremost are, as in the preceding species, shortest. The 3rd segment is separated by a deep instriction from the succeeding one, and, like the 2 preceding segments

der er temmelig ligeligt udviklede saavel paa den ovre Flade som langs Sidekanterne. De 2 bagre Segmenter mangler derimod ganske Pigge og de dem bekl\u00e6dende Integumenter synes ogsaa at være tyndere og mere hudagtige. Næstsidste Segment har oventil i Midten en tydeligt markeret Længdefure, fra hvilken en anden kortere strækker sig paatværs til hver Side, hvorved fremkommer ligesom et korsformigt Indtryk i Midten. Sidste Segment er bagtil dybt udrandet og har Sidehjørnerne stumpt afrundede.

Bagkroppen er oventil jevnt hvælvet og glat, uden Spor af Pigge. Derimod er Epimererne som hos foregaaende Art tilspidsede og udstaaende til Siderne samt ved Spidsen forsynede med korte Børster.

Øinene er, i Modsætning til hvad Tilfældet er hos foregaaende Art, tydeligt udviklede, skjøndt temmelig smaa, og har sin Plads paa Siderne af Hovedet, umiddelbart bag Supraorbitalfortsatserne. Deres Pigment er mørkt, sortagtigt.

Folerne er i sin Bygning ikke væsentlig forskjellig fra samme hos foregaaende Art.

Kindbakkerne er derimod forholdsvis noget større og har Enden mere uddraget og skarpt tilspidset. I den ydre Kant findes omtrent i Midten et tydeligt, skjøndt lidet tandformigt Fremspring.

De 2 øvrige Par Munddele skiller sig ikke i nogen væsentlig Grad fra samme hos A. stygius.

Fødderne viser ogsaa en meget lignende Form, skjøndt de er mindre rigeligt børstebesatte og har de knudeformige Tænder mindre udviklede.

Bagkroppens Buglemmer mangler ogsaa her ethvert Spor af Børster og har Grenene af et lignende Udseende som hos foregaaende Art.

Den midterste Haleplade (Fig. 24) er forholdsvis kortere og bredere og af temmelig regelmæssig triangulær Form, med Enden udtrukket i en skarp Spids, hvorfra 2 temmelig lange divergerende Børster udgaar; 2 lignende Børster er fæstede til den ovre Flade noget bag Midten.

De ydre Halevedhæng viser intet udmærkende i sin Bygning. Endepladerne mangler Tænder i Kanterne, hvorimod Randbørsterne er forholdsvis stærkere udviklede end hos foregaaende Art.

Farven er skidden graa, med et svagt brunligt Skjær, og de 2 bagre Forkropssegmenter paa Grund af de gjennemskinnende Indvolde noget mørkere end det øvrige Legeme.

Længden er kun omtrent $5^1/_2{}^{mm}$, altsaa neppe mere end halvt saa stort som hos foregaaende Art.

Forekomst og Udbredning. 2 Exemplarer af denne Art toges under Expeditionens 1ste Togt udenfor Storeggen (Stat. 31) fra et Dyb af 417 Favne. Under 2det Togt gjenfandtes samme Art paa en vidt adskilt Lokalitet, nemlig SV af Jan Mayen (Stat. 237), hvor ligeledes 2 Exemplarer

and the head, has a rough appearance, from numerous minute spikes, comparatively equal in development alike on the upper surface and along the lateral margins. On the 2 posterior segments, spikes are entirely wanting, and the integuments would, too, appear to be thinner and more cutaneous. The penultimate segment has, above, in the middle, a distinctly marked longitudinal sulcus, from which a shorter one extends transversely on either side, producing, as it were, a cruciform depression in the middle. The last segment is posteriorly deeply emarginate, and has the lateral corners obtusely rounded.

The posterior division of the body is uniformly arched above, and smooth, without a trace of spikes. The epimera, however, are, as in the preceding species, pointed, and project toward the sides, being also furnished at the point with short bristles.

The eyes, contrary to what is the case in the preceding species, are distinctly developed, though rather small, and have their position at the sides of the head, immediately posterior to the supraorbital projections. Their pigment is of a dark, blackish colour.

The antennæ do not differ essentially in structure from those of the preceding species.

The mandibles, on the other hand, are relatively somewhat larger, and have the extremity produced, as also acutely pointed. On the outer margin, occurs, about in the middle, a distinct, though small, dentiform projection.

The 2 remaining pairs of oral appendages do not differ essentially from those in A. stygius.

The legs, too, present a very close resemblance in form, though less abundantly furnished with bristles; moreover, the tuberculiform teeth are not so fully developed.

On the pleopoda, is wanting likewise every trace of bristles, and the branches have a similar appearance to those in the preceding species.

The median caudal plate (fig. 24) is relatively shorter and broader, and comparatively of a regular triangular form, with the extremity produced to a sharp point, from which proceed 2 rather long, diverging bristles; 2 similar bristles are attached to the upper surface, a little posterior to the middle.

The outer caudal appendages exhibit nothing distinctive in their structure. The terminal plates have no teeth on the edges, whereas the marginal bristles are relatively more developed than in the preceding species.

Colour a dirty grey, with a faint brownish tinge, the 2 posterior segments of the anterior division having, from the viscera that shine through the integuments, a somewhat darker shade than the rest of the body.

Length only about $5^1/_2{}^{mm}$; hence, scarcely half that of the preceding species.

Occurrence and Distribution. — Of this species, 2 specimens were taken on the 1st cruise of the Expedition, off the Storeggen Bank (Stat. 31), at a depth of 417 fathoms. On the 2nd cruise, the same species was again met with, in a widely different locality, viz. — south-west

erholdtes fra et Dyb af 263 Favne. Begge Stationer tilhører den kolde Area.

Artens for Tiden bekjendte Udbredningsfelt strækker sig saaledes fra den 63de til den 71de Bredegrad og fra 5° østlig Længde til 10° vestlig Længde.

of Jan Mayen (Stat. 237), where 2 specimens were likewise obtained, from a depth of 263 fathoms. Both Stations lay in the cold area.

Accordingly, the tract over which the species is at present known to be distributed extends from the 63rd to the 71st parallel of latitude, and from long. 5° E. to long. 10° W.

19. **Anceus robustus**, G. O. Sars, n. sp.

(Pl. VIII, Fig. 25—27).

Anceus robustus, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 6.

Artscharacteristik. ♂ Legemet af særdeles kort og robust Form, med Breden betydelig større end $^1/_3$ af Længden. Integumenterne overalt ru af smaa Pigge, men uden tydelig Haarbesætning. Hovedet særdeles stort og bredt, fortil afstumpet. Siderne convexe. Næstsidste Forkropssegment ovenfil forsynet med en smal Længdefure, hvorfra en i Enden tvedelt Tværfure strækker sig til hver Side. Bagkroppen med tandede, lidet fremspringende Epimerer. Øinene smaa, men tydelige. Kindbakkerne uden nogen tydelig Tand i den ydre Kant. Fodderne kraftigt byggede med stærke tandformige Fremspring. Bagkropslemmerne med børstelose Endeplader. Den midterste Halepllade bag Basis pludselig stærkt indknebet, med den ydre Del særdeles smal, konisk, Enden tilspidset og forsynet med 2 divergerende Børster. Farven hviagtig med enkelte utydelige gulagtige Pigmentpletter. Længden 7^{mm}.

Larverne (Praniza) af sædvanlig Form, med store mørkt purpurfarvede Øine, og gulrød Pigmentering.

Findesteder. Stat. 280, 359.

Bemærkninger. Fra foregaaende Art er denne let kjendelig ved sin ualmindelig plumpe Kropsform, de kun med meget sparsomme Haar, men talrige Smaapigge, besatte Integumenter og ved den midterste Halepllades meget eiendommelige Form.

Beskrivelse af Hannen. Legemets Form er (se Pl. VIII, Fig. 25) endnu adskilligt plumpere og mere undersætsig end hos foregaaende Art, med Breden betydelig større end $^1/_3$ af Længden.

Integumenterne er temmelig faste og overalt, ogsaa paa de 2 bagre Forkropssegmenter, ru af smaa Pigge, hvorimod den tætte Haarbesætning, som udmærkede foregaaende Art, her saagodtsom ganske savnes.

Hovedet er særdeles stort, omtrent dobbelt saa bredt som langt, med Panderanden næsten tvært afskaaret og Sidedelene stærkt convexe. Supraorbitalfortsatserne er tydelige, men ganske smale og tandede i den ene Kant.

19. **Anceus robustus**, G. O. Sars, n. sp.

(Pl. VIII, figs. 23—27).

Anceus robustus, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 6.

Specific Character. — ♂ Body remarkably short, and robust in form, with the breadth but slightly exceeding one-third of the length. Integuments everywhere rough, by reason of minute spikes, but without any distinct covering of hair. Head very large and broad, anteriorly obtuse, sides convex. Penultimate pedigerous segment furnished above with a narrow longitudinal sulcus, from which a transverse sulcus, bifurcate at the extremity, protends on either side. Abdomen furnished with dentate, and but slightly projecting epimera. Eyes small but distinct. Mandibles without any distinctly developed tooth on the outer edge. Legs powerful in structure, with strong dentiform projections. Pleopoda with naked terminal plates. Median caudal plate, posterior to the base, abruptly constricted, with the outer portion exceedingly narrow, conic, extremity pointed and furnished with 2 diverging bristles. Colour whitish, with scattered, indistinct patches of yellowish pigment. Length 7^{mm}.

The larvæ (Praniza) normal in form, with large dark purple-coloured eyes, and a yellowish-red pigment.

Locality. — Stats. 290, 359.

Remarks. — From the preceding species, the present may be readily distinguished by its remarkably clumsy form of body, by the integuments being furnished very sparingly with hair but having numerous minute spikes, and also by the exceedingly peculiar form of the median caudal plate.

Description of the Female. — The form of the body (see Pl. VIII, fig. 25) is much more clumsy and thickset than in the preceding species, with the breadth considerably exceeding one-third of the length.

The integuments are rather firm in consistence, and everywhere, even on the 2 posterior, pedigerous segments, rough from minute spikes, whereas the dense covering of hair that distinguishes the preceding species is well-nigh entirely wanting.

The head is exceedingly large, about twice as broad as long, with the frontal margin abruptly truncate, and having the lateral parts prominently convex. The supraorbital projections are distinct, but very small, and dentate along one or the edges.

Det indbyrdes Forhold mellem de 5 frie Forkropssegmenter er omtrent som hos foregaaende Art. Dog er næstsidste Segment forholdsvis kortere og bredere. Det viser oventil den sædvanlige mediane Længdefure, der dog her er ganske smal og desuden en tydeligt markeret Tværfure, der krydser hin og til hver Side klofter sig i 2 Grene, der begrændser det noget convexe laterale Parti, til hvis Underside de tilsvarende Lemmer er fæstede. Sidste Segment er kjendeligt smalere end det foregaaende og har de bagre Sidehjørner kun lidet uddragne og stumpe.

Bagkroppen er af den sædvanlige smale lineære Form og har Epimererne kun lidet udstaaende til Siderne og, naar undtages sidste Segment, delt i 2 eller flere Tænder.

Øinene er tydeligt udviklede, men meget smaa og saaledes beliggende, at de, naar Dyret sees ovenfra, for en stor Del dækkes af de fra Siderne af Hovedet udgaaende Smaapigge.

Folerne viser intetsomhelst udmærkende i sin Bygning.

Kindbakkerne er forholdsvis noget kraftigere end hos foregaaende Art og har Spidsen noget stærkere indadkrummet og den ydre Kant glat, uden noget tydeligt tandformigt Fremspring.

Munddelene og Fødderne skiller sig ikke synderligt fra samme hos de øvrige Arter. De sidste Organer udmærker sig dog, sammenlignet med samme hos foregaaende Art, ved kraftigere Bygning og ved stærkere udviklede tandformige Fremspring i den indre Kant.

Bagkroppens Buglemmer mangler som hos de 2 foregaaende Arter ganske Børster paa de smalt tungeformige Endeplader.

Den midterste Haleplade (Fig. 26) er af en meget characteristisk Form. Den er nemlig umiddelbart bag Basis særdeles stærkt indknebet, saa at det ydre Parti bliver meget smalt og koniskt tilspidset. Til Spidsen er som hos foregaaende Art fæstet 2 divergerende Børster, og noget længere fortil udgaar fra den øvre Flade 2 lignende.

De ydre Halevedhæng skiller sig ikke i nogen væsentlig Grad fra samme hos de foregaaende Arter.

Farven er temmelig ensformig hvidgraa; kun hist og her bemærkes nogle spredte, ligesom udviskede Pigmentpletter af lys gulagtig Farve.

Længden er 7^{mm}, altsaa adskilligt større end hos foregaaende Art.

Larverne (Praniza) (Fig. 27) ligner meget Larverne af de øvrige bekjendte Arter, men skiller sig ved en noget undersætsigere Kropsform. Øinene er særdeles store, indtagende Størsteparten af Hovedets Sider og er forsynede med et mørkt purpurfarvet Pigment. Legemet er tydeligere pigmenteret end hos Hannen, med smaa og tætstaaende røde og gule Punkter, især paa Bagkroppen og den forreste Del af Forkroppen.

The 5 free segments belonging to the anterior division exhibit, when compared together, about the same relation as in the preceding species. The penultimate segment is however relatively shorter and broader. Above, it has the usual median longitudinal sulcus, which here, however, occurs exceedingly narrow, and, in addition, a distinctly marked transverse sulcus, traversing the former, and on either side dividing into 2 branches, that limit the somewhat convex lateral region, to the under surface of which are attached the corresponding legs. The last segment is perceptibly narrower than the preceding, and has the posterior lateral corners but very slightly produced, and obtuse.

The posterior division of the body has the usual slender, linear form, with the epimera but slightly projecting toward the sides, as also, saving the terminal segment, divided into 2 or more teeth.

The eyes are distinctly developed, but very small, and so located that, on viewing the animal from above, they appear in great part covered by the minute spikes springing from the sides of the head.

The antennæ exhibit nothing distinctive in their structure.

The mandibles have comparatively a somewhat more powerful development than in the preceding species, with the point a little more incurved and the outer edge smooth, without any perceptible dentiform projection.

The oral appendages and the legs do not differ much from those parts in the other species. The latter organs, however, are characterized, as compared with those in the preceding species, by a more powerful structure and more fully developed dentiform projections on the inner margin.

The pleopoda are, as in the 2 preceding species, wholly without bristles on the narrow, linguiform terminal plates.

The median caudal plate (fig. 26) has a very characteristic form. Immediately posterior to the base, it is exceedingly constricted, the outer portion becoming thus very narrow and conically pointed. To the point are attached, as in the preceding species, 2 diverging bristles, and somewhat farther anteriorly 2 of a similar kind spring from the upper surface.

The outer caudal appendages are not essentially distinguished from those in the 2 preceding species.

Colour a comparatively uniform whity-grey; here and there only are observed a few scattered and, as it were, partially effaced patches of pigment, having a light-yellowish colour.

Length 7^{mm} — therefore considerably greater than met with in the preceding species.

The larvæ (Praniza) — (fig. 27) present a close resemblance to those of the other known species, but are characterized by a somewhat more thickset form of body. The eyes are exceedingly large, occupying the greater part of the sides of the head, and provided with a dark purple-coloured pigment. The body is more conspicuously coloured than in the male, with small and closely disposed red and yellow dots, particularly on the abdomen and the foremost part of the anterior division of the body.

Forekomst og Udbredning. En Del Exemplarer af denne Art erholdes under Expeditionens sidste Togt paa 2 forskjellige Stationer, den ene (Stat. 290) beliggende omtrent midt imellem Norge og Beeren Eiland, den anden (Stat. 359) lige Vest af Spitsbergen; Dybden fra 191 til 416 Favne. Ingen af disse Stationer tilhører egentlig den kolde Area, skjøndt den sidste ligger lige ved Grændsen af samme. Om Artens Udbredning kan for Tiden kun siges saameget, at den ligger indenfor den arktiske Zone fra den 72de til den 78de Bredegrad.

Occurrence and Distribution. — Some few examples of this species were obtained on the last cruise of the Expedition, at 2 different Stations, one (Stat. 290) located about midway between Norway and Beeren Eiland, the other (Stat. 359) due west of Spitzbergen; depth ranging from 191 to 416 fathoms. Neither of these Stations was strictly within the cold area, although the latter lay in close proximity to its boundary. As regards the distribution of the species, all that at present can be said amounts to the fact of its occurrence within the Arctic zone, from the 72nd to the 78th parallel of latitude.

Trib. 3. Valvifera.

Anmærkninger. Under denne Tribus sammenfatter jeg de Isopoder, hos hvem sidste Par Bagkropslemmer eller Halevedhængene er omformede til valvelformige Klapper, der fra hver Side hvælver sig ud over de øvrige Bagkropslemmer, saaledes at disse kommer til at ligge i en rummelig af det skjoldformige Endesegment oventil dækket Hule. Den indeholder 2 distincte Familier, Arcturidæ og Idotheidæ, hvoraf Repræsentanter nedenfor nærmere vil blive beskrevne.

Trib. 3. Valvifera.

Remarks. — Within this tribe I comprise all Isopods in which the last pair of abdominal limbs or the caudal appendages are transformed into valvular flaps, that, from either side, arch out over the other pairs, in such manner as to leave them in a spacious cavity, covered above by the scutiform terminal segment. It contains 2 distinct families — the Arcturidæ and the Idotheidæ, of which representatives will be described in detail below.

Fam. 1. **Arcturidæ.**

Gen. 1. **Arcturus,** Latr. 1804.

Hist. nat. des Crustacés et des Insects.

Slægtscharacteristik. Legemet af forholdsvis undersætsig Form, cylindriskt eller tendannet, med 4de Forkropssegment kun lidet længere end de øvrige. 2det Par Foleres Svøbe med simple, ikke sangtakkede Led. 1ste Fodpar forholdsvis lidet, med næstsidste Led smalt og forlænget, sidste Led meget lidet, uden Klo. Hunnens Brystpose sammensat af 3 Par tydelige Plader, tilhørende 2det—4de Forkropssegment.

Bemærkninger. I den Begrændsning, hvori Slægten her tages, indbefatter den foruden de 3 nedenfor nærmere omtalte Former kun den af Miers[1] fra Magellan-Strædet beskrevne *Arcturus Coppingeri*. Alle de øvrige til denne Slægt henførte Arter hører derimod ind under følgende

[1] Proceedings of the Zool. Soc. of London, Jan. 4, 1881.

Fam. 1. **Arcturidæ.**

Gen. 1. **Arcturus,** Latr. 1804.

Hist. nat. des Crustacés et des Insects.

Generic Character. — Body comparatively thickset in form, cylindric or fusiform, with the 4th segment but little longer than the others. Flagellum of 2nd pair of antennæ with simple, non-serrate joints. First pair of legs comparatively small, with penultimate joint slender and elongate, terminal joint exceedingly small, and without any claw. Marsupium of female composed of 3 pairs of distinct plates, belonging to 2nd, 3rd, and 4th pedigerous segments.

Remarks. — Within the limits here assigned to the genus, it comprises, exclusive of the 3 forms treated of in detail below, but one other species, *Arcturus Coppingeri*, from the Straits of Magellan, described by Miers.[1] All the other species referred to this genus belong to the

[1] Proceedings of the Zool. Soc. of London, Jan. 4th, 1881.

Slægt, *Astacilla*. Begge staar hinanden vistnok meget nær; men det lader sig dog gjøre at opstille en Del distinctive Characterer, der ialfald for Tiden vil kunne tillægges generisk Værd, og jeg har derfor troet at burde holde disse 2 Slægter ud fra hinanden.

succeeding, viz. to the genus *Astacilla*. Both do indeed approximate very closely; but a number of distinctive characters can however be found that, leastways at present, have warrantable generic value: and hence I have seen fit to keep these 2 genera apart.

20. Arcturus baffini, Sab.

Pl. IX, Fig. 1—21.

Idothea baffini, Sabine. Appendix to Parry's 1ste Voy. pg. 50. Pl. I, Fig. 4—6.
Arcturus tuberculatus, Latreille i Cuvier's Règne animal, Vol. IV, pg. 139.
Arcturus baffini, Westwood. Trans. Entom. Soc. Lond., Vol. I, pg. 72.

Artscharacteristik. Legemet ovalt, loddent af korte og stive Haar, med en dobbelt Rad af koniske, opadrettede Fortsatser langs ad Ryggen. Epimererne paa de 3 bagerste Forkropssegmenter triangulært tilspidsede og stærkt udstaaende til Siderne. Sidste Bagkropssegment bagtil koniskt uddraget, med 2 triangulære Sidefortsatser ved Basis og 2 smaa Torner paa Midten af Rygfladen. Øinene store og fremstaaende, af nyredannet Form og forsynede med mørkt Pigment. 1ste Par Foleres Svøbe forsynet med talrige Sandsevedhæng. 2det Par Folere betydelig længere end Legemet, med Svøben sammensat af 8 Led. Farven lys brungul. Legemets Længde indtil 40^{mm}.

Findesteder. Stat. 48, 359.

Bemærkninger. Nærværende anselige Art er først beskreven og afbildet af Sabine i Appendixet til Parry's 1ste Nordpolexpedition, men er senere, saavidt mig bekjendt, ikke underkastet nogen fornyet Undersøgelse, skjøndt den flere Gange er gjenfunden og nævnt af mange forskjellige Forfattere. Latreille's Slægt *Arcturus* er utvivlsom grundet paa denne Art, hvorfor ogsaa det oprindelige Slægtsnavn her maa anvendes. Den her omhandlede Art er saaledes Typen for Slægten Arcturus og tillige for Familien Arcturidæ.

Beskrivelse af Hunnen. Legemet er (se Pl. IX, Fig. 1 og 2) næsten af cylindrisk Form, omtrent 7 Gange længere end bredt og er overalt loddent af korte og stive Haar. Dets Overflade er forøvrigt temmelig ujevn, idet Segmenterne er skilte ved temmelig dybe Indsnøringer og forsynede med afrundede Forhøininger og Fordybninger samt med en Del symetriskt ordnede høie koniske Fortsatser, der danner en dobbelt Række langs ad Ryggen.

Integumenterne er stærkt incrusterede og viser overalt en fint knudret eller granuleret Sculptur.

Hovedet er omtrent af samme Brede som Længde, fortil neppe afsmalnende og her næsten lige afskaaret eller i Midten ganske svagt udrandet. Oventil er det forsynet

20. Arcturus baffini, Sab.

(Pl. IX, figs. 1—21).

Idothea baffini, Sabine, Appendix to Parry's First Voy. p. 50, Pl. I, figs. 4—6.
Arcturus tuberculatus, Latreille, in Cuvier's Règne animal, Vol. IV, p. 139.
Arcturus baffini, Westwood, Trans. Entom. Soc. Lond., Vol. I, p. 72.

Specific Character. — Body everywhere clothed with short and stiff hairs, and furnished along the back with a double series of conical, upward-directed projections. Epimera on the 3 posterior pedigerous segments triangularly pointed, and prominently projecting at the sides. Last abdominal segment conically produced posteriorly, with 2 triangular lateral projections at the base, and 2 small spines in the middle of the dorsal surface. Eyes large and protruding, reniform in shape, and provided with a dark pigment. Flagellum of 1st pair of antennæ with numerous sensory appendices. Second pair of antennæ considerably longer than body, with flagellum composed of 8 joints. Colour a light brownish-yellow. Length of body reaching 40^{mm}.

Locality. — Stats. 48, 359.

Remarks.—The present large species was first described and figured by Sabine, in the Appendix to Parry's First North Pole Expedition, but has subsequently, so far as I am aware, not been again submitted to any closer examination, though several times met with and recorded by various authors. Latreille's genus *Arcturus* is unquestionably founded on this species: and hence the original generic designation should be retained. The species treated of here is accordingly the type of the genus Arcturus, and likewise of the family Arcturidæ.

Description of the Female. — The body (see Pl. IX, figs. 1, 2) is almost cylindric in form, about 7 times longer than broad, and everywhere clothed with long and stiff hairs. Its surface is, for the rest, rather uneven, the segments being separated by rather deep instrictions, and having rounded prominences and depressions, as also a number of symmetrically arranged, high, conical projections, constituting a double series along the back.

The integuments are strongly incrusted, and exhibit everywhere a minutely rugged, or granulous sculpturing.

The head has about the same breadth as length, tapering scarcely at all anteriorly, where it is abruptly truncate, or, in the middle, slightly emarginated. Above, it exhibits

med 2 høie koniske Fortsatser, der er stillede jevnsides noget bag Midten af dets Længde.

1ste Forkropssegment udmærker sig fra de øvrige derved, at dets Sidedele eller Epimerer danner en fortilbøiet tungeformig Lap, der delvis dækker Siderne af Hovedet. Det er ligeledes oventil i Midten forsynet med 2 koniske Fortsatser; men disse er her betydelig mindre.

De 3 følgende Segmenter tiltager successivt i Længde bagtil, og det sidste af dem (4de Segment) er kjendeligt større end nogen af de øvrige. Ethvert af disse Segmenter har paa Rygsiden 2 lignende koniske Fortsatser som de, der findes paa Hovedet og er forsynet med smaa, fra Segmenterne tydeligt adskilte Epimerer.

De 3 sidste Forkropssegmenter er igjen noget kortere end de foregaaende og ligesom disse oventil forsynede med et Par koniske Fortsatser, der dog her er noget mindre. Epimererne er stærkt udstaaende til Siderne, triangulært tilspidsede og ved en tydeligt markeret Sutur skilt fra Segmenterne.

Bagkroppen, der indtager noget mere end $^1/_3$ af Totallængden, bestaar af 3 Segmenter. De 2 første er ganske korte og skiller sig lidet i Udseende fra de foregaaende Forkropssegmenter. Ligesom disse har ethvert af dem oventil 2 korte koniske Fortsatser, hvorimod Epimererne her ikke ved nogen Sutur er skilt fra Segmenternes Sidedele. Sidste Segment er meget stort, oventil hvælvet og bagtil koniskt uddraget. Det har ved Basis 2 temmelig store triangulære Fortsatser, der staar ud til hver Side, og paa Midten af Dorsalfladen 2 smaa, tæt sammen stillede Torner.

Øinene er store, næsten halvkugleformigt fremstaaende og seede fra Siden af næsten nyredannet Form, med den forreste Rand concav, den bagerste stærkt convex. Deres Pigment er af en dyb sort Farve.

1ste Par Folere (Fig. 3 og 4) udspringer tæt sammen fra den forreste Rand af Hovedet. De er ganske korte, kun lidet længere end Hovedet og bestaar af et 3-leddet Skaft og en uleddet Svøbe. Skaftets 1ste Led er meget bredt, noget pladedannet og af afrundet oval Form, med den indre Kant grovt knudret. De 2 følgende Led er meget smalere og forsynede med stumpe Saugtakker i den indre Kant. Svøben er omtrent saa lang som disse tilsammen, noget sammentrykt og langs den ydre Kant forsynet med en tæt Rad af eiendommelige Sandsevedhæng. Ved stærk Forstørrelse viser disse (se Fig. 5) ligesom 3 forskjellige Afsnit, et kort og noget indknebet basalt Parti, en midterste cylindrisk Del og en særdeles gjennemsigtig og pladeformig, i Enden stumpt afrundet Endedel.

2det Par Folere (se Fig. 1 og 2) udspringer ligeledes fra Hovedets forreste Rand, til hver Side af og noget nedenunder 1ste Par. De er særdeles kraftigt byggede og overgaar betydelig i Længde det hele Legeme. Ialmindelighed er de mere eller mindre stærkt nedadkrummede, idet deres forskjellige Led danner knæformige Boininger med hinanden:

2 elevated conical projections, placed side by side, a little posterior to the median part of its length.

The 1st segment is distinguished from the others by its lateral portions, or epimera, constituting an anteriorly curved, linguiform lobe, that partially covers the sides of the head. It is also furnished above, in the middle, with 2 conical projections, which, however, are much smaller than those on the head.

Of the succeeding segments, 3 increase backward successively in length, and the last of them (4th segment) is perceptibly larger than any of the others. Each of these segments has on the dorsal side 2 conical projections, similar to those on the head, and is furnished with small epimera, distinctly separated from the segments.

The last 3 segments belonging to the anterior division are, too, somewhat shorter than the preceding, and, in like manner, furnished with a pair of conical projections, which, however, are somewhat smaller. The epimera, strongly projecting toward the sides, are triangularly pointed, and separated by a distinct suture from the segments.

The posterior division of the body, measuring a little more than one-third of the total length, is composed of 3 segments. The 2 first are quite short, and differ but slightly in appearance from the preceding segments. Like the latter, each is furnished above with 2 short, conical projections, whereas no suture separates the epimera from the lateral portions of the segments. The last segment is exceedingly large, arcuate above, and conically produced posteriorly. It has at the base 2 rather large triangular projections, jutting out on either side, and, in the middle of the dorsal surface, 2 small, closely set spikes.

The eyes are large, well-nigh hemispherically protruding, and, viewed from the sides, almost reniform in shape, with the anterior margin concave, the posterior exceedingly convex. Their pigment is of a deep black.

The 1st pair of antennæ (figs. 3, 4) spring, close together, from the anterior margin of the head. They are quite short, very little longer than the head, and consist of a three-jointed peduncle and a simple flagellum. The 1st joint of the peduncle is very broad, somewhat lamelliform, and rounded-oval, with the inner edge coarsely rugged. The 2 succeeding joints are much narrower, and furnished with obtuse teeth along the inner edge. The flagellum is about equal in length to both these joints taken together, somewhat compressed, and, on the inner edge, provided with a close-set series of peculiar sensory appendages. When highly magnified, the latter exhibit (see fig. 5), as it were, 3 different sections: — a short and somewhat constricted basal portion, a median cylindric part, and a perfectly translucent and lamelliform terminal section, obtusely rounded at the extremity.

The 2nd pair of antennæ (see figs. 1, 2) likewise originate from the anterior margin of the head, on either side of and somewhat below the 1st pair. They are remarkably powerful in structure, and considerably exceed the whole of the body in length. As a rule, they are more or less bent downward, their various joints constituting one with

men de kan ogsaa strækkes mere ud til Siderne, saaledes som paa Fig. 1 fremstillet. Man kan paa dem adskille et langt 5-leddet Skaft og en forholdsvis ganske kort mangeleddet Svobe. Skaftets 2 forste Led er meget korte og tykke, af noget uregelmæssig Form og adskilte fra hinanden ved en skjævt snoet Sutur (se Fig. 6). De 3 ydre Led er derimod stærkt forlængede, cylindriske og tæt haarede samt aftager successivt i Tykkelse; næstsidste er det længste af alle. Svoben (Fig. 7) er noget mere end halvt saa lang som Skaftets sidste Led, meget tynd og sammensat af 8 tydeligt begrændsede Led, hvoraf det 1ste næsten er saa langt som alle de ovrige tilsammen. Langs den bagre Kant er den forsynet med nogle yderst smaa simple Borster, der er tæstede knippevis til særegne Afsatser, hvoraf der findes 10 paa 1ste Led, 2 paa 2det og 1 paa hvert af de ovrige. Det særdeles lille yderste Led bærer paa sin Ende en kort kloformig Torn, der egentlig er at betragte som et særskilt Endeled.

Munddelene er tæt sammentrængte paa Undersiden af Hovedet og adskilte fra dettes forreste Rand ved en bred Epistomialplade (se Fig. 3).

Overlæben (Fig. 3 og 8) danner en fra Epistomialpladen udgaaende bevægelig, bredt firkantet Lap, hvis bagre Kant er i Midten jevnt indbugtet og tæt cilieret.

Underlæben (Fig. 8) er dybt tvekloftet, med Sidelapperne afrundede og ucilierede.

Kindbakkerne (Fig. 10) er af kraftig Bygning og har den mod Munden vendte Ende stærkt udvidet og vinkelformigt boiet. Selve Tyggeranden viser fortil 2 tandede Fortsatser og bagtil en bred riflet Tyggeknude; mellem begge disse Partier findes nogle faa stive tornformige Borster. Som sædvanlig er der nogen Forskjel i Bevæbningen paa høire og venstre Kindbakke; men denne Forskjel er dog her kun lidet fremtrædende. Af nogen Palpe findes intet Spor.

1ste Par Kjæver (Fig. 11) har 2 fortilrettede og noget indadkrummede Tyggelappe, hvoraf den ydre er stærkest. Den er noget sammentrykt fra Siderne og langs den indre Rand fint cilieret; Enden er tvært afskaaret og bevæbnet med stærke, tilspidsede Torner, ordnede i flere Rader. Den indre Tyggelap er betydelig baade kortere og smalere end den ydre samt meget bevægeligt forbundet med Basaldelen. Den er som den ydre Tyggelap i den indre Kant fint cilieret og bærer ved Spidsen 3 tykke cilierede Torner.

2det Par Kjæver (Fig. 12) er forholdsvis smaa og svagt byggede. Man adskiller en bred, sammentrykt eller noget pladeformig Basaldel og et lidet til dennes ydre Hjorne fæstet tvedelt Appendix. Den indre, stærkt buede Kant af Basaldelen er besat med en tæt Rad af stive Borster og danner den egentlige Tyggerand. Det ovenomtalt ydre Appendix, der er bevægeligt forbundet med Basaldelen gaar ud i 2 fingerformige Lapper, hvoraf enhver bærer 3 grovt cilierede Borster. Ved nøiere Undersøgelse viser den ydre

the other geniculate flexions: they admit however of being more fully extended toward the sides, as shown in fig. 1. On these antennæ can be distinguished a long, five-jointed flagellum. The 2 first joints of the peduncle are exceedingly short and thick, somewhat irregular in form, and separated one from the other by an obliquely twisted suture (see fig. 6). The 3 outer joints, diminishing successively in thickness, are, on the other hand, extremely elongate, cylindric, and thickly covered with hair: the penultimate joint is the longest of all. The flagellum (fig. 7) is a trifle more than half as long as the terminal joint of the peduncle, very slender, and composed of 8 distinctly defined joints, of which the 1st well-nigh equals in length all the others taken together. Along the posterior edge, it is furnished with a few exceedingly small, simple bristles, attached in tufts to special, ledge-like projections, of which there are 10 on the 1st joint, 2 on the 2nd, and 1 such on each of the rest. The extremely small outermost joint bears at the extremity a short unguiform spine, that, strictly, must be regarded as a separate terminal joint.

The oral appendages are crowded together on the under side of the head, and separated from its anterior margin by a broad epistomial plate (see fig. 3).

The labrum (figs. 3, 8) constitutes a broad, quadrangular lobe, proceeding from the epistomial plate, with the middle of its posterior margin uniformly emarginated and densely ciliated.

The labium (fig. 9), deeply bifurcate, has the lateral lobes rounded, and without ciliation.

The mandibles (fig. 10) are powerful in structure, with the extremity directed towards the mouth very considerably dilated, and bent to an angle. The cutting edge itself exhibits anteriorly 2 dentate projections, and posteriorly a broad, grooved molar protuberance; between these 2 parts occur a few stiff, spiniform bristles. As usual, some difference in the armature is observed on the right and left mandibles; but this difference does not assume here a conspicuous character. Of any palp, no trace can be detected.

The 1st pair of maxillæ (fig. 11) have 2 anteriorly directed and somewhat incurving masticatory lobes, of which the outer one is the strongest. It is somewhat compressed from the sides, and finely ciliated along the inner margin; the extremity is abruptly truncate, and armed with strong, acute spines, arranged in divers rows. The inner masticatory lobe is considerably shorter and narrower than the outer, as also very movably connected with the basal part. It is, like the outer masticatory lobe, finely ciliated, and bears at the point 3 thick, ciliated spines.

The 2nd pair of maxillæ (fig. 12) are comparatively small and fragile in structure. On this pair, may be distinguished a broad, compressed, or somewhat lamelliform basal part, and a small bifurcate appendix attached to its outer corner. The inner, exceedingly arcuate border of the basal part, is furnished with a close-set series of stiff bristles, and constitutes the true masticatory margin. The aforementioned outer appendix, movably connected with the basal part, branches out into 2 digitiform lobules, each

Lap sig indleddet ved Basis af den indre, saaledes at begge egentlig forestiller 2 paa hinanden følgende Endeled.

Kjævefodderne (Fig. 13), der mere eller mindre fuldstændigt dækker de øvrige Munddele nedad og ved Basis støder tæt op mod hinanden (se Fig. 3), bestaar som sædvanligt af en noget tykkere Basaldel, en med denne bevægeligt forbunden, indad boiet 5-leddet Palpe og en til Ydersiden af Basaldelen fæstet pladeformig Epignath. Basaldelen gaar fortil ud i en temmelig stor tungedannet, i Kanterne haaret Tyggelap, der ved Hjælp af 3 tykke, krogformige Torner er ligesom hægtet sammen med den tilsvarende paa den anden Side. Af Palpens Led er det 1ste ganske kort, det 3die det største og ligesom de øvrige i den indre Kant tæt børstebesat: sidste Led er meget lidet, knudeformigt og ved Spidsen forsynet med en Del lignende Børster, men mangler ganske nogen virkelig Endeklo. Epignathen danner en oval fortilrettet Plade af temmelig fast Consistens og uden Børster i Kanterne. Den synes kun at være lidet bevægelig og fungerer alene som et Slags Dækplade. Ved Basis af Kjævefodderne findes paa hver Side en noget uregelmæssigt formet Chitinplade, hvis inderste Del danner en næsten halvcirkelformig, i den ene Kant cilieret Lap. Disse Basalplader maa nærmest betragtes som Sternaldelene af et særskilt Segment.

Fodderne er tilstede i det normale Antal, nemlig 7 Par, svarende til de 7 Forkropssegmenter; men de 4 forreste Par skiller sig i sit Udseende paa en meget paafaldende Maade fra de 3 bagerste og synes i sin Function snarere at maatte betragtes som Hjælperedskaber til Munddelene. De er derfor ogsaa, uligt de følgende Par, fortilstrakte og boiede ind mod Munden.

1ste Fodpar (Fig. 14) er det korteste af alle og ogsaa det, som saavel i Bygning som Stilling mest ligner Kjævefodderne. Det udspringer til hver Side af disse fra den indre Flade af de tungeformigt udlobende Epimerer af 1ste Forkropssegment og er ialmindelighed tæt trykket op mod Hovedets Underside. Det bestaar ligesom Kjævefodderne af en 6-leddet, noget indadkrummet og i den indre Kant tæt børstebesat Stamme, men mangler ganske Basalpladen. Af Leddene er det 1ste størst og danner med Resten af Stammen en stærk albuformig Bøining. Næstsidste Led er adskilligt længere end det foregaaende og stærkt afsmalnende mod Enden. Sidste Led er som paa Kjævefodderne særdeles lidet, knudeformigt og uden Endeklo.

De 3 følgende Fodpar er indbyrdes af ens Udseende og tiltager jevnt i Længde bagtil. De er (se Fig. 15) særdeles spinkle, i den ydre Kant fint knudrede og langs den indre Kant forsynede med en regelmæssig Rad a lange og tynde Borster. De bestaar tilsyneladende kun af 5 Led, hvoraf de 3 yderste er stærkt forlængede; men i Spidsen

bearing 3 coarsely ciliated bristles. On closer examination, the outer lobule is found to be jointed on to the base of the inner; and hence they strictly constitute 2 successively terminal joints.

The maxillipeds (fig. 13), which cover below, more or less completely, the other oral appendages, and at the base are contiguous (see fig. 3), consist as usual of a thickish basal part, a five-jointed palp movably connected therewith, and a lamelliform epignath attached to the outer side of the basal part. Anteriorly, the basal part protends as a rather large linguiform masticatory lobe, clothed with hair along the edges, which, by means of 3 thick, unguiform spines, is, as it were, hooked to the corresponding lobe on the opposite side. Of the joints of the palp, the 1st is quite short, the 3rd the largest, and, like the others, densely beset with bristles along the inner edge; the last joint is exceedingly small, tuberculiform, and, at the point, furnished with a number of similar bristles, but has no trace whatever of a true terminal claw. The epignath constitutes an oval, anteriorly directed plate, rather firm in consistence, and without bristles along the edges. It would appear to be but slightly movable, serving exclusively as a kind of covering-plate. At the base of the maxillipeds, is seen, on either side, a somewhat irregularly formed chitinous plate, the inner portion of which constitutes an almost semicircular lobe, ciliated on one of the edges. These basal plates should properly, we think, be regarded as the sternal portions of a separate segment.

The legs are present in the usual number, viz. 7 pairs, corresponding to the 7 segments belonging to the anterior division; but the 4 anterior pairs differ very conspicuously in appearance from the 3 posterior ones, their function being, it would seem, to serve as accessory parts to the oral appendages. They are, therefore — unlike the succeeding pairs — directed anteriorly, and bent in towards the mouth.

The 1st pair of legs (fig. 14) are the shortest of all, and moreover, that which in structure and position present greatest resemblance to the maxillipeds. They originate on either side of those appendages, springing from the inner surface of the linguiform-projecting epimera of the 1st thoracic segment, and are, as a rule, pressed close in to the under side of the head. Like the maxillipeds, they consist of a six-jointed, somewhat incurving, and, along the inner edge, densely bristle-beset stem, but the basal plate is entirely wanting. Of the joints, the 1st is the largest, and constitutes, together with the remaining portion of the stem, a strong, geniculate flexure. The penultimate joint is considerably longer than the preceding, and tapers abruptly towards the end. The last joint is, like that on the maxillipeds, exceedingly short, tuberculiform, and without any terminal claw.

The succeeding 3 pairs of legs exhibit a uniform appearance and gradual increase in length posteriorly. They are (see fig. 15) remarkably slender, finely tubercular along the outer edge, and on the inner furnished with a regular series of long and slender bristles. They consist apparently of but 5 joints, of which the outermost 3 are greatly pro-

af sidste Led bemærkes ved nøiere Undersøgelse en liden indadkrummet Klo, der egentlig repræsenterer et særskilt Endeled.

De 3 bagerste Fodpar (Fig. 16) viser et helt forskjelligt Udseende og forestiller de egentlige Gangfødder, hvormed Dyret klamrer sig fast til forskjellige Gjenstande paa Havbunden. I Overensstemmelse med denne deres Bestemmelse har de ogsaa en fra de forreste Par forskjellig Retning, idet de er vendte nedad og noget bagud, med en stærk knæformig Bøining mellem Basalleddet og den øvrige Del. De er af temmelig kraftig Bygning, med noget knudret Overflade og sparsom Haarbesætning, samt aftager successivt i Længde bagtil, idet Basalleddet hurtigt formindskes i Størrelse. Det temmelig smale cylindriske Endeled gaar ved Spidsen ud i en skarp triangulær Fortsats og bærer desuden en fra Leddet tydeligt afsat kort, men stærk Klo. Hele Leddet med sin Endeklo forestiller den saakaldte Dactylus, som her synes at være tvekloftet i Enden.

Under Midten af Forkroppen bemærkes (se Fig. 2) den saakaldte Brystpose eller Marsupium, der dannes af 3 Par tydelige, i Midten over hinanden gribende Plader, udgaaende fra 2det, 3die og 4de frie Segment.

Bagkroppens Lemmer er indbyrdes meget forskjellige baade i Function og Bygning. Der findes ialt 6 Par, hvoraf de 5 forreste ialmindelighed fuldstændig dækkes af det eiendommeligt modificerede sidste Par (se Fig. 18).

De 2 første Par (Fig. 19), der udgaar fra de 2 frie Bagkropssegmenter, er aabenbart uddannede til et Slags Svømmeredskaber og maa følgelig efter Dyrets Vilie kunne strækkes frem af den Cavitet, hvori de i Regelen er indesluttede sammen med de 3 følgende Par. De bestaar af en smal 2-leddet Stamme, til hvis Ende er fæstet 2 ligeledes smale, men med lange Fjærborster besatte Plader. Til Indersiden af Stammens ydre Led er fæstet en Rad af eiendommelige hageformige Torner, hvorved ethvert af disse Par ligesom hægtes sammen, saa at deres Bevægelser kun kan ske samtidigt.

De 3 følgende Par (Fig. 20), der altid ligger skjult i Bunden af den af Endesegmentet oventil begrændsede Cavitet, har Stammen ganske kort og kun bestaaende af et enkelt Led, hvorimod Endepladerne er af meget betydelig Størrelse, aflangt elliptiske og af en eiendommelig spongiøs Struktur, der tydelig nok stempler dem som Respirationsorganer. Naar undtages 2 korte Fjærborster i Yderkanten nær Spidsen af den ydre Plade, er de ganske børsteløse.

Sidste Par Bagkropslemmer, der svarer til Halevedhængene hos andre Isopoder er (se Fig. 18) i Lighed med hvad Tilfældet er hos Idotheerne omformede til et Par mægtigt udviklede og stærkt chitiniserede Plader, der fra hver Side hvælver sig ud over de øvrige Bagkropslemmer, næsten indtagende hele Bagkroppens Underside og mødende hinanden i Midtlinien. De er bevægeligt fæstede til hver

longed: but at the point of the last joint may be detected on closer examination a small, incurving claw, which, strictly, represents a separate terminal joint.

The 3 posterior pairs of legs (fig. 16) exhibit a widely different appearance, representing the true pereiopoda, by means of which the animal is enabled to grip hold of the various objects it encounters in its path over the sea-bed. In accordance with the function of these organs, they have, too, a direction different from that given the preceding pairs, being turned downward and somewhat backward, forming a strong, geniculate flexion between the basal and the remaining part. They are comparatively powerful in structure, with a somewhat rugged surface and thinnish covering of hair, and diminish successively in length posteriorly, the basal joint exhibiting a rapid decrease in size. The somewhat slender, cylindric terminal joint juts out at the extremity into an acute, triangular projection, and bears too a short but strong claw, distinctly defined from the joint. The whole joint, along with its terminal claw, represents the so-called dactylus, which, here, is apparently bifurcate at the extremity.

Beneath the middle of the anterior division of the body is seen (fig. 2) the so-termed incubatory pouch, or marsupium, composed of 3 pairs of distinct plates, overlapping in the middle, that proceed from the 2nd, 3rd, and 4th free segments.

The abdominal limbs are relatively very different, alike in function and structure. In all, the number of pairs is 6, of which the 5 anterior, as a rule, are completely covered by the peculiarly modified terminal pair (see fig. 18).

The 2 first pairs (fig. 19), proceeding from the 2 free abdominal segments, are manifestly adapted as a kind of natatory organs, and hence must, at the will of the animal, admit of being stretched forth from the cavity, in which as a rule they are enclosed, along with the 3 succeeding pairs. They consist of a slender, two-jointed stem, to the extremity of which are attached 2 narrow plates, beset with long, plumose bristles. To the inner side of the outer joint of the stem, is attached a series of peculiar, unguiform spines, by means of which each of these pairs are, as it were, hooked together; and hence their movements must of necessity be simultaneous.

The 3 succeeding pairs (fig. 20), which at all times lie concealed at the bottom of the cavity bounded above by the terminal segment, have the stem quite short and consisting but of one joint, whereas the terminal plates are of very considerable size, oblongo-elliptic, and exhibiting a peculiar, spongy structure, which obviously marks them as respiratory organs. With the exception of 2 short, plumose bristles on the outer edge, near the point of the outer plate, they are entirely devoid of bristles.

The last pair of abdominal limbs, corresponding to the caudal appendages in other Isopods, are (see fig. 18), as in the Idotheidæ, transformed into a pair of largely developed and strongly chitinized plates, which, on either side, arch out over the other limbs, occupying almost the whole under surface of the abdomen, and meeting each other along the medial line. They are movably attached to either side

Side nær Basis af Endesegmentet og lige under den trianguläre Sidefortsats med en kort og tyk Stilk og kan ved særegne Muskler slaaes til Siden ligesom de 2 Floie paa en Port. Ved Spidsen bærer de hver 2 korte ovale Endegrene, hvoraf den ene er særdeles liden og ganske dækket af den anden (se Fig. 21) samt besat med korte Borster.

Farven er i levende Tilstand ensformig skidden gulbrun. Øinenes Pigment kulsort.

Længden af de største erholdte Individer er, fraregnet Folerne, 40^{mm}.

Forekomst. Flere smukke Exemplarer af denne characteristiske Isopode toges under Expeditionens 1ste Togt i Havet Øst af Island (Stat. 48) fra et Dyb af 300 Favne. Under sidste Togt erholdtes endnu et Par Exemplarer af samme Art udenfor Vestkysten af Spitsbergen (Stat. 359). Dybden 416 Favne.

Udbredning. Arten er tidligere kjendt fra Færoerne, Island, Spitsbergen, Grønland og Polaroerne, og maa betragtes som en ægte arktisk Form.

at the base of the terminal segment, and immediately beneath the triangular lateral projection, by a short and thick pedicle, and admit, by the use of specially adapted muscles, of being pushed back, like the leaves of a folding door. At the point, they have each 2 short, ovate terminal branches, one of which is exceedingly small and completely covered by the other (see fig. 21), as also beset with short bristles.

Colour, when alive, a uniform dirty yellowish-brown; ocular pigment a coal-black.

Length of the largest specimens obtained — excluding the antennæ — 40^{mm}.

Occurrence. — Several fine examples of this characteristic Isopod were collected on the 1st cruise of the Expedition, in the open sea, east of Iceland (Stat. 48), from a depth of 300 fathoms. On the last cruise two more specimens of the same animal were taken, off the west coast of Spitzbergen (Stat. 359); depth 416 fathoms.

Distribution. — The species had been previously known from the Færoes, Iceland, Spitzbergen, Greenland, as also the Islands of the Polar Sea north of America, and must, therefore, be regarded as a true Arctic form.

21. Arcturus tuberosus, G. O. Sars, n. sp.

(Pl. IX. Fig. 22).

Arcturus tuberosus, G. O. Sars, Prodromus descript. Crust. etc., No. 72 (1876).

Arcturus baffini, var. Feildeni, Miers, Report on the Crustacea collected by the Naturalists of the arctic Expedition in 1875—76 (Ann. Nat. Hist. 1877), pg. 14. Pl. III. Fig. 1.

Artscharacteristik. Legemet noget mere undersætsigt end hos foregaaende Art, uden tydelige Haar og uden dorsale Torner, men med uregelmæssig knudret Overflade. Epimererne paa de 3 bagerste Forkropssegmenter stumpt tilspidsede. Endesegmentet med jevnt hvælvet Overflade. Øinene store, triangulært nyreformige. 2det Par Folere betydelig længere end Legemet, med 7-leddet Svøbe. Farven blegt kjodfarvet. Længden 35^{mm}.

Findested. Stat. 18.

Bemærkninger. Den her omhandlede Form staar foregaaende saa overmaade nær, at jeg har været i stor Tvivl om dens Gyldighed som distinct Art, især da der blot forelaa til Undersøgelse et enkelt Exemplar. Jeg opførte den derfor i min Prodromus kun med Forbehold som en ny Art og yttrede, at den muligvis kun vilde vise sig at være en ganske tilfældig Varietet af foregaaende. Aaret efter blev imidlertid den samme Form beskrevet af Miers fra den Engelske Nordpolexpedition i 1875—76 og angivet at forekomme endog i Mængde paa en Localitet, uden at

21. Arcturus tuberosus, G. O. Sars, n. sp.

(Pl. IX. fig. 22).

Arcturus tuberosus, G. O. Sars, Prodromus descriptionis Crust. etc., No. 72 (1876).

Arcturus baffini, var. Feildeni, Miers, Report on the Crustacea collected by the Naturalists of the Arctic Expedition in 1875—76 (Ann. Nat. Hist. 1877), p. 14. Pl. III. fig. 1.

Specific Character. — Body a trifle more thickset than in the preceding species, without distinctly perceptible hairs and without dorsal spines, but presenting an irregular rugged surface. Epimera on the 3 posterior pedigerous segments obtusely pointed. Terminal segment with uniformly arcuate surface. Eyes large, triangular-reniform. Second pair of antennæ considerably longer than body, with a seven-jointed flagellum. Colour a light pink. Length 35^{mm}.

Locality. — Stat. 18.

Remarks. — The form to be treated of here approximates so closely the preceding, that I have felt very greatly in doubt concerning its title to specific distinctness, and the more so since but one specimen only lay before me for examination. Hence, I recorded the animal in my "Prodromus" with considerable reservation as a new species, stating that it possibly would turn out to be a mere casual variety of the preceding. Meanwhile, the year after the same form was described by Miers from the English North Pole Expedition in 1875—76, and said by him to occur

nogen Tilnærmelse til det for A. baffini characteristiske piggede Udseende var at bemærke hos nogen af de her indsamlede Exemplarer. Miers opfører den vistnok desuagtet kun som en Varietet af A. baffini; men det synes mig dog, at det Faktum, at den selvsamme Form forekommer paa en vidt adskilt Localitet i Nordhavet, i Forbindelse med de ovenanførte Data, taler stærkt til Fordel for dens virkelige specifiske Forskjel fra A. baffini, hvorfor jeg ogsaa tror her at burde opføre den som en distinct Art under det af mig først foreslaaede Navn.

Beskrivelse af Hunnen. Legemets Form er (se Pl. IX. Fig. 22) omtrent som hos foregaaende Art, dog forholdsvis endnu noget mere undersætsig. Dets Overflade er noget ru, men ikke som hos A. baffini lodden, og de for hin Art characteristiske dorsale Fortsatser mangler her ganske eller er kun repræsenterede ved lidet fremspringende rundagtige Knuder.

Hovedet viser ovenfil istedetfor de 2 høie koniske Fortsatser, der udmærker foregaaende Art, kun en stump, i Midten noget fordybet Forhøining.

1ste frie Forkropssegment er ovenfil fuldkommen glat, hvorimod de 6 følgende har i Midten af Rygfladen en stump, tvedelt Forhøining. Epimererne paa de 3 sidste Segmenter er som hos foregaaende Art stærkt udstaaende til Siderne, men mindre skarpt tilspidsede.

Bagkroppens 2 første frie Segmenter er fuldstændig glatte, uden Spor af nogen dorsale Fortsatser, og heller ikke paa Endesegmentets Rygflade bemærkes nogen saadanne, hvorimod der ved Basis af samme findes til hver Side en stump triangulær Sidefortsats.

Øinene er af et lignende Udseende som hos A. baffini, store og fremstaaende, triangulært nyredannede og forsynede med mørkt Pigment.

Hvad Kroppens forskjellige Lemmer angaar, saa har jeg ikke kunnet undersøge disse saa nøiagtigt, som jeg kunde have ønsket, da det eneste foreliggende Exemplar maatte skaanes. Men de synes i alt væsentligt at ligne samme af A. baffini.

Det foreliggende Exemplar var en fuldt udviklet Hun og havde sine 2det Par Folere tæt besatte med den nylig af Brystposen udkrobne Yngel.

Farven var meget bleg kjødfarvet, faldende mest i det gule.

Længden af det erholdte Exemplar var, uden at regne Folerne, 35^{mm}.

Forekomst og Udbredning. Det beskrevne Exemplar optoges under Expeditionens 1ste Togt i Havet udenfor vor Vestkyst fra et Dyb af 412 Favne, indviklet i en de til Bundskraben fæstede Svabberter. Stationen tilhører den kolde Area og ligger paa Afhældet fra Havbankerne mod det udenfor liggende store Havdyb.

Som ovenanført blev den samme Form under den Engelske Nordpol-Expedition med "Alert" og "Discovery"

even in great abundance thoughout one locality, none of the specimens there taken having however exhibited the slightest approximation to the peculiar spiky appearance characteristic of A. baffini. Miers regards it indeed notwithstanding as a variety of A. baffini; but, in my judgment, the fact of the self same form occurring in a widely different locality in the Northern Ocean, together with the above-stated data, militates strongly in favour of its true specific distinctness from A. baffini; and hence I have seen fit to establish it as a separate species under the name I first suggested.

Description of the Female. — The form of the body (see Pl. IX. fig. 22) is about the same as that in the preceding species, though comparatively still more thickset. Its surface is somewhat rough, but not, as in A. baffini, clothed with hair; and the dorsal projections characteristic of that species are entirely wanting, or represented merely by small and but slightly protruding roundish knobs.

The head exhibits above, in place of the 2 elevated conical projections that distinguish the preceding species, simply an obtuse prominence, somewhat depressed in the middle.

The 1st free segment is perfectly smooth above, whereas the 6 succeeding segments have in the middle of the dorsal surface an obtuse, bifurcate prominence. The epimera on the last 3 segments project, as in the preceding species, very considerably toward the sides, but are less acutely pointed.

The 2 anterior free segments of the abdomen are perfectly smooth, without a trace of dorsal projections, nor can any such be observed on the dorsal surface of the terminal segment, whereas at the base is seen on either side an obtuse, triangular lateral projection.

The eyes, of the same appearence as in A. baffini, large and protuding, triangular-reniform, and furnished with a dark pigment.

As regards the various appendages of the body, I have lacked opportunity to examine them with the accuracy I could have wished, the only specimen before me having had to be very carefully handled. In all essential characteristics, however, they apparently resemble those in A. baffini.

The specimen secured was a fully developed female, and had the 2nd pair of antennæ thickly covered with young, that apparently had just left the marsupium.

The colour was an exceedingly light pink, with a distinct shade of yellow.

Length of the specimen obtained — excluding the antennæ — 35^{mm}.

Occurrence and Distribution. — The specimen described was brought up, on the 1st cruise of the Expedition, off the West Coast of Norway, from a depth of 412 fathoms, attached to one of the hempen tangles fastened to the dredge. The Station lay in the cold area, on the slope of the banks that shelve down to the great ocean depths.

As stated above, the same form was found on the English North Pole Expedition with the "Alert" and

fundet paa en vidt adskilt Localitet nemlig i Smith Sound under 82° 27″ Brede og her i talrige Exemplarer, baade Hunner, Hanner og Unger. Arten er herefter utvivlsomt ligesom foregaaende at betragte som en ægte arktisk Form.

"Discovery," in a widely different tract, viz. Smith's Sound, lat. 82° 27″ N., and numerous specimens obtained, comprising males, females, and young. Hence the species must, in common with the preceding, be regarded as a true Arctic form.

22. Arcturus hystrix, G. O. Sars, n. sp.

(Pl. IX, Fig. 23—26).

Arcturus hystrix, G. O. Sars, Prodromus descriptionis Crust. etc., No. 73.

Artscharacteristik. Legemet hos Hunnen næsten tenformigt, med talrige lange og spidse Torner, dannende regelmæssige Tværrader for hvert Segment. 4de Segment noget større end de øvrige og forsynet med 2 Tværrader af Torner. 2det Bagkropssegment ufuldstændigt skilt fra Endesegmentet, med 2 stærke dorsale Torner og store triangulære Sidefortsatser. Endesegmentet ved Basis forsynet med 2 lignende laterale Fortsatser og oventil med en dobbelt Række af Torner: Spidsen tvedelt. Øinene meget smaa, runde, med sort Pigment. 1ste Par Følere med Svøben smal, lineær og (hos Hunnen) kun forsynet med 3 Sandsevedhæng. 2det Par Følere kortere end Legemet, med Skaftets Led i Enden tornede og Svøben kun sammensat af 3 simple Led. De 3 bagre Fodpar med en stærk Torn i Midten af Basalleddets bagre Kant. Farven hvidagtig. Længden 9^{mm}.

Findesteder. Stat. 18, 124, 164.

Bemærkninger. Nærværende mærkelige Form viser ved første Øiekast et fra de 2 foregaaende Arter saa paafaldende forskjelligt Udseende, at man kunde være fristet til at se i den Typen for en helt anden Slægt. Jeg har imidlertid ved den anatomiske Undersøgelse fundet, at den idethele slutter sig nær til disse, ialfald nærmere end den efterfølgende Form, og foretrækker derfor indtil videre at henføre den til den typiske Slægt Arcturus. Som Characterer, der maaske kunde komme i Betragtning ved en generisk Adskillelse skal jeg her blot anføre den kun af 3 Led bestaaende Svøbe paa 2det Par Følere og 2det Bagkropssegments Sammenvoxning med Endesegmentet.

Beskrivelse af Hunnen. Legemet er (se Pl. IX, Fig. 23 og 24) af forholdsvis kort og undersætsig Form, med den største Brede kjendelig større end $^1/_4$ af Længden. Det er paa Midten stærkt opsvulmet, næsten tenformigt, og jevnt afsmalnende mod begge Ender. Hvad der især bidrager til at give denne Art sit ejendommeligt udprægede Udseende, er de høie og skarpe Torner, hvormed Legemet overalt er bevæbnet og som stritter ud til alle Sider lige-

22. Arcturus hystrix, G. O. Sars, n. sp.

(Pl. IX, figs. 23—26)

Arcturus hystrix, G. O. Sars, Prodromus descriptionis Crust. etc., No. 73.

Specific Character. — Body in female almost fusiform, with numerous long and acute spines, constituting regular transverse series for each segment. Fourth segment somewhat larger than the others, and furnished with 2 transverse series of spines. Second abdominal segment incompletely separated from terminal segment, with 2 strong dorsal spines and large, triangular lateral projections. Terminal segment furnished at base with 2 similar lateral projections, and, above, with a double row of spines; point bifurcate. Eyes very small, round, and provided with a black pigment. First pair of antennæ with flagellum slender, linear, and (in female) furnished with only 3 sensory appendices. Second pair of antennæ shorter than body, with the joints of the peduncle spiniferous at the extremity and the flagellum composed of only 3 simple joints. The three posterior pairs of legs with a strong spine springing from the middle of the posterior margin of the basal joint. Colour whitish. Length 9^{mm}.

Locality. — Stats. 18, 124, 164.

Remarks. — The present highly characteristic form exhibits at the first glance an appearance so strikingly divergent from the 2 preceding species, as to suggest its being the type of quite another genus. Meanwhile, the result of my anatomical examination has shown it, on the whole, to approximate those species closely, more so at least than is the case with the succeeding form; and hence I prefer classing it at present under the typical genus Arcturus. As characters that might perhaps be assigned generic value, I will merely call attention to the flagellum on the 1st pair of antennæ consisting of but 3 joints, and the 2nd abdominal segment being connate with the terminal segment.

Description of the Female. — The body (see Pl. IX, figs. 23, 24) is comparatively short and thickset in form, with its greatest breadth perceptibly exceeding one-fourth of the length. It is very tumid in the middle, almost fusiform, and tapers gradually toward both extremities. The character that more than any other contributes to give this species its peculiarly distinctive appearance, are the high and acute spines with which the body is

som Piggene paa et sammenrullet Pindsvin (deraf Artsbenævnelsen).

Integumenterne er særdeles haarde og faste, skjøndt noget gjennemsigtige og uden nogen tydeligt udpræget Skulptur eller Haarbesætning.

Hovedet er noget nedtrykt og har Panderanden i Midten temmelig stærkt udrandet, saa at Sidehjørnerne træder frem som afrundede Lapper, der delvis dækker 2det Par Foleres Basalled. Enhver af disse Lapper gaar nedad ud i et skarpt tandformigt Fremspring. Oventil er Hovedet forsynet med 8 tornformige Fortsatser, hvoraf de 2 staar over og noget foran Øinene, medens de øvrige 6 danner en buet Tværrad over den bagerste Del af Hovedet.

1ste frie Forkropssegment har Sidedelene udviklede paa en lignende Maade som hos de 2 foregaaende Arter til skjævt fortilrettede Lapper. Det har en regelmæssig Tværrad af 8 spidse Torner. Ethvert af de 2 følgende Segmenter viser en fuldkommen lignende Bevæbning. 4de Segment er betydelig baade længere og bredere end de øvrige og har 2 Tværrader af spidse Torner. De 3 følgende Segmenter aftager hurtigt i Brede bagtil og har hvert en enkelt Tværrad af Torner samt tilspidsede og til Siderne stærkt udstaaende Epimerer.

Bagkroppen, der omtrent indtager $^1/_4$ af Totallængden, bestaar tilsyneladende kun af 2 Segmenter, idet det 2det er ufuldstændigt begrændset fra Endesegmentet. 1ste Segment er meget lidet og har en Tværrad af Torner, som dog her er mindre end paa Forkropssegmenterne. Endepartiet, der altsaa ogsaa omfatter det hos de 2 foregaaende Arter tydeligt begrændsede 2det Segment, viser til hver Side 2 stærke triangulære og noget bagudkrummede Fortsatser og har oventil 4 parvis stillede, ligeledes bagudkrummede Torner, hvorpaa følger en dobbelt Rad af en Del noget mindre saadanne. Enden er ikke som hos de 2 foregaaende Arter simpelt tilspidset, men viser i Midten en tydelig Udrandning begrændset til hver Side af et kort tandformigt Fremspring.

Øinene er meget smaa, cirkelrunde og udstaaende til Siderne, med mørkt Pigment.

1ste Par Folere (Fig. 25) er omtrent af Hovedets Længde og viser en lignende Bygning som hos de 2 foregaaende Arter, dog med den Forskjel, at Svøben her er meget smal, lineær og kun forsynet med 3 Sandsevedhæng nær Spidsen.

2det Par Folere (se Fig. 23 og 24) er vistnok i Forhold til 1ste Par kraftigt udviklede, men dog paa langt nær ikke som hos de 2 foregaaende Arter, idet deres Længde i fuldt udstrakt Tilstand er kjendelig mindre end Totallængden. Basalafsnittet, som ogsaa her egentlig dannes af 2 Led, er kort og tykt og gaar ved Enden paa den

everywhere armed, and that bristle out on all sides, like the quills of a rolled-up porcupine (hence the specific designation).

The integuments are exceedingly hard and firm, though somewhat translucent, and have no perceptibly prominent sculpture or covering of hair.

The head is slightly depressed, with the frontal margin considerably emarginate in the middle, causing the lateral corners to protend as rounded lobes, that partly cover the basal joint of the 2nd pair of antennæ. Each of these lobes juts out below as an acutely dentiform projection. Above, the head is furnished with 8 spiniform projections, of which 2 are placed above and a little anterior to the eyes, whereas the remaining 6 constitute an arcuate transverse series, above the posterior part of the head.

The 1st free segment has the lateral parts developed in a manner precisely similar to those in the preceding species, viz. as oblique, anteriorly directed lobes. It has a regular transverse series of 8 acute spines. Each of the 2 succeeding segments exhibits a perfectly similar armature. The 4th segment is a good deal longer and broader than the others, and has 2 transverse series of acute spines. The 3 succeeding segments diminish rapidly in breadth posteriorly, and have each of them a single transverse series of spines, together with pointed epimera, projecting very considerably toward the sides.

The posterior division of the body, measuring about one-fourth of the total length, consists apparently of but 2 segments, the 2nd segment being imperfectly separated from the terminal one. The 1st segment is very small, and has a transverse series of spines, which, however, are smaller than those on the segments belonging to the anterior division. The terminal portion, comprising also accordingly the 2nd segment — distinctly defined in the 2 preceding species — exhibits on either side 2 strong triangular, and somewhat posteriorly curving projections, and has, above, 4 pairs of likewise posteriorly curving spines, to which succeeds a double series of similar but smaller ones. The extremity is not, as in the 2 preceding species, simple pointed, but exhibits in the middle a distinct emargination, bounded on either side by a short dentiform projection.

The eyes, laterally protruding, are very small, circular in shape, and furnished with a dark pigment.

The 1st pair of antennæ (fig. 25) are about of the same length as the head, and in structure similar to those in the 2 preceding species, saving, however, that the flagellum is very slender, linear, and provided with only 3 sensory appendices, in close proximity to the point.

The 2nd pair of antennæ (figs. 23, 24) are, indeed, as compared with the 1st pair, powerfully developed, by no means, however, to the same extent as in the 2 preceding species, their length, when fully extended, being perceptibly less than that of the body. The basal section, which here, too, strictly, consists of 2 joints, is short and

ydre Side ud i et stærkt tornformigt Fremspring; 2 andre mindre Torner sees paa den ovre Flade. Det følgende Led er ikke meget længere og gaar ligeledes ved Enden paa den ydre Side ud i en stærk Torn. De 2 følgende Led er tynde og forlængede, næsten af samme Længde indbyrdes, og det første af dem har ligeledes Enden uddraget i en spids Torn. Svøben (se Fig. 26) er ganske kort, omtrent halvt saa lang som Skaftets sidste Led og bestaar kun af 3 simpelt cylindriske Led, uden Torner og kun forsynede med nogle korte Haar.

Munddelene viser ingen væsentlig Forskjel fra samme hos den typiske Art.

De 4 første Fodpar er ligeledes idethele af samme Udseende som hos hin Art, alene med den Forkjel, at der fra Enden af Basalledet paa de 3 bagerste af disse Par udgaar en skarp, bagudrettet Torn.

De 3 bagre Fodpar aftager stærkt i Længde bagtil og er udmærket derved, at deres Basalled i Midten af den bagre Kant har et stærkt tandformigt Fremspring.

Brystposen er som hos A. baffini sammensat af 3 Par tydelige Plader.

Bagkroppens Lemmer viser ingen væsentlig Forskjel fra samme hos A. baffini.

Farven var i levende Tilstand hvidagtig, med et svagt grønligt Skjær, der vel for en Del skrev sig fra de i Brystposen indsluttede Æg. De fleste af Exemplarerne var imidlertid ved Optagelsen saa tæt besat med Smuds og forskjellige fremmede Partikler, der havde fæstet sig paa og mellem de talrige Pigge, at Legemets Form og Farve kun vanskeligt kunde erkjendes.

Længden af de største Exemplarer overskred ikke 9^{mm}.

Forekomst og Udbredning. 3 Exemplarer, alle Hunner, af denne distincte Form toges under Expeditionens 1ste Togt paa samme Sted (Stat. 18), hvor foregaaende Art erholdtes. Under 2det Togt fandtes enkelte Exemplarer, ligeledes Hunner, af samme Art paa 2 andre Lokaliteter i Havet udenfor Helgeland og Lofoten (Stat. 124 og 164), Dybden fra 350 til 457 Favne. Samtlige Stationer tilhører den kolde Area.

Artens for Tiden bekjendte Udbredning er saaledes Havet udenfor Norges ydre Havbanker fra den 63de til den 69de Bredegrad. Samme Art er imidlertid, som jeg har kunnet overbevise mig om ved et mig af Norman velvilligt meddelt Individ, ogsaa taget under Valorous' Expedition i de arktiske Farvande.

thick, and at the end juts forth on the outer side as a strong spiniform projection; 2 other smaller spines are seen on the upper surface. The succeeding joint is not much longer, and also juts forth at the end from the outer side as a strong spine. The 2 succeeding joints are slender and elongate, almost uniform in length, and the first has likewise the end produced as an acute spine. The flagellum (see fig. 26) is quite short, about half as long as the terminal joint of the peduncle, and consists of only 3 simple cylindric joints, without spines, and furnished with merely a few short hairs.

The oral appendages exhibit no essential difference from those in the typical species.

The 4 first pairs of legs have likewise, on the whole, the same appearance as in that species, saving only that a sharp, posteriorly directed spine proceeds from the end of the basal joint on the 3 hindermost of those pairs.

The 3 posterior pairs of legs diminish very much in length posteriorly, and are characterized by their basal joint having in the middle of the posterior margin a strong dentiform projection.

The marsupium is composed, as in A. baffini, of 3 pairs of distinctly developed plates.

The abdominal limbs exhibit no essential difference from those in A. baffini.

The colour, in a living state, was whitish, with a faint greenish tinge, in part no doubt arising from the eggs in the marsupium. Most of the specimens, however, were thickly incrusted with mud and other foreign substances, adhering to and between the numerous spikes, thus rendering the form and colour of the body extremely difficult to determine.

The length of the largest examples did not reach more than 9^{mm}.

Occurence and Distribution. — Three specimens of this distinct form, all of them females, were taken on the first cruise of the Expedition, in the same locality (Stat. 18) where the preceding species occurred. On the second cruise, a few examples were obtained of the same species, likewise females, in two other localities, viz. off Helgeland and Lofoten (Stats. 124 and 164); depth ranging from 350 to 457 fathoms. The Stations lie all of them in the cold area.

The distribution of the species, as at present known, extends accordingly throughout the ocean tract lying off the outer banks of the Norwegian coast, from the 63rd to the 69th parallel of latitude. The same form was, however, as I have found, from the examination of a specimen kindly sent me by Mr. Norman, likewise taken in the waters of the Polar Sea, on the British Expedition with the "Valorous."

Gen. 2. **Astacilla.** Fleming.

(Encycl. Brit. 7th edit. Vol. VII.

Synon. Leachia, Johnston (non Lesueur).

Slægtskarakter. Legemet mere eller mindre langstrakt, cylindriskt. 4de Forkropssegment stærkt forlænget, hos Hannen meget smalt, hos Hunnen bredere og nedad udvidet til Dannelsen af Brystposen. 2det Par Folere med Svøben ganske kort, 3-leddet, saugtakket i den indre Kant og endende med en skarp Torn. 1ste Fodpar med alle Led brede og pladeformige, sidste Led ovalt og forsynet med en tydelig Klo. Brystposen kun dannet af 2 valvelformige Plader tilhørende 4de Forkropssegment.

Bemærkninger. Hvad der hovedsageligt skiller denne Slægt fra foregaaende er Brystposens væsentlig forskjellige Bygning. I Forbindelse hermed staar ogsaa den uforholdsmæssige Udvikling af 4de Forkropssegment, der giver de herhen hørende Former et meget eiendommeligt Udseende. Den af Johnston foreslaaede Slægtsbenævnelse *Leachia* kan, skjøndt den har Prioriteten for Flemings, ikke bibeholdes, da dette Navn allerede tidligere er anvendt i Zoologien, nemlig for en Cephalopodeslægt. Ikke faa Arter af nærværende Slægt er beskrevne fra forskjellige Have, men de er ialmindelighed alle blevne henførte under Slægten Arcturus.

Gen. 2. **Astacilla.** Fleming.

(Encycl. Brit. 7th Edit. Vol. VII).

Synon. Leachia, Johnston (non Lesueur).

Generic Character. — Body more or less elongate, cylindrical. Fourth pedigerous segment greatly produced: in female broader, and, below, dilated — to form the marsupium. Second pair of antennæ, with flagellum quite short, three-jointed, serrate along the inner edge, and terminating in a sharp spine. First pair of legs with all the joints broad and lamelliform, terminal joint oval and furnished with a distinct claw. Marsupium composed of only 2 valvular plates, belonging to 4th pedigerous segment.

Remarks. — The character that principally causes this genus to differ from the preceding, is the essentially deviating structure of the marsupium. In conjunction with this distinctive divergence, comes the disproportionate development of the 4th segment, giving to all the forms belonging to the genus a very peculiar aspect. The generic appellation *Leachia*, suggested by Johnston, though with a prior claim to Fleming's, cannot be retained, that name having already been adopted in zoology, viz. to designate a genus of Cephalopods. Not a few species of the present genus have been described from specimens taken in various parts of the ocean; they have well-nigh all, however, been referred to the genus Areturus.

23. **Astacilla granulata** (G. O. Sars).

(Pl. IX, Fig. 27—35).

Leachia granulata, G. O. Sars. Prodromus descript. Crust. etc. No. 73 (1876).

Astacilla americana, Harger, Am. Journ. Sci. III, Vol. XV, pg. 374 (1878).

Astacilla granulata, Harger. Report on the marine Isopoda of New England, pg. 364, Pl. VIII & IX, Fig. 48—53.

Artskarakteristik. Legemet hos Hunnen omtrent 7 Gange længere end bredt, oventil forsynet med talrige smaa afrundede Tuberkler. Hovedet oventil med en noget større, tvedelt Tuberkel. 4de Forkropssegment hos Hunnen indtagende mere end $^1/_3$ af Totallængden, noget udvidet fortil og paa sin Overflade granuleret af smaa ensformigt udviklede Knuder; hos Hannen overordentlig smalt, cylindriskt. De 3 bagre Forkropssegmenter med triangulære tilspidsede Epimerer. Bagkroppen forholdsvis kort, med sidste Segment kun lidet udtrukket i Enden, oventil stærkt knudret og ved Basis forsynet med 2 triangulære Sidefortsatser.

23. **Astacilla granulata** (G. O. Sars), n. sp.

Pl. IX, figs. 27—35.

Leachia granulata, G. O. Sars, Prodromus descriptionis Crust. etc. No. 76 (1876).

Astacilla americana, Harger, Am. Journ. Sci. III, Vol. XV, p. 374 (1878).

Astacilla granulata, Harger, Report on the marine Isopoda of New England, p. 464, Pl. VIII & IX, figs. 48—52.

Specific Character. — Body in female about 7 times longer than broad, furnished above with numerous small rounded tubercles. Head, above, with a somewhat large bifurcate tubercle. Fourth segment, in female, measuring more than one-third of the total length, somewhat dilated anteriorly, and, on its surface, granulated with small, uniformly developed protuberances; in male, remarkably slender, cylindric. The three posterior pedigerous segments with triangular-pointed epimera. Abdomen comparatively short, with the terminal segment but slightly produced toward the extremity; above, exceedingly rugged, and

Øinene næsten trekantede, med mørkt Pigment. 1ste Par Følere med sammentrykt, paa Midten noget udvidet Svøbe. 2det Par Følere lige udstrakte næsten af Legemets Længde. Farven blegt gulgraa. Længden 14^{mm}.

Findesteder. Stat. 18, 48, 124, 164, 200.

Bemærkninger. Nærværende Art kjendes fra vore tre øvrige Arter: A. longicornis, affinis og pusillus, med hvilke den i sin ydre Habitus idethele stemmer overens, ved sit oventil jevnt og tæt knudrede Legeme, den forholdsvis korte Bagkrop og det i Spidsen kun lidet udtrukne Endesegment.

Beskrivelse af Hunnen. Legemet er (se Pl. 9, Fig. 27 og 28) af den sædvanlige smale og langstrakte Form, dog noget kortere end hos den typiske Art, A. longicornis, idet den største Brede omtrent er lig $^1/_4$ af Længden.

Integumenterne er ikke meget faste og paa hele den dorsale Flade forsynede med talrige smaa afrundede Knuder, men uden Haar eller Torner.

Hovedet er i sin forreste Del temmelig nedtrykt, med Panderanden jevnt udrandet og Sidehjørnerne udtrukne til tungeformige Lapper. I Midten af den øvre Flade findes en større stump Forhøining, der ved en grund Længdefure er delt i 2.

Af de frie Forkropssegmenter er de 3 forreste ganske korte og oventil noget uregelmæssigt knudrede; det 1ste har den forreste Rand dybt udrandet for Hovedet og Epimererne udtrukne i en fortilrettet noget tilspidset Flig.

4de Forkropssegment er særdeles stort, indtagende mere end $^1/_3$ af Totallængden, og viser fortil til hver Side et knudeformigt Fremspring lige over det tilsvarende Fodpars Insertion. Hele dets øvre Flade er jevnt og tæt granuleret af smaa afrundede Tuberkler, medens dets nedre Flade er glat og indtages af den mere eller mindre stærkt udbuede Brystpose.

Det bagenfor liggende Parti af Legemet er ved en meget bevægelig Articulation forbundet med dette Segment, hvorfor denne Del kan bøies saaledes, at den danner en større eller mindre Vinkel med den øvrige Del af Legemet (sml. Fig. 32), eller, naar, hvad der er det sædvanlige, dette bagre Parti er fixeret, kan den forreste Del af Legemet svinges pendelformigt frem og tilbage i Forhold til hint.

Den forreste Del af dette bagre Kropsparti indtages af de 3 bagerste Forkropssegmenter, der oventil er adskilte ved dybe, af en blød Hud dækkede Indsnøringer og derfor ogsaa indbyrdes viser en temmelig fri Bevægelighed. Deres øvre Side er noget pukkelformigt fremspringende og

furnished at the base with 2 triangular lateral projections. Eyes well-nigh triangular, with a dark pigment. First pair of antennæ with a compressed, and, in the middle, somewhat dilated flagellum. Second pair of antennæ, when fully extended, almost as long as the body. Colour a pale yellowish-grey. Length 14^{mm}.

Locality. — Stats. 18, 48, 124, 164, 200.

Remarks. — The present species may be recognized from our three other forms: — A. longicornis, A. affinis, and A. pusillus, which exhibit on the whole a rather similar habitus, by its having the body, above, uniformly rugged, the abdomen comparatively short, and the terminal segment but slightly produced.

Description of the Female. — The body (see Pl. 9, figs. 27, 28) of the usual slender and elongate form, though somewhat shorter than in the typical species, A. longicornis, the greatest breadth being about equal to one-fourth of the length.

The integuments, which are not very firm, exhibit over the whole of the dorsal surface numerous small rounded prominences, but are without either hairs or spines.

The head is a good deal depressed throughout its anterior portion, with the frontal margin uniformly emarginate and the lateral corners produced as linguiform lobes. In the middle of the upper surface is seen a large obtuse prominence, which, by a shallow longitudinal sulcus, is divided in two.

Of the free segments, the 3 anterior ones are quite short, and, above, somewhat irregularly rugged; the 1st has the anterior border deeply emarginate, and the epimera produced as anteriorly directed, somewhat acute lobules.

The 4th segment is exceedingly large, measuring more than one-third of the total length, and exhibits anteriorly, on either side, a tuberculiform projection, directly above the points of insertion of the corresponding pairs of legs. Its entire upper surface is uniformly and closely granulous, with small rounded tubercles, while the lower surface is smooth, and occupied by the more or less prominently arched marsupium.

The succeeding portion of the body is connected, by an exceedingly movable articulation, with this segment; and the said part admits in consequence of being so bent as to form a greater or lesser angle with the rest of the body (see fig. 32), or when — which as a rule is the case — this posterior part remains fixed, the whole anterior portion admits of being swung pendulum-like backwards and forwards.

The anterior part of this posterior region of the body is occupied by the 3 hindermost pedigerous sgments, which, above, are separated one from the other by deep instrictions, covered with a soft skin; and hence they possess in their mutual relation very considerable mobility. Their upper side projects in a somewhat hunched form,

som den ovrige Rygflade knudret. Epimererne er stærkt udstaaende til Siderne og triangulært tilspidsede.

Bagkroppen, der kun er lidet længere end det bagre Parti af Forkroppen, bestaar af 3 tydeligt begrændsede Segmenter, hvoraf de 2 forreste er meget smaa. Endesegmentet er af triangulær Form, oventil temmelig stærkt hvælvet og grovt knudret, samt ved Basis til hver Side forsynet med et triangulært Fremspring. Enden er stumpt tilspidset og mindre udtrukket end hos de ovrige Arter.

Øinene er temmelig store, med en jevnt convex Overflade, og viser seede fra Siden en uregelmæssig kantet, næsten triangulær Form. Deres Pigment er af en dyb sort Farve.

1ste Par Følere (Fig. 29) er omtrent af Hovedets Længde og bestaar som hos foregaaende Slægt af et 3-leddet Skaft og en uleddet Svøbe. Skaftets 1ste Led er noget udvidet, pladedannet, dog mindre bredt end hos foregaaende Slægt; de 2 ovrige Led er betydelig smalere og ganske simple, uden Torner eller Saugtakker. Svøben er noget længere end de 2 sidste Led af Skaftet tilsammen, sammentrykt fra Siderne og noget udvidet paa Midten samt i sit yderste Parti langs den ydre Kant forsynet med 7 klare Sandsevedhæng.

2det Par Følere (se Fig. 27 og 28) er, lige udstrakte, næsten af Legemets Længde. I sin Bygning ligner de idethele samme hos foregaaende Slægt, men er forholdsvis kraftigere og mere egnede som Griberedskaber. Svøben (Fig. 30) er neppe halvt saa lang som Skaftets sidste Led og kun sammensat af 3 Led, hvoraf det 1ste er længere end de 2 ovrige tilsammen. Alle disse 3 Led er stærkt chitiniserede og viser langs den indre Rand en tæt Rad af regelmæssige Saugtakker; sidste Led bærer paa sin Ende en skarp kloformig Torn.

Munddelenes Bygning stemmer idethele saa nær overens med samme hos foregaaende Slægt, at en detailleret Beskrivelse af samme maa ansees unødvendig.

Ogsaa Fødderne er af et meget lignende Udseende, skjøndt Forskjellen mellem de 4 forreste og de 3 bagerste Par her bliver endnere udpræget ved det betydelige Mellemrum, der ligger mellem begge og som indtages af Størsteparten af 4de Forkropssegment.

1ste Fodpar (Fig. 31) viser dog en kjendelig Afvigelse, baade derved, at det er forholdsvis større, og derved, at alle Led, ogsaa de yderste, er pladeformigt udvidede. Sidste Led er af oval Form og ved Spidsen forsynet med en tydelig, kloformig Torn, der ganske savnes hos foregaaende Slægt.

De 3 bagre Fodpar (se Fig. 28) er forholdsvis kortere, og navnlig er Basalleddets Længde her betydelig ringere.

Brystposen viser her en væsentlig forskjellig Bygning.

and is, like the rest of the dorsal surface, rugged. The epimera, triangular-pointed, jut prominently forth toward the sides.

The posterior division of the body — but very little longer than the hinder part of the anterior — consists of 3 distinctly defined segments, of which the 2 first are exceedingly small. The terminal segment is triangular in form, and less produced than in the other species.

The eyes rather large, with a uniformly convex surface, and exhibiting — lateral view — an irregularly edged, well-nigh triangular appearance. Their pigment is jet black.

The 1st pair of antennæ (fig. 29) are about as long as the head, and consist, as in the preceding genus, of a three-jointed peduncle and a uni-articulate flagellum. The 1st joint of the peduncle is somewhat dilated, lamelliform, though less broad than in the preceding genus; the 2 other joints are much more slender, and quite simple, without either spines or serrate denticles. The flagellum — somewhat longer than the 2 last joints of the peduncle, taken together — is compressed from the sides and slightly dilated in the middle, as also, in its outermost part, furnished along the exterior edge with 7 translucent sensory appendices.

The 2nd pair of antennæ (see figs. 27, 28) are, when fully extended, almost of the same length as the body. In structure, they resemble on the whole those in the preceding genus, but are relatively more powerful, and better adapted to serve as prehensile organs. The flagellum (fig. 30) is scarcely half as long as the terminal joint of the peduncle, and composed of only 3 joints, of which the 1st is longer than the 2 others taken together. These 3 joints are all exceedingly chitinous, and exhibit along the inner margin a close series of regular denticles arranged in a pectinate form; the terminal joint bears at the extremity an acute unguiform spine.

The structure of the oral appendages agrees on the whole so closely with that in the preceding genus, that a detailed description may be regarded as superfluous.

The legs, too, present a very similar appearance, though the deviation between the 4 anterior and the 3 posterior pairs is rendered still more prominent by reason of the extensive interspace, occupied by the greater part of the 4th segment.

The 1st pair of legs (fig. 31) exhibit however a perceptible divergence, being both relatively larger and having all the joints, the 2 outermost even, lamelliform-dilated. The terminal joint is oval in form, and, at the point, furnished with a distinct, unguiform spine, entirely wanting in the preceding genus.

The 3 posterior pairs of legs (see fig. 28) are relatively shorter, the length of the basal joint in particular being considerably less.

The marsupium exhibits an essentially different struc-

Den er (se Fig. 28), i Modsætning til hvad Tilfældet er hos Slægten Arcturus, alene indskrænket til 4de Forkropssegment og dannes af 2 fra dettes Ventralside udgaaende brede, valvelformige, i Midten sammenstodende Klapper, indenfor hvilke de talrige Æg har sin Plads.

Bagkroppens Lemmer stemmer i alt væsentligt fuldkommen overens med samme hos foregaaende Slægt.

Beskrivelse af Hannen. Den fuldt udviklede eller slægtsmodne Han (Fig. 32) viser et fra Hunnen meget afvigende Udseende, idet Legemet er betydelig spinklere. Navnlig gjælder dette 4de Forkropssegment, der er overordentlig smalt, regelmæssigt cylindriskt og kjendeligt længere end det bagenfor liggende Afsnit af Legemet.

Af Lemmerne er det alene 1ste Par Følere og de 2 forreste Par Bagkropslemmer, der viser nogen udpræget Forskjel fra samme hos Hunnen.

1ste Par Følere (Fig. 33) er forholdsvis større end hos Hunnen og har navnlig Svøben stærkere udviklet og af samme Længde som hele Skaftet. Ligeledes er de til samme fæstede Sandsevedhæng tilstede i et betydelig større Antal, nemlig 13.

De til Ventralsiden af sidste Forkropssegment fæstede ydre Kjønsvedhæng har (se Fig. 34) Formen af 2 cylindriske, fra en fælles Basis udgaaende og med smaa Pigge besatte Fortsatser, der er rettede bagtil mellem Roden af 1ste Par Bagkropslemmer. Indenfor den fælles Basis sees tydeligt de 2 convergerende vasa deferentia, der begiver sig hvert ind i den tilsvarende Fortsats og ender med en fin Aabning paa den stumpe Spids af samme.

1ste Par Bagkropslemmer (Fig. 34) udmærker sig derved, at den ydre Plade viser en eiendommelig Bøining ved Basis, samt derved, at den indre Plade nær Roden har i den ydre Kant en Udstaaenhed, hvortil 3 stærke uciliérede Børster er fæstede.

Endnu mere afvigende er 2det Par (Fig. 35). Den ydre Plade er nemlig her forsynet med et temmelig stort koniskt tilspidset og med 2 stive Børster endende Vedhæng, der er fæstet til en stærk Afsats i den ydre Kant nær Basis. Dette Par synes herved ved første Øiekast at bære 3 Endeplader.

Begge disse Par Lemmers eiendommelige Bygning staar aabenbart i et bestemt Forhold til Copulationsakten, og vi træffer ogsaa lignende Indretninger hos andre Isopodehanner.

Farven saavel hos Han som Hun er ensformig lys graagul, uden mørkere Shatteringer.

Længden af Hunnen er 14^{mm}. Hannen er noget længere.

Forekomst og Udbredning. Exemplarer af den ovenfor beskrevne Art er indsamlede paa 5 forskjellige Stationer, hvoraf de 4 ligger langs med det vestlige Afheld fra vore Havbanker fra Høiden af Romsdalen til Høiden af Nordkap, den 5te (Stat. 48) i Havet Øst af

ture. Contrary to what is the case in the genus Arcturus, it is exclusively confined to the 4th pedigerous segment, and composed of 2 broad valvular flaps, proceeding from its ventral side and meeting in the middle, within which the numerous eggs are deposited.

The abdominal limbs agree perfectly in all essential characteristics with those in the preceding genus.

Description of the Male. — The full-grown or sexually mature male (fig. 32) presents an appearance very different from that of the female, the body being much more slender. This applies more particularly to the 4th segment, which is exceedingly narrow, regular-cylindric, and obviously longer than the succeeding section of the body.

Of the appendages, it is the 1st pair of antennæ only, and the 2 foremost pairs of pleopoda that exhibit any considerable difference from those in the female.

The 1st pair of antennæ (fig. 33) are relatively larger than in the female, having in particular the flagellum more fully developed, and equal in length to the whole peduncle. Moreover, the sensory appendices attached to the latter are present in a much greater number, — viz. 13.

The outer sexual appendages attached to the ventral side of the last pedigerous segment, have the form (see fig. 34) of 2 cylindrical projections, issuing from a common base and beset with minute spikes, the said projections extending backward between the bases of the 1st pair of pleopoda. Within the common base, are distinctly seen the 2 converging vasa deferentia, each of which enters the corresponding projection, and terminates in a minute orifice on its obtuse point.

The 1st pair of pleopoda (fig. 34) are characterized by the outer plate exhibiting a peculiar bend at the base, as also by the inner plate having, in proximity to the base, on the outer border, a protuberance, to which are attached 3 strong non-ciliated bristles.

Still greater is the divergence of the 2nd pair (fig. 35). The outer plate, namely, is here furnished with a rather large, conically pointed appendix, terminating in 2 stiff bristles, attached to a strong ledge on the outer margin, near the base. This pair acquire thereby, at the first glance, the appearance of bearing 3 terminal plates.

The peculiar structure of both these pairs of pleopoda must obviously stand in some relation to the act of copulation; indeed, something similar is met with in other Isopod males.

Colour, both in the male and female, a uniform light greyish-yellow, without any darker shades.

Length of the female 14^{mm}: the male is a trifle longer.

Occurrence and Distribution. — Specimens of the species described above were collected at 5 different Stations, 4 located along the western slope of the outer Norwegian banks, extending from Romsdalen to the North Cape, the 5th (Stat. 48) in the open sea, east of Iceland;

Island; Dybden fra 290 til 620 Favne. Alle Stationer tilhører den kolde Area.

Artens for Tiden bekjendte Udbredning i Nordhavet strækker sig herefter fra den 63de til den 71de Bredegrad og fra 16° O. L. til 9° V. L. Men samme Form er ogsaa observeret hinsides Atlanterhavet ved New Englands Kyst (Harger), og Norman har sendt mig Exemplarer af samme Art fra den engelske Expedition med Valorous. Det synes heraf at fremgaa, at nærværende Art har en temmelig vid geografisk Udbredning i de nordlige Have. Den er, som de i det foregaaende omhandlede Arter af Slægten Arcturus, at anse som en ægte arktisk Form.

depth ranging from 290 to 620 fathoms. All the Stations in the cold area.

The known distribution of the species, therefore, in the Northern Seas, extends at present from the 63rd to the 71st parallel of latitude, and from long 16° E. to long 9° W. But the same form has been also observed on the other side of the Atlantic Ocean, off the coast of New England (Harger); and Mr. Norman has sent me examples of the same species, taken on the British Expedition with the "Valorous." Hence, the present species would appear to have a rather wide geographical distribution throughout the tracts of the Northern Ocean. It must, in common with the previously described species of the genus Arcturus, be regarded as a true Arctic form.

Fam. 2. **Idoteidæ.**

Gen. 1. **Glyptonotus,** Eights. 1853.

Amr. Journal. Sciences. Ser. 2 Vol. XV.

Synon. Chiridotea, Harger.

Slægtscharacteristik. Legemet af mere eller mindre undersætsig Form, oventil jevnt hvælvet, med tydeligt markeret Grændse mellem For- og Bagkrop. Hovedet meget bredt, med laterale, pladeformige Udvidninger. 1ste Forkropssegment med Sidedelene fortilboiede; de ovrige med vel adskilte, bagtil tilspidsede Epimerer. Bagkroppen sammensat af 4 tydeligt begrændsede Segmenter, de 3 forreste meget smaa, Endesegmentet stort og bagtil udtrukket i en skarp Spids. Øinene, naar de er tilstede, paa den ovre Flade af Hovedet. 2det Par Folere robuste med Skaftets Led mere eller mindre pladeformigt udvidede. Svøben mangeleddet. De 3 forreste Fodpar ulige de ovrige, forsynede med stærke Gribehænder; de 4 bagerste Par ægte Gangfødder. De valvelformige Halevedhæng med 2 tydelige Endeplader.

Bemærkninger. Nærværende af Eights først opstillede Slægt er især udmærket ved Forholdet af Fødderne, hvoraf de 3 forreste er ægte Griberedskaber, medens de 4 bagerste er væsentlig forskjelligt byggede og forestiller de egentlige Gangfødder. Foruden den nedenfor beskrevne Form hører herhen den meget nærstaaende *Idotea Sabini* Kröyer, *I. entomon* Lin., 2 nordamerikanske Arter *Ch. caeca* (Say) og *Tuftsii* (Stimpson), endelig en kjæmpemæssig Art fra det sydlige Polarhav, *Gl. antarcticus* Eights. Slægten tæller altsaa for Tiden 6 Arter, samtlige tilhørende de koldere Have.

Fam. 2. **Idoteidæ.**

Gen. 1. **Glyptonotus,** Eights. 1853.

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Synon. Chiridotea, Harger.

Generic Character. — Body more or less thickset in form, uniformly arched above, with a distinctly defined boundary between the anterior and posterior divisions of the body. Head exceedingly broad, with lateral, lamelliform dilatations. First segment, with its lateral parts anteriorly bent, the rest having well developed, posteriorly pointed epimera. Posterior division of body composed of 4 distinctly defined segments, the 3 foremost exceedingly small, terminal segment large and posteriorly produced to a sharp point. Eyes, when present, on upper surface of head. Second pair of antennæ robust in structure, with the joints of the peduncle more or less lamelliform-dilated, flagellum multi-articulate. The three anterior pairs of legs differing from the rest, being provided with powerful prehensile hands. The four posterior pairs, true ambulatory legs. Valvular caudal appendages with 2 distinctly developed terminal plates.

Remarks. — The present genus, first established by Eights, is chiefly distinguished by the characteristic structure of the legs, the 3 anterior pairs being true prehensile organs, whereas the 4 posterior have an essentially different structure, representing the true pereiopoda. Exclusive of the form described below, to this genus belong the closely approximating, — *Idotea Sabini*, Kröyer: *I. entomon*. Lin.; 2 North American species, *Ch. caeca* (Say) and *Tuftsii* (Stimpson); and finally, a gigantic species from the southern Polar Sea, *Gl. antarcticus*, Eights, all inhabiting the colder ocean tracts.

24. Glyptonotus megalurus, G. O. Sars, n. sp.

(Pl. X. Fig. 1—23).

Idotea Sabini, var. G. O. Sars, Prodromus descriptionis Crust. etc., No. 69.

Chiridotea megalura, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 7.

Artscharacteristik. Legemet af aflang Form, ikke fuldt 4 Gange saa langt som bredt. Forkroppen næsten overalt af ens Brede. Bagkroppen af samme Længde som Forkroppen; Endesegmentet særdeles stort og bredt, med Sidekanterne jevnt convexe og Enden konisk tilspidset, næsten horizontal. Intet Spor af Øine. 2det Par Folere med Skaftets 2det Led dannende udad en bred børstebesat Lap, Svøben af samme Længde som Skaftets 3 sidste Led tilsammen og bestaaende af 6—8 Led. Farven ensformigt graalig. Længden indtil 50^{mm}.

Findesteder. Stat. 35, 40, 183, 295, 353.

Bemærkninger. Den her omhandlede kjæmpemæssige Isopode viser en saa stor habituel Lighed med den af Kröyer beskrevne *Idotea Sabini*, at jeg i Begyndelsen kun holdt den for en Varietet af samme. Efter imidlertid senere at have undersøgt authentiske Exemplarer af sidstnævnte Art, finder jeg dog, at begge disse Former, omend særdeles nærstaaende, dog maa adskilles som distincte Arter. Fra *Ch. Sabini* kjendes vor Form let ved den langt betydeligere Størrelse og afvigende Form af Bagkroppens Endesegment samt ved den ensformige graalige Farve.

Beskrivelse. Legemet er (se Pl. X. Fig. 1 og 2) af aflang Form, næsten 4 Gange saa langt som bredt, noget nedtrykt, dog med temmelig stærkt hvælvet Rygflade. Forkroppen er næsten overalt af ens Brede, medens Bagkroppen ved Basis viser en stærk Indknibning.

Integumenterne er paa Rygsiden meget haarde og stærkt incrusterede samt viser under Mikroskopet en fint granuleret Skulptur.

Hovedet er omtrent 3 Gange bredere end langt, oventil temmelig stærkt hvælvet, med en utydelig Indtrykning langs Midten. Det gaar til hver Side ud i en triangulær pladedannet Fortsats, der i Kanterne er besat med korte Børster og fortil ved et lidet Indsnit skilt fra Panderanden. Denne er i Midten ganske svagt indbøgtet, forøvrigt ganske glat.

1ste Forkropssegment har den forreste Rand dybt concav for at kunne optage Hovedet. Dets Sidedele eller Epimerer, der ikke ved nogen Sutur er skilte fra Segmentet, er noget fortilbøiede, pladeformige og ender med et tydeligt, næsten retvinklet Hjørne. Den bagre Rand er paa

24. Glyptonotus megalurus, G. O. Sars, n. sp.

(Pl. X. figs. 1—23).

Idotea Sabini, var., G. O. Sars, Prodromus descriptionis Crust., etc. No. 69.

Chiridotea megalura, G. O. Sars, Crustacea et Pycnogonida nova, etc., No. 7.

Specific Character. — Body oblong in form, not quite 4 times as long as broad. Anterior division almost everywhere uniform in breadth. Posterior division equal in length to anterior; terminal segment exceedingly large and broad, with the lateral margins uniformly convex and the extremity conically pointed, almost horizontal. No trace of eyes. Second pair of antennæ with 2nd joint of peduncle forming exteriorly a broad setiferous lobe, flagellum equal in length to the 3 last joints of peduncle taken together, and consisting of from 6 to 8 articulations. Colour a uniform grey. Length reaching 50^{mm}.

Locality. — Stats. 35, 40, 183, 295, 353.

Remarks. — The gigantic Isopod treated of here exhibits so great a resemblance in its outer habitus to Kröyer's *Idotea Sabini*, that at first I felt disposed to regard it as a mere variety of that form. Meanwhile, having since examined authentic specimens of the latter species, I am now clearly of opinion that the two aforesaid forms, though very closely approximating, must nevertheless be assigned specific distinctness. From *Ch. Sabini*, the form in question is easily recognized by its far greater size and the deviating shape characterizing the terminal segment, as also by its uniform greyish colour.

Description. — The body (see Pl. X. figs. 1, 2) oblong in form, almost 4 times as long as broad, somewhat depressed, though with the dorsal surface rather prominently arched. The anterior division of the body almost everywhere uniform in breadth, whereas the posterior division exhibits at the base a deep instriction.

The integuments, on the dorsal side, exceedingly hard and very considerably incrusted, as also, when examined under the microscope, exhibiting a finely granulous sculpturing.

The head about 3 times broader than long, above rather prominently arched, with a slight, indistinct impression along the middle. It juts out on either side as a triangular, lamelliform projection, beset along the edges with short bristles, and, anteriorly, separated by a slight incision from the frontal margin. The latter is very faintly incurved in the middle; for the rest, quite smooth.

The 1st free segment has the anterior margin deeply concave, to serve for the reception of the head. Its lateral portions, or epimera, not separated by any suture from the segment, are somewhat anteriorly bent, lamelliform, and terminate in a distinct, well-nigh rectangular corner. The

dette ligesom de følgende Segmenter noget hævet og stærkt fortykket.

De øvrige 6 Forkropssegmenter er alle næsten af ens Udseende og Storrelse samt forsynede med tydeligt afsatte, triangulære og bagudrettede Epimerer, der successivt tiltager i Storrelse bagtil.

Bagkroppen er omtrent af Forkroppens Længde og bestaar af 4 tydeligt begrændsede Segmenter, hvoraf de 3 forreste er særdeles smaa og forsynede med korte tilspidsede Epimerer. Endesegmentet er derimod overordentlig stort og bredt, i sin forreste Del neppe synderlig smalere end Forkroppen og oventil stærkt hvælvet. Dets Sidekanter er jevnt bueformigt boiede, uden at vise nogen saadan pludselig Indknibning paa Midten som hos *Gl. Sabini*. Enden er som hos denne Art uddraget i en skarp Spids, men som her er noget kortere og næsten horizontal, ikke opadkrummet.

Af Øine er der ikke det allermindste Spor at opdage.

1ste Par Folere (Fig. 3), der udspringer tæt sammen fra den forreste Rand af Hovedet, er noget længere end dettes halve Brede og bestaar af et 3-leddet Skaft og en cylindrisk, uleddet Svobe. Skaftets 1ste Led er kort, men bredt, næsten pladeformigt, de 2 øvrige mere cylindriske. Svoben er noget kortere end Skaftet og næsten overalt af ens Brede. Langs dens ene Kant bemærkes flere Knipper af meget smaa, klare Sandsevedhæng (Lugtepapiller) (se Fig. 5), og til den stumpt endende Spids er (se Fig. 4) foruden 3 saadanne endnu fæstet en temmelig lang simpel Borste og en meget liden penselformig Horeborste.

2det Par Folere (Fig. 6), der er fæstede til Siderne og noget nedenfor 1ste Par, er betydelig større og kraftigere byggede, skjøndt neppe mere end halft saa lange som Forkroppen. De bestaar af et 5-leddet, paa Midten knæformigt boiet Skaft og en mangeleddet Svobe. Af Skaftets Led er det 1ste meget lidet, de øvrige derimod mere eller mindre pladeformigt udvidede og tæt børstebesatte i den ydre Kant. Navnlig udmærker 2det Led sig ved sin betydelige Brede og ved den stærke, afrundet tungeformige Udvidning, som dets ydre Kant danner. Svoben er omtrent saa lang som de 3 sidste Led af Skaftet tilsammen og bestaar af 7—8 med korte Børster besatte Led. Hos *Gl. Sabini* er Svoben betydelig kortere.

Munddelene viser idethele i sin Bygning stor Overensstemmelse med samme hos foregaaende Familie, saaledes som disse er ovenfor fremstillede hos *Arcturus baffini*, og det bliver derfor kun nødvendigt her i Korthed at fremhæve de Forskjelligheder, de viser fra samme.

Overlæben (Fig. 7) er meget massiv og viser over Midten en med lange stive Børster besat Tværliste.

posterior margin both of this segment and of those succeeding it, is slightly raised and very considerably incrassated.

The remaining 6 segments belonging to the anterior division are all well-nigh uniform in appearance and size, as also provided with distinctly defined, triangular, and posteriorly directed epimera, increasing backward successively in size.

The posterior division of the body is about of the same length as the anterior, and consists of 4 distinctly defined segments, the 3 foremost exceedingly small, and furnished with short, pointed epimera. The terminal segment, on the other hand, is remarkably large and broad, its foremost part but very little, if at all, narrower than the anterior division of the body, and above, very considerably arcuate. Its lateral edges are uniformly arched, without exhibiting any such abrupt instriction in the middle as that occurring in *Gl. Sabini*. The extremity is, as in that species, produced to a sharp point, but somewhat shorter, and well-nigh horizontal, not curving upwards.

Of eyes, not the slightest trace can be detected.

The 1st pair of antennæ (fig. 3), orginating, close together, on the anterior margin of the head, somewhat exceed in length half the breadth of the latter, and consist of a three-jointed peduncle and a cylindric, non-articulate flagellum. The 1st joint of the peduncle is short, but broad, almost lamelliform, the 2 remaining joints being more cylindrical. The flagellum is somewhat shorter than the peduncle, and almost everywhere uniform in breadth. Along one of its edges, are seen several fascicles of exceedingly small, translucent sensory appendices (olfactory papillæ) (see fig. 5), and to the obtusely terminating point is attached (see fig. 4), exclusive of 3 such appendices, a comparatively long simple bristle and a very small, penicillate auditory bristle.

The 2nd pair of antennæ (fig. 6), attached to the sides of, and a little beneath, the 1st pair, are considerably larger, and more powerful in structure, though scarcely more than half as long as the anterior division of the body. They consist of a five-jointed, in the middle knee-shaped peduncle, and a multi-articulate flagellum. Of the joints of the peduncle, the 1st is very small, the rest, on the other hand, being more or less lamelliform-dilated, and densely setous at the outer edge. The 2nd joint is more particularly characterized by its considerable breadth, and by the strong, round, linguiform dilatation formed by its outer margin. The flagellum its about as long as the 3 last joints of the peduncle taken together, and consists of from 7 to 8 joints, beset with short bristles. In *Gl. Sabini*, the flagellum is considerably shorter.

The oral appendages exhibit in their structure on the whole very close agreement with those in the preceding family, as described above when treating of *Arcturus baffini*; and hence I need merely give a brief specification of the differences found to exist between them.

The labrum (fig. 7) is very massive, and has, above the middle part, a transverse fillet, furnished with long, stiff bristles.

Underkæben (Fig. 8) har Endeloberne fint cilierede saavel i den ydre som indre Kant.

Kindbakkerne (Fig. 9) er meget kraftigt byggede og har de fra den forreste Del af Endepartiet udgaaende tandede Fortsatser forholdsvis stærkere udviklede end hos Arcturus samt af en mørk brunsort Farve. De imellem disse og Tyggeknuden fæstede secundære Plader er ligeledes noget forskjelligt formede, som vil sees ved en Sammenligning af de respective Figurer.

De 2 Par Kjæver (Fig. 10 og 11) er næsten noiagtigt af samme Udseende som hos Arcturus.

Kjævefødderne (Fig. 12) har Palpens Led forholdsvis bredere og mere pladedannede. Epignathen er af en lignende Form som hos Arcturus, men har hele den ydre Kant fint cilieret. Basalpladen er noget mindre og smalere samt uden Børster.

Af Fødderne er de 3 forreste Par ægte Griberedskaber og derfor i Regelen (se Fig. 2) slaaede ind under Forkroppen, saa at de, naar Dyret sees ovenfra (Fig. 1), ialmindelighed er ganske skjulte. De er alle af fuldkommen ens Udseende og særdeles kraftigt byggede. Af Leddene er (se Fig. 13 og 14) 3die og 4de meget korte og af temmelig uregelmæssig Form samt forbundne med hinanden paa en eiendommelig Maade, idet hint ligesom omfatter dette. 5te Led er stort og bredt, af oval Form og danner i Forbindelse med den kraftige Endeklo (Dactylus) en Slags Gribehaand.

De 4 bagerste Fodpar er ægte Gangfødder og rager derfor under Dyrets Bevægelser mere ud til Siderne (se Fig. 1 og 2). De tiltager successivt i Længde bagtil og bestaar (se Fig. 15 og 16) ligesom de forreste Par af 5 Led foruden Endekloen; men alle Led er her simple og det sidste ikke udviklet til nogen Gribehaand. Alle disse Fodpar er temmelig rigeligt børstebesatte i Kanterne.

Brystposen var hos et Par af de indsamlede Exemplarer fuldt udviklet og indeholdt talrige grønagtigt farvede Æg. Den sammensættes som hos de øvrige til denne Familie hørende Former af 4 Par brede og gjennemsigtige Plader, der udspringer fra Basis af 2det—5te Fodpar.

Bagkropslemmerne er (se Fig. 2) som hos foregaaende Familie nedad dækkede af et Par voluminøse klapformige Organer, der forestiller de modificerede Halevedhæng. Fjernes disse, bemærkes (se Fig. 17) 5 vel udviklede Buglemmer, der mere eller mindre fuldstændigt dækker hinanden indbyrdes.

De 2 første Par (Fig. 19 og 20) er ligesom hos Arcturus udviklede til Svømmeredskaber, men skiller sig ved betydelig kortere Roddel og bredere, ovale Endeplader, hvoraf den indre er kjendelig større end den ydre. Begge Plader er i Kanterne forsynede med talrige cilierede Børster, men som er forholdsvis betydelig kortere end hos Arcturus.

The labium (fig. 8) has the terminal lobes finely ciliated, both along the outer and the inner edge.

The mandibles (fig. 9) are very powerful in structure, and the dentate projections jutting forth from the anterior part of the terminal region, relatively stronger than in Arcturus, as also of a dark brownish-black colour. The secondary plates, too, attached between the said projections and the molar protuberance, have likewise a somewhat deviating form, as will appear on comparing the respective figures.

The 2 pairs of maxillæ (figs. 10, 11) have almost exactly the same appearance as in Arcturus.

The maxillipeds (fig. 12) have the joints of the palp comparatively broader and more lamelliform. The epignath exhibits a similar form to that in Arcturus, but has the whole of the outer margin finely ciliated. The basal plate is somewhat smaller and narrower, as also without bristles.

Of the legs, the 3 anterior pairs are true organs of prey, and hence, as a rule (see fig. 2), bent in under the body, so that, when the animal is viewed from above (fig. 1), they are generally quite concealed. They all present a perfectly uniform appearance, and are exceedingly powerful in structure. Of the joints (see figs. 13, 14), the 3rd and 4th are very short and somewhat irregular in form, as also connected together in a peculiar manner, the former encompassing, as it were, the latter. The 5th joint is large and broad, oval in form, and constitutes, in conjunction with the terminal claw (dactylus), a kind of prehensile hand.

The 4 posterior pairs of legs are true pereiopoda, and hence, during the movements of the animal, project somewhat farther out toward the sides (see figs. 1, 2). They increase successively in length posteriorly, and consist (see figs. 15, 16), as is the case with the anterior pairs, of 5 joints, exclusive of the terminal claw; but all these joints are simple, nor is the last developed to a prehensile hand. These pairs of legs are all of them rather abundantly furnished with bristles along the edges.

The marsupium, in one or two of the specimens taken, was fully developed, containing numerous greenish coloured eggs. It is composed, as in the other forms belonging to this family, of 4 pairs of broad and translucent plates, springing from the base of the 2nd up to the 5th pair of legs.

The abdominal limbs (see fig. 2) are, as in the preceding family, covered below by a pair of voluminous valvular organs, representing the modified caudal appendages. On removing these organs, are observed (see fig. 17) 5 pairs of well developed ventral appendages, the one covering more or less completely the other.

The 2 first pairs (figs. 19, 20) are, as in Arcturus, developed to natatory organs, but differ in the basal part being considerably shorter, as also in their having broader ovate terminal plates, of which the inner is appreciably larger than the outer. Both plates are furnished along the edges with numerous ciliated bristles, which, however, are relatively much shorter than in Arcturus.

De 3 folgende Par (Fig. 21) forestiller ægte Respirationsorganer og har derfor Endepladerne stærkt udviklede, elliptiske og af membranøs Struktur, uden tydelige Randbørster. Begge Plader er omtrent af ens Storrelse; men den ydre er ved en tydelig Tværsutur delt i 2 Segmenter, et kortere basalt og et længere terminalt, næsten af lancetdannet Form.

De klapformige Halevedhæng (se Fig. 2 og 17) er af en lignende Bygning som hos Arcturus og ligeledes ved Enden forsynede med 2 tilspidsede Grene eller Plader, hvoraf dog den ene er særdeles liden og fuldstændig dækket af den anden (se Fig. 23).

Hannerne skiller sig kun lidet i sit Ydre fra Hunnerne.

I Folernes Bygning er heller ikke nogen væsentlig Forskjel at bemærke.

De ydre Kjønsvedhæng udgaar (se Fig. 17) som hos Arcturus fra Ventralsiden af 1ste Bagkropssegment imellem Roden af de tilsvarende Buglemmer. De danner (Fig. 18) 2 korte, koniske, noget indboiede og i Midten sammenstodende Fortsatser, paa hvis stumpt tilrundede Ende Aabningen for vas deferens er beliggende.

Af Bagkroppens Buglemmer er 2det Par (Fig. 21) eiendommeligt modificeret, idet der til Basis af den indre Plade er fæstet et særdeles langt og smalt, stiletformigt Vedhæng, der næsten rækker til Spidsen af Endesegmentet og i normal Tilstand ligger tæt op mod det tilsvarende paa den anden Side (se Fig. 17).

Legemets Farve er hos begge Kjøn ensformig skidden graalig, omtrent som det Mudder, hvori Dyret færdes. Af nogen tydelige Pigmentafleiringer var intetsomhelst Spor at bemærke paa de nylig indfangede Exemplarer.

Længden af de storste Exemplarer gaar op til 50^{mm}, og den staar saaledes neppe tilbage for *Gl. Sabini* i Storrelse.

Forekomst og **Udbredning.** Exemplarer af denne Art er tagne paa 5 forskjellige Stationer, alle tilhorende den kolde Area. Dybden fra 1081 til 1710 Favne.

Dens for Tiden bekjente Udbredningsfelt er herefter den dybe Havdal mellem Norge, Beeren Eiland og Spitsbergen paa den ene Side, og Island, Jan Mayen og Gronland paa den anden, fra den 63de til den 78de Bredegrad. I den ostlige Del af Ishavet synes den derimod ikke at forekomme. Her representeres den af den nærstaaende *Gl. Sabini*, som efter Stuxberg her er overordentlig talrig og som ogsaa under vor Expedition blev taget i et enkelt Exemplar i Havet mellem Beeren Eiland og Novaja Semlja.

The 3 succeeding pairs (fig. 21) represent true respiratory organs, and have, therefore, the terminal plates very fully developed, of an elliptic form and membranous structure, without ay distinctly obvious marginal bristles. Both plates are well-nigh uniform in size; but the outer is divided by a distinct transverse suture into 2 segments, a shorter basal segment and a longer terminal one, the latter almost lanceolate in form.

The valvular caudal appendages (see figs. 2, 17) exhibit a similar structure to those in Arcturus, and are, in like manner, furnished at the extremity with 2 pointed branches or plates, of which, however, one is exceedingly small and completely overlapped by the other (see fig. 23).

The *males* differ but little in their outer habitus from the females.

In the structure of the antennæ, too, no essential difference can be detected.

The outer sexual appendices proceed (see fig. 17), as in Arcturus, from the ventral side of the 1st abdominal segment, between the bases of the corresponding pleopoda. They constitute (fig. 18) 2 short, conical, somewhat incurving and, in the middle, contiguous projections, on the obtusely rounded extremities of which is located the opening for the vas deferens.

Of the abdominal limbs, the 2nd pair (fig. 21) has a peculiarly modified form, to the base of the inner plate being attached an exceedingly long and slender, styliform appendix, reaching almost to the extremity of the terminal segment, and generally lying close up to the corresponding appendix on the opposite side (see fig. 17).

Colour of the body in both sexes a uniform dirty grey, very nearly the same as that of the mud through which the animal moves. Of any distinct deposits of pigment, no trace whatever could be detected in the recent specimens.

Length of the largest examples reaching 50^{mm}; and hence, in point of size, it about ranks with *Gl. Sabini*.

Occurrence and Distribution. — Specimens of this species were taken at 5 different Stations, all in the cold area; depth ranging from 1081 to 1710 fathoms.

The extent of its distribution, as known at present, comprises accordingly the deep ocean tract between Norway, Beeren Eiland, and Spitzbergen on the one side, and Iceland, Jan Mayen and Greenland on the other, from the 63rd to the 78th parallel of latitude. In the eastern part of the Polar Sea, it would not, on the other hand, appear to occur. Throughout this region the species is represented by the approximating form *Gl. Sabini*, which, according to Stuxberg, is remarkably abundant here, and which, on the Norwegian Expedition too, was met with, a single specimen having been taken in the sea extending between Beeren Eiland and Novaja Zemlja.

Gen. 2. **Synidotea.** Harger. 1878.

Amer. Journal of Science III, Vol. XV.

Slægtscharacteristik. Legemet af mere eller mindre undersætsig Form, uden skarp Begrændsning mellem For- og Bagkrop. Epimererne afrundede, ikke begrændsede fra Segmenterne. Hovedet uden laterale Udvidninger. Bagkroppen kun bestaaende af 2 oventil ufuldstændigt adskilte Segmenter. Øinene tydelige, laterale. 2det Par Folere med Skaftets Led simpelt cylindriske, Svoben traadformig, mangeleddet. Kjævefoddernes Palpe kun bestaaende af 3 Led. 1ste Fodpar prehensilt, de ovrige simple Gangfødder. De valvelformige Halevedhæng forholdsvis smaa, med en enkelt Endeplade.

Bemærkninger. Denne Slægt er først opstillet af Harger og bør utvivlsomt opretholdes. Characteristik er den compacte Kropsform, de oventil ikke fra Segmenterne begrændsede afrundede Epimerer og Bagkroppens stærke Consolidation. Foruden den nedenfor nærmere omtalte Form hører herhen den af Kröyer beskrevne *Idotea nodulosa*, som ogsaa erholdtes under vor Expedition. Begge disse Arter er udpræget arktiske i sin Forekomst og slutter sig naturligt sammen til en distinct Slægtstype.

Gen. 2. **Synidotea.** Harger. 1878.

Amer. Journal of Science III, Vol. XV.

Generic Character. — Body more or less thickset in form, without any sharply defined instriction between the anterior and posterior divisions. Epimera rounded off, not defined from segments. Head without lateral dilatations. Posterior division of body consisting of only 2 segments, imperfectly separated above. Eyes distinct, lateral. Second pair of antennæ with joints of peduncle simple, cylindric; flagellum filiform, multi-articulate. Palp of maxillipeds composed of only 3 joints. First pair of legs prehensile, the rest simple pereiopoda. Valvular caudal appendages comparatively small, with but a single terminal plate.

Remarks. — This genus was first instituted by Harger, and should unquestionably be maintained. Conspicuous, as characteristic features, are the compact form of body, the rounded epimera, not separated above from the segments, and the remarkably consolidated structure of the posterior division of the body. Exclusive of the form treated of more in detail below, to this genus also belongs *Idotea nodulosa*, described by Kröyer, likewise taken on the Norwegian Expedition. Both of these species are prominently Arctic in occurrence, and naturally approximate as a distinct generic type.

25. Synidotea bicuspida, (Owen).

(Pl. X, Fig. 24—26).

Idotea bicuspida, Owen, Crustacea of the "Blossom" pg. 92, Pl. XXVII, Fig. 6 (in fide Harger).

Synidotea bicuspida, Harger, Report on the marine Isopoda of New England p. 352.

Synidotea incisa, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 8.

Artscharacteristik. Legemet af kort og undersætsig Form, aflangt ovalt, neppe dobbelt saa langt som bredt, med hoit hvælvet Ryg og concentrisk rynket Overflade. Hovedet bredt, med i Midten indskaaret Panderand og vinklede Sidehjørner. Forkropssegmenternes Sidedele eller Epimerer bredt afrundede og horizontalt udstaaende. Bagkroppen kort, triangulær, i Spidsen forsynet med et tydeligt Indsnit begrændset af 2 tilspidsede Fremspring. Øinene store og fremstaaende med mørkt Pigment. 2det Par Folere af Legemets halve Længde, med Svoben længere end Skaftet og sammensat af omtrent 14 Led. Farven mørkt chocoladebrun med rødbrune Shatteringer. Længden 14^{mm}.

25. Synidotea bicuspida, (Owen).

(Pl. X, figs. 24—26).

Idotea bicuspida, Owen, Crustacea of the "Blossom" p. 92, Pl. XXVII, fig. 6, (in fide Harger).

Synidotea bicuspida, Harger, Report on the marine Isopoda of New England, p. 352.

Synidotea incisa, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 8.

Specific Character. — Body short and thickset in form, oblongo-oval, scarcely twice as long as broad, with an exceedingly vaulted back and the surface concentrically corrugated. Head broad, with frontal margin incised in the middle and lateral corners angular. Lateral parts, or epimera, broadly rounded and horizontally projecting. Posterior division of body short, triangular, and having at the point a distinct incision, bounded by 2 acute projections. Eyes large and protruding, with a dark pigment. Second pair of antennæ half the length of body, with flagellum longer than peduncle, and composed of about 14 joints. Colour a dark chocolate-brown, with reddishbrown shadings. Length 14^{mm}.

Findested. Stat. 366.

Bemærkninger. Nærværende characteristiske Art, som jeg i Begyndelsen holdt for ny, da jeg ikke havde Anledning til at raadføre mig med Owens Arbeide, men som jeg senere har overbevist mig om er identisk med den af ham beskrevne Form, kjendes let fra den anden Art af Slægten, *S. nodulosa* Kröyer, ved sin mere undersætsige Kropsform og navnlig ved den characteristiske Udrandning i Spidsen af Endesegmentet, hvorved dette synes at gaa ud i 2 tilspidsede Fortsatser (heraf Artsbenævnelsen).

Beskrivelse af Hunnen. Legemet er (se Pl. X, Fig. 24) usædvanlig kort og undersætsigt og minder derfor noget om samme hos visse Land-Isopoder. Af Form er det aflangt ovalt, uden nogen skarpt markeret Indsnøring mellem For- og Bagkrop, med den største Brede, der falder noget foran Midten, lidt større end den halve Længde. Rygsiden er i Midten stærkt hvælvet og noget ujevn, idet saavel de forreste som bagerste Kanter af Segmenterne er stærkt fortykkede og hævede, ligesom en mere eller mindre tydelig concentrisk Rynkning bemærkes, navnlig henimod Siderne.

Integumenterne er særdeles haarde og faste samt viser en noget mat, ikke glindsende Overflade.

Hovedet er omtrent dobbelt saa bredt som langt og viser over den bagerste Del en tydelig Tværfold, der ligesom antyder et særskilt Segment, svarende til Kjævefødderne. Panderanden er i Midten tydeligt indbugtet, og Sidehjørnerne træder frem i Form af et næsten trekantet, vinklet, i Enden lige afskaaret Fremspring til hver Side af 2det Par Foleres Basis (se Fig. 25).

Forkropssegmenterne er alle forsynede med jevnt afrundede og horizontalt til Siderne udstaaende Epimerer, der imidlertid ikke ved nogen bemærkelig Sutur er afgrændsede fra det tilstødende Parti. De 3 bagerste Segmenter er noget mindre end de øvrige og har Epimererne smalere.

Bagkroppen er forholdsvis meget kort, af triangulær Form, og bestaar kun af 2 Segmenter, et ganske kort basalt og et betydeligt større terminalt. Disse Segmenter er dog kun til Siderne tydeligt adskilte, medens de i Midtlinien flyder sammen. Rygfladen af begge er ganske glat og Spidsen af Endesegmentet forsynet med et tydeligt Indsnit eller Udrandning, der begrændses til hver Side af et kort triangulært Fremspring.

Øinene der er beliggende paa Siderne af Hovedet, er temmelig store og næsten halvkugleformigt fremspringende, med mørktfarvet Pigment.

1ste Par Folere (se Fig. 24 og 25) er forholdsvis smaa, forøvrigt af den for Familien sædvanlige Bygning.

Locality. — Stat. 366.

Remarks. — The present characteristic species, which at first I regarded as new, having not had opportunity to consult Professor Owen's work, but which I have subsequently found to be identical with the form he has described, is easily distinguished from the other species of the genus, *S. nodulosa* Kröyer, by its relatively more thickset form of body, and in particular by the characteristic emargination at the point of the terminal segment, giving to the latter the appearance of jutting forth as 2 acute projections (hence the specific designation).

Description of the Female. — The body (see Pl. X, fig. 24) unusually stout and thickset, and accordingly not unlike that in certain land Isopods. The form is oblongo-oval, without any sharply defined instriction between the anterior and posterior divisions of the body, the greatest breadth — which occurs a little anterior to the middle — slightly exceeding one-half of the length. The dorsal side exceedingly arched in the middle and somewhat uneven, both the anterior and posterior edges of the segments being very considerably inspissated and raised; and a more or less distinct concentric corrugation is also observed, in particular toward the sides.

The integuments are extremely hard and compact, exhibiting a somewhat dull, by no means a lustrous surface.

The head is about twice as broad as long, and has, above the posterior part, a distinct transverse fold, that indicates, as it were, a separate segment, corresponding to the maxillipeds. The frontal margin is distinctly incurved in the middle, the lateral corners jutting forth on either side of the base of the 2nd pair of antennæ (see fig. 25) in the form of a well-nigh triangular projection, abruptly truncate at the extremity.

The segments of the anterior division are all furnished with uniformly rounded and, toward the sides, horizontally projecting epimera, which, however, exhibit no distinct suture separating them from the lateral parts. The 3 posterior segments are somewhat smaller than the others, and have more narrow epimera.

The posterior division of the body is comparatively very short, triangular in form, and consists of only 2 segments, an exceedingly short basal and a much larger terminal segment. These segments, however, are at the sides only, distinctly separated, being confluent along the medial line. The dorsal surface of both is quite smooth, and the point of the terminal segment has a distinct incision or emargination, bounded on either side by a short triangular projection.

The eyes, placed at the sides of the head, are rather large and well-nigh hemispherically protruding, with a dark-coloured pigment.

The 1st pair of antennæ (see figs. 24, 25) are comparatively small, exhibiting for the rest the structure characteristic of the family.

2det Par Folere (ibid.) er temmelig stærkt forkrøngede, omtrent af Legemets halve Længde, og har Skaftets Led simpelt cylindriske. Svøben er længere end Skaftet og sammensat af omtrent 14 korte Led.

Munddelene kunde ikke paa det eneste forliggende Exemplar nøiere undersøges.

Af Fødderne er alene 1ste Par (se Fig. 25) udviklet til Griberedskaber af en lignende Bygning som de 3 forreste Par hos Glyptonotus. Derimod er alle de øvrige Par ægte Gangfødder, med sidste Led simpelt cylindriskt og Endekloen ganske kort samt forsynet med en secundær Torn.

De klapformige Halevedhæng (se Fig. 26) er forholdsvis mindre udviklede end hos foregaaende Slægt og dækker paa langt nær ikke hele Undersiden af Bagkroppen. De viser over Midten en skraat løbende eller diagonal Kjøl og har ved Spidsen en enkelt, temmelig stor triangulær Endeplade.

Farven var hos det levende Dyr temmelig mørk, næsten chocoladefarvet, med enkelte uregelmæssige rødbrune Skatteringer. Det undersøgte Individ havde desuden over Midten af 2det Par Foleres Svøbe et meget iøinefaldende smukt carminrødt Tværbaand. Hvorvidt dette Tværbaand er characteristisk for Arten eller blot en individuel Eiendommelighed, maa overlades til fremtidige Undersøgelser at afgjøre.

Længden af det undersøgte Exemplar var 14^{mm}.

Forekomst og Udbredning. Det eneste erholdte Exemplar, der var en fuldt udviklet Hun, optoges under Expeditionens sidste Togt i Magdalenebay, en af iskoldt Vand opfyldt Fjord paa Nordvestsiden af Spitsbergen, fra et Dyb af 40—60 Favne.

Arten har en temmelig vid Udbredning i de arktiske Have og synes at være circumpolar. Foruden ved Spitsbergen er den observeret ved Nordamerikas Østkyst (New England), Polarøerne, Alaschka og Behringsstrædet. Ifølge Stuxberg forekommer den ogsaa ikke ualmindeligt i det nordsibiriske Hav sammen med *Glyptonotus Sabini* og *entomon*.

The 2nd pair of antennæ (ibid) are considerably elongate, about half as long as the head, and have the joints of the peduncle simple cylindric. The flagellum is longer than the peduncle, and composed of about 14 short joints.

The oral appendages could not be submitted to a closer examination in the solitary specimen secured.

Of the legs, the 1st pair alone (see fig. 25) are developed as prehensile organs, of a similar structure to that exhibited by the 3 foremost pairs in Glyptonotus. On the other hand, all the rest are true pereiopoda, having the last joint simple cylindric and the terminal claw exceedingly short, as also furnished with a secondary spine.

The valvular caudal appendages (see fig. 26) are comparatively less developed than in the preceding genus, not covering by far the entire under-surface of the posterior division of the body. Across the middle, they exhibit an obliquely extending, or diagonal, carina, and have at the point a single, rather large, triangular terminal plate.

The colour in the living animal was rather dark, closely approximating that of chocolate, with a few irregular reddish-brown shadings. The specimen examined had, moreover, across the middle of the flagellum of the 2nd pair of antennæ an exceedingly conspicuous transverse band, of a brilliant carmine. Whether this transverse band be characteristic of the species or a mere individual peculiarity, must be left for subsequent investigation to decide.

Length of the specimen examined 14^{mm}.

Occurrence and Distribution. — The solitary specimen obtained, a fully developed female — was brought up on the last cruise of the Expedition, from a depth of 40—60 fathoms, in Magdalena Bay, a fjord, filled with ice-cold water, on the north-west coast of Spitzbergen.

The species has a rather extensive distribution throughout the Arctic Seas, and would appear to be circumpolar. Exclusive of Spitzbergen, it has been met with on the east coast of North America (New England), off the Polar Islands, Alaschka, and in Behring's Straits. According to Stuxberg, it occurs, too, and not infrequently, in the North Siberian Sea, along with *Glyptonotus Sabini*, and *G. entomon*.

Tribus 4. *Asellota*, Edw.

Bemærkninger. Hos de herhen hørende Former, der maa betragtes som de mest typiske Isopoder, er Halevedhængene terminale som hos 1ste Tribus *(chelifera)* og enten tvegrenede eller simple, men aldrig modificerede hverken til en Halevifte eller til Klapper. Heller ikke er nogen af Bagkropslemmerne saaledes som hos de foregaaende Grupper uddannede til Svømmeredskaber, hvorimod det

Tribus 4. *Asellota*, Edw.

Remarks. — The forms belonging to this division of the Crustacea, that unquestionably must be regarded as the most typical of Isopods, have the caudal appendages terminal, as in the 1st tribe *(chelifera)*, and either bifurcate or simple, but never modified, either to form a caudal flabellum or valvular organs. Nor do any of the abdominal limbs, as in the preceding groups, occur in the form of

1ste Par i Regelen (herfra alene undtaget Slægten Asellus) hos Hunnen er omformet til en enkelt, operkelformig Plade, der dækker de øvrige 4 Par, som alle forestiller ægte Respirationsorganer; hos Hannen er denne Plade af meget compliceret Bygning og delvis modificeret til Copulationsredskaber. Den her omhandlede Tribus indbefatter for Tiden 2 Familier, nemlig *Asellidæ* og *Munnopsidæ*.

Fam. 1. Asellidæ.

Gen. 1. **Acanthoniscus**, G. O. Sars. 1878, n.

Crustacea et Pycnogonida nova etc.

Slægtscharacteristik. Legemet fladt og bredt med alle Segmenter løst forbundne med hinanden og gaaende ud i laterale fligformige Fortsatser. Bagkroppen bestaaende af et enkelt i Kanterne saugtakket, skjoldformigt Segment. Ingen Øine. Folerne af en lignende Bygning som hos Slægten Janira. 1ste Fodpar ikke forskjelligt fra de øvrige, alle ægte Gangfødder. Halevedhængene med forlænget cylindrisk Stamme og 2 korte Endegrene.

Bemærkninger. Nærværende Slægt slutter sig meget nær til Slægten *Janira* Leach, fra hvilken den dog skiller sig ved den fuldstændige Mangel af Øine samt derved, at samtlige Fødder er af ens Udseende og ægte Gangfødder, uden at 1ste Par, saaledes som hos hin Slægt, er udviklet til Griberedskaber. Slægten indeholder for Tiden kun den nedenfor nærmere beskrevne Art.

26. **Acanthoniscus typhlops**, G. O. Sars, n. sp.

(Pl. X. Fig. 27—30).

Acanthoniscus typhlops, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 9.

Artscharacteristik. Legemet af oval Form, med Breden større end den halve Længde og Segmenterne skarpt adskilte. Hovedet forsynet med et i Enden tvedelt Pandehorn og 2 laterale fligformige Fortsatser til hver Side. Alle Forkropssegmenter i Midtlinien bevæbnede med en opadrettet dorsal Torn. Epimererne paa 1ste Segment simpelt tilspidsede, paa de 3 følgende tvefligede, paa de 3 bageste 3-fligede. Bagkropssegmentet halvcirkelformigt, med

natatory appendages, whereas the 1st pair, as a rule (saving only the genus Asellus), in the female, are transformed into a single operculiform plate, covering the 4 remaining pairs, all of which represent true organs of respiration; in the male, this plate exhibits an exceedingly complex structure, and is modified in part to organs of copulation. The tribe treated of here comprises at present 2 families, viz. the *Asellidæ* and the *Munnopsidæ*.

Fam. 1. Asellidæ.

Gen. 1. **Acanthoniscus**, G. O. Sars. 1878, n.

Crustacea et Pycnogonida nova etc.

Generic Character. — Body flat and broad, with all the segments loosely connected together, and laterally jutting out as lobular projections. Posterior division of body consisting of a single scutiform segment. No eyes. Antennæ similar in structure to those in the genus Janira. First pair of legs differing in no wise from the others — all true pereiopoda. Caudal appendages furnished with an elongate cylindric trunk, having 2 short terminal branches.

Remarks. — The present genus approximates very closely the genus *Janira* Leach, from which it nevertheless differs in the absolute want of eyes, and in the legs being all of uniform appearance and true pereiopoda, not with the 1st pair, as in that genus, developed into organs of prey. The genus counts at present but one species, that described below.

26. **Acanthoniscus typhlops**, G. O. Sars, n. sp.

(Pl. X, figs. 27—30).

Acanthoniscus typhlops, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 9.

Specific Character. — Body oval in form, with breadth exceeding one-half of length, and segments sharply defined. Head furnished with a rostrum, bipartite at extremity, and 2 lateral projections on either side. All the segments armed on the medial line with a dorsal spine, directed upwards. Epimera on 1st segment simple pointed, on the 3 succeeding segments two-lobed, on the 3 posterior three-lobed. Abdominal segment semicircular

8 stærke Saugtakker paa hver Side. 2det Par Fødere med de 2 basale Led gaaende ud i en stærk udadrettet Torn. Halevedhængene omtrent halft saa lange som Bagkropssegmentet, med Stammen i Enden paa den indre Side gaaende ud i et tandformigt Fremspring. Grenene meget smaa og af ulige Længde, den ydre mindst. Farven hvidagtig. Længden 12^{mm}.

Findested. Stat. 164.

Bemærkninger. Da Slægten for Tiden kun er repræsenteret af den her omhandlede Art, bliver det selvfølgelig vanskeligt med Bestemthed at angive de Characterer, der skal tillægges specifisk Værdi. Hos Slægten Janira, som kommer denne Slægt nærmest, synes imidlertid Hovedets og Bagkroppens Form samt Forholdet af Epimerernes Bevæbning at være af størst Betydning i denne Henseende, og jeg har derfor ogsaa troet her at maatte opføre disse Characterer som Artskjendemærker for nærværende Form.

Beskrivelse af Hunnen. Legemet er (se Pl. X, Fig. 27) stærkt fladtrykt, af temmelig regelmæssig oval Form, med den største Brede kjendeligt større end den halve Længde. Segmenterne er som hos Slægten Janira skarpt begrændsede og temmelig løst forbundne med hinanden, samt adskilte ved dybe laterale Indsnøringer.

Integumenterne er faste, men gjennemsigtige og uden nogen tydelig udpræget Skulptur.

Hovedet er forholdsvis stort og bredt, næsten af pentagonal Form og oventil i Midten noget hvælvet. Fortil gaar det ud i et noget fladtrykt, i Enden med 2 korte, udadbøiede Spidser forsynet Pandehorn, og har til hver Side 2 tilspidsede børstebesatte Fliger.

Forkropssegmenterne tiltager bagtil noget i Brede og er alle i Midten af den dorsale Flade forsynede med en opadrettet Torn. Epimererne er stærkt udstaaende til Siderne og noget forskjelligt formede paa de forskjellige Segmenter. Paa 1ste Segment er de simpelt tilspidsede; paa de 3 følgende er de derimod tvedelte eller udgaaende i 2 omtrent ligestore tilspidsede fligformige Fortsatser. Paa de 3 bagerste Segmenter endelig er Epimererne 3-fligede, med den midterste Flig længst. Kanterne af disse Fliger er paa alle Segmenter tæt haarbevoxede.

Bagkroppen bestaar kun af et enkelt bredt, næsten halvcirkelformigt Segment, omtrent af Forkroppens halve Længde. Dets Overflade er ganske glat og noget hvælvet, hvorimod Kanterne er delte paa hver Side i 8 tilspidsede og haarbesatte Smaafliger eller grove Saugtakker, alle af ens Udseende. Selve Enden er stumpt tilspidset og kun lidet fremspringende.

Øine mangler fuldstændigt, idet hverken Pigment eller nogensomhelst andre Synselementer var at opdage hos de friskt indfangede Exemplarer.

in form, with 8 strong, serrate teeth on either side. Second pair of antennæ with the 2 basal joints jutting forth as a strong, outward-directed spine. Caudal appendages about half as long as abdominal segment, with trunk jutting out at extremity, on the inner side, as a dentiform projection; branches very small and unequal in length, the outer smallest. Colour whitish. Length 12^{mm}.

Locality. — Stat. 164.

Remarks. — The genus being at present exclusively represented by the species treated of here, it is, of course, difficult to determine with certainty what characters should be assigned specific weight. Meanwhile, as, in the genus Janira — which approximates this genus closest — the form of the head and the abdominal segment, as also the armature of the epimera, would appear to have greatest significance in this respect, I have seen fit to record those characters as specific peculiarities distinguishing the present form.

Description of the Female. — The body (see Pl. X, fig. 27) very much depressed, its form a comparatively regular oval, with the greatest breadth perceptibly exceeding one-half of the length. The segments, as in the genus Janira, sharply defined, and rather loosely connected together, being separated by deep lateral instrictions.

The integuments, though compact, are translucent, and have no distinctly prominent sculpturing.

The head is comparatively large and broad, almost pentagonal in form, and above, in the middle, somewhat arcuate. Anteriorly, it projects as a slightly depressed rostrum, furnished at the extremity with 2 short, outward-bent points, and has on either side 2 acute, setiferous lobules.

The free segments increase somewhat in breadth posteriorly, and in the middle of the dorsal surface are all furnished with an upward-pointing spine. The epimera project prominently toward the sides, deviating slightly in form on the different segments. On the 1st segment they are single acute, whereas on the 3 succeeding segments they are bipartite, or jut out as 2 acute lobular projections, about equal in size. Finally, on the 3 posterior segments the epimera are three-lobed, the medial lobe longest. The edges of these lobes are thickly clothed with hair on all the segments.

The posterior division of the body consists of but one broad, almost semicircular segment, about half the length of the anterior division. Its surface is quite smooth and somewhat arched, whereas the edges are cleft on either side into 8 pointed and ciliated lappets, or coarse teeth, all similar in appearance. The extremity itself is obtusely pointed, and projects but very slightly.

No trace whatever of eyes, as neither pigment nor any other visual element could be detected in the recent specimens.

1ste Par Følere skiller sig kun lidet i sin Bygning fra samme hos Slægten *Janira*. Svøben er meget bøielig og sammensat af et stort Antal af korte Led.

2det Par Følere viser den sædvanlige vinkelformige Bøining og er lige udstrakte længere end Halvparten af Legemet. Skaftets 2 første Led gaar paa Ydersiden ud i en stærk, skraat udadrettet tornformig Fortsats. 3die Led er særdeles lidet, hvorimod de to følgende er mere forlængede og af cylindrisk Form. Svøben er omtrent af Skaftets Længde og sammensat af talrige korte Led.

Munddelene kunde ikke nøiere undersøges paa Grund af manglende Materiale.

1ste Par Fødder (Fig. 8), der hos Slægten *Janira* ligesom hos de fleste øvrige til denne Familie hørende Former er stærkere byggede end de øvrige og uddannede til Griberedskaber, er her fuldkommen af samme enkle Form og Udseende som de følgende Par og ligesom disse ægte Gangfødder. Sidste Led er nemlig ikke udvidet, men simpelt cylindriskt, og Endekloen er ganske kort og kan ikke fuldstændig bøies ind mod hint.

Bagkroppen dækkes (se Fig. 29) paa Undersiden i Midten af en enkelt tynd, operkelformig, hvælvet Plade, der forestiller det 1ste Par modificerede Buglemmer. Under denne Plade findes de 4 øvrige Par Buglemmer, der alle er ægte Respirationsorganer, med blode, membranøse Endeplader.

Halevedhængene (Fig. 30) er kun lidet mere end halvt saa lange som Bagkroppen og rettede lige bagud. De bestaar af en stærkt forlænget, cylindrisk og i Kanterne børstebesat Stamme, der ved Enden paa den indre Side løber ud i et kort tandformigt Fremspring, og 2 meget korte koniskt tilspidsede Grene. Den indre Gren er størst og ikke fuldt af Stammens halve Længde; den ydre Gren er særdeles liden, neppe halvt saa lang som den indre. Begge Grene er i Kanterne og ved Spidsen besatte med fine Børster.

Det hele Legeme var i levende Tilstand hvidagtigt, gjennemsigtigt, uden ethvert Spor af Pigmentafleiringer.

Længden af det undersøgte Exemplar var 12^{mm}.

Forekomst og Udbredning. Et enkelt fuldvoxent Exemplar af denne ved sit piggede Udseende characteristiske *Isopode* erholdtes under Expeditionens 2det Togt i Havet Vest af Lofoten (Stat. 164) fra et Dyb af 457 Favne. Sammesteds fandtes ogsaa et Par meget smaa Unger tilhørende samme Art.

Da Stationen tilhører den kolde Area, er det at formode, at dens Udbredningsfelt kun er indskrænket til de arktiske Farvande.

The 1st pair of antennæ differ but very slightly as to structure from those in the genus *Janira*. The flagellum is very flexible, and composed of a large number of short joints.

The 2nd pair of antennæ exhibit the usual angular curvature, and, when fully stretched, exceed half the body in length. The 2 first joints of the peduncle jut forth on the outer side, as a strong, oblique, outward-directed, spiniform projection. The 3rd joint is exceedingly short, whereas the 2 succeeding joints are more elongate, and cylindric in form. The flagellum has about the length of the peduncle, and consists of numerous short joints.

The oral appendages could not be closely examined from want of sufficient material.

The 1st pair of legs (fig. 28), which in the genus *Janira*, as in most other forms belonging to this family, are more powerful in structure than the others, and developed as prehensile organs, have the same simple form and appearance as the succeeding pairs, and are, like those legs, true pereiopoda. The last joint, namely, is not dilated, but simple-cylindric, and the terminal claw, being quite short, does not admit of being fully bent in towards the joint.

The posterior division of the body (see fig. 29) is covered on the under side, in the middle, by a thin, operculiform, arcuate plate, representing the 1st pair of modified ventral limbs. Beneath this plate, occur the 4 remaining pairs of limbs, all of them true respiratory organs, with soft, membranous terminal plates.

The caudal appendages (fig. 30) are but little more than half as long as the posterior division of the body, and directed straight backwards. They consist of an exceedingly elongate, cylindric, and, along the edges, setiferous trunk, jutting out at the extremity as a short, dentiform projection, with 2 exceedingly short, acuminate branches. The inner branch is the larger of the two, measuring not quite half the length of the trunk; the outer is remarkably small, scarcely half as long as the inner. Both branches are beset along the edges and at the point with delicate bristles.

In a living state, the whole body of the animal was whitish, translucent, without a trace of pigment.

Length of the specimen examined 12^{mm}.

Occurrence and Distribution. — A single, full-grown specimen of this *Isopod*, characterized by its spiniferous appearance, was taken on the 2nd cruise of the Expedition, in the open sea, west of Lofoten (Stat. 164), at a depth of 457 fathoms. In the same locality, were also obtained two exceedingly young individuals belonging to the same species.

The Station being in the cold area, the region throughout which this animal is distributed may be held to lie exclusively within the limits of the Arctic Sea.

Gen. 2. **Nannoniscus**, G. O. Sars, 1869.

Nye Dybvandscrustaceer fra Lofoten.

Slægtscharacteristik. Legemet temmelig compakt, af oval Form, med hvælvet Ryg og jevnt buede Sider. Segmenterne fast forbundne med hinanden og kun adskilte ved smale laterale Indsnit. Hovedet meget stort, ikke skarpt afsat fra Kroppen. Bagkroppen bestaaende af et enkelt bagtil noget afsmalnende hvælvet Segment. Ingen Øine. 1ste Par Følere smaa, med rudimentær eller meget kort Svøbe; 2det Par forlængede, med mangeleddet traadformig Svøbe. Kindbakkerne med tydeligt udviklet Palpe. Alle Fødder af ens Udseende, noget tiltagende i Længde bagtil. Bagkroppens Operculum meget lidet, i Midten kjølet. Halevedhængene særdeles korte, tvegrenede eller enkle.

Bemærkninger. Denne af mig i 1869 opstillede Slægt er let kjendelig ved det compacte, regelmæssigt ovale Legeme, paa hvilket hverken Hoved eller Bagkrop afmarkerer sig ved nogen iøinefaldende Indknibning. Med foregaaende Slægt stemmer den overens ved Fødernes ensformige Bygning og den fuldstændige Mangel af Øine, men viser forøvrigt kun liden Affinitet til samme. Slægten indeholder for Tiden 2 distincte Arter, nemlig den af mig ved Lofoten opdagede *N. oblongus* og den nedenfor nærmere beskrevne Art. Begge er ægte Dybvandsformer.

Gen. 2. **Nannoniscus**, G. O. Sars, 1869.

Nye Dybvandscrustaceer fra Lofoten.

Generic Character. — Body rather compact, oval in form, with vaulted back and uniformly arching sides. Segments connected firmly together, and separated only by narrow lateral incisions. Head very large, not sharply defined from succeeding segment. Posterior division of body consisting of a single, posteriorly somewhat tapering, arched segment. No eyes. First pair of antennæ small, with either a rudimentary or a very short flagellum; 2nd pair elongate, with a many-jointed, filiform flagellum. All of the legs uniform in appearance, their length slightly increasing posteriorly. Operculum of abdomen very small, and keeled along the middle. Caudal appendages exceedingly short, bifureate or simple.

Remarks. — The present genus, established by the author of this Memoir in 1869, may be easily recognized by the compact and regular, oval-shaped body, from which neither the head nor the abdomen is marked off by any conspicuous instriction. With the preceding genus it agrees in the uniform structure of the legs and the absolute want of eyes, but in other respects exhibits but slight affinity. The genus comprises at present 2 distinct species, viz. that which I met with off Lofoten, *N. oblongus*, and the species of which a detailed description is given below. Both are true deep-sea forms.

27. Nannoniscus bicuspis, G. O. Sars, n. sp.

(Pl. X, Fig. 31—45).

Nannoniscus bicuspis, G. O. Sars, Prodromus descriptionis Crust. etc., No. 80.

Artscharacteristik ♀. Legemet aflangt ovalt, næsten 3 Gange saa langt som bredt, oventil jevnt hvælvet, med pladeformige afstumpede Epimerer. Hovedet jevnt afrundet og fortil i Midten kun dannende et ubetydeligt knudeformigt Fremspring. Bagkropssegmentet i Enden afkuttet med Sidehjørnerne udtrukne i et kort bagudrettet tandformigt Fremspring. 1ste Par Følere af Hovedets Længde, med tydelig 4-leddet Svøbe og normalt udviklede Sandsevedhæng; 2det Par Følere omtrent dobbelt saa lange, med Skaftets 2det Led dannende paa den ydre Side en stærk udadrettet Torn, Svøben noget kortere end Skaftet og sammensat af 13 Led. Bagkroppens Operculum ubevæbnet. Halevedhængene meget smaa, simple, af konisk Form. Farven hvid. Længden 2.90^{mm}.

27. Nannoniscus bicuspis, G. O. Sars, n. sp.

(Pl. X, figs. 31—45).

Nannoniscus bicuspis, G. O. Sars, Prodromus descriptionis Crust. etc., No. 80.

Specific Character. ♀ — Body oblongo-oval, almost 3 times as long as broad, above uniformly arched, with lamelliform-obtuse epimera. Head uniformly rounded, and, anteriorly, in the middle, merely forming a slight tuberculiform projection. Abdominal segment cut off at the extremity, with the lateral corners drawn out as a short posteriorly directed, dentiform projection. First pair of antennæ equal in length to head, with a distinct four-jointed flagellum and normally developed sensory appendices; 2nd pair of antennæ about twice as long, with 2nd joint of peduncle constituting on the outer side a strong outward-protending spine; flagellum somewhat shorter than peduncle, and composed of 13 joints. Operculum of abdomen without any armature. Caudal appendages very small, simple, and conical in form. Colour white. Length 2.90^{mm}.

Findesteder. Stat. 33. 51. 192. 290.

Bemærkninger. Den her omhandlede Art ligner i sin almindelige Habitus meget den typiske Form, *N. oblongus*, men skiller sig temmelig bestemt ved Hovedets forskjellige Form og ved de 2 characteristiske tandformige Fremspring i Enden af Bagkroppen, hvilken sidste Character har givet Anledning til Artsbenævnelsen. Ogsaa i de anatomiske Detailler viser den enkelte distincte Afvigelser, navnlig hvad 1ste Par Følere angaar.

Beskrivelse af Hunnen. Legemet er, seet ovenfra (Pl. X. Fig. 31) af temmelig regelmæssig aflang oval Form, med den største Brede, der er beliggende paa Midten, kjendeligt mindre end den halve Længde. Hele Rygsiden er jevnt hvælvet og de noget pladeformige Epimerer danner sammen med Hovedets og Bagkropssegmentets Sider en temmelig jevnt buet Linie, der kun er afbrut ved meget smale Indsnit mellem Segmenterne.

Integumenterne er af temmelig fast Consistens og kun lidet gjennemsigtige, samt viser under Mikroskopet en fint granuleret Skulptur.

Hovedet er af forholdsvis betydelig Størrelse og ikke ved nogen mærkbar Indknibning afsat fra Forkroppen. Det er næsten af halvcirkeldannet Form og viser fortil i Midten kun et meget lidet og stumpt knudeformigt Fremspring, hvorimod der hos den anden Art her findes en temmelig stærkt fremstaaende og i Enden tvekloftet Pandeplade.

Af Forkroppens Segmenter er det 1ste og sidste korteste, 4de størst. Alle har Epimererne afstumpede i Enden og nøgne, uden nogen bemærkelig Haarbesætning.

Bagkropssegmentet, der ligesaalidt som Hovedet er skarpt afsat fra Forkroppen, er omtrent af dennes halve Længde, oventil jevnt hvælvet og bagtil jevnt afsmalnende. Enden er ikke som hos den typiske Art afrundet, men afkuttet, med ethvert af Sidehjørnerne udtrukket i et kort bagudrettet tandformigt Fremspring. Midt imellem disse Fremspring danner den bagre Kant af Segmentet en ganske svag Udbugtning, paa hvis Underside Analaabningen er beliggende.

Af Øine findes ligesaalidt som hos den typiske Art det ringeste Spor.

1ste Par Følere (Fig. 32) er af et fra samme hos *N. oblongus* temmelig forskjelligt Udseende. De er her fuldkommen normalt udviklede og omtrent af Hovedets Længde, med tydelig Adskillelse mellem Skaft og Svøbe. Af Skaftets Led er de 2 første størst og ved Enden forsynede med en Del temmelig lange penselformige Horebørster; sidste Led er derimod ganske lidet og tager sig mere ud som tilhørende selve Svøben. Denne er her af sædvanlig Bygning, omtrent saa lang som Skaftets 2 sidste Led tilsammen og bestaaende af 4 tydeligt begrændsede Led,

Locality. — Stats. 33. 51. 192. 290.

Remarks. — The species treated of here presents in its general habitus a marked resemblance to the typical form, *N. oblongus*, but differs very decidedly in the deviating form of the head and the 2 characteristic dentiform projections at the extremity of the abdomen: indeed, from this latter character the specific designation is derived. Moreover, in the various anatomical details, both species exhibit unmistakeable deviations, more particularly as regards the 1st pair of antennæ.

Description of the Female. — The body, viewed from above (Pl. X. fig. 31), has a comparatively regular oblongo-oval form, with its greatest breadth occurring in the middle, perceptibly less than half the length. The whole of the dorsal side is uniformly arched, and the somewhat lamelliform epimera form, along with the sides of the head and the abdominal segment, an almost uniformly arcuate line, disrupted only by very narrow incisions between the segments.

The integuments are rather compact in substance, and but slightly translucent: under the microscope, they exhibit a finely granulous sculpturing.

The head is comparatively large, and not marked off by any noticeable instriction from the succeeding part. It has a well-nigh semicircular form, and exhibits anteriorly, in the middle, merely a very small and obtuse-tuberculiform projection, whereas in the other species occurs here a rather prominently projecting frontal plate, bifurcate at the extremity.

Of the free segments, the first and last are the shortest, the 4th being the largest. All have the epimera obtuse at the extremity, and naked, without any perceptible clothing of hair.

The abdominal segment, like the head, not distinctly marked off from the anterior division, measuring about half the length of the latter, is uniformly arched above and tapers gradually backward. The extremity not, as in the typical species, rounded, but truncate, with each of the lateral corners drawn out as a short, posteriorly directed, dentiform projection. Between these projections, the posterior margin of the segment jutting out very slightly in the middle, and here is observed, on the under surface, the anal orifice.

Of eyes, as in the typical species, no trace whatever.

The 1st pair of antennæ (fig. 32) present a rather different appearance from those in *N. oblongus*. They are in every respect normally developed, and about as long as the head, with the peduncle and the flagellum distinctly defined. Of the joints of the peduncle, the 2 first are largest, and furnished at the extremity with a number of comparatively long auditory bristles; the last joint, on the other hand, is quite small, and has rather the appearance of belonging to the flagellum itself. The latter is of the usual structure, about equalling in length the 2 last joints

hvoraf de 2 yderste foruden de sædvanlige Haarborster er forsynede med nogle faa (3) Sandsevedhæng at den sædvanlige smale, lineære Form. Hos *N. oblongus* repræsenteres derimod hele Svoben af et enkelt enormt udviklet kolbeformigt Sandsevedhæng.

2det Par Følere (Fig. 33) er omtrent dobbelt saa lange som 1ste Par og ialmindelighed vinkelformigt boiede, med Endepartiet bagudrettet. Af Skaftets 5 Led udmærker det 2det sig derved, at det paa den ydre Side gaar ud i et stærkt, udadrettet, tornformigt Fremspring. 1ste og 3die Led er ganske korte, hvorimod de 2 sidste er mere forlængede. Svoben er traadformig, noget kortere end Skaftet og sammensat af 13 med simple Borster besatte Led.

Overlæben (Fig. 34) danner en liden afrundet, ligesom af 2 Segmenter bestaaende Lap, der er bevægeligt forbundet med Epistomet.

Underlæben (Fig. 35) har 2 ganske korte, i sin indre Kant cilierede Endelapper.

Kindbakkerne (Fig. 36) viser den for Familien sædvanlige Bygning. Det forreste tandede Parti har tæt bag Spidsen en Gruppe af stive Borster og er ved et dybt vinkelformigt Indsnit skilt fra Tyggeknuden; denne har Formen af en cylindrisk, næsten under en ret Vinkel fra Corpus udgaaende Fortsats, der i Enden er noget skraat afkuttet og her forsynet med den sædvanlige rillede Skulptur. Palpen er vel udviklet, omtrent af selve Kindbakkens Længde og bestaaende af 3 tydelige Led, hvoraf det midterste er længst. Endeleddet er stærkt krummet og langs sin indre Kant forsynet med en Rad af cilierede Torner. Ved Enden af 2det Led sees en Gruppe lignende Torner eller Borster; forovrigt er Palpen ganske nogen.

1ste Par Kjæver (Fig. 37) er af sædvanligt Udseende. Den indre Tyggelap er ganske smal og noget bugtet; de paa samme fæstede Børster meget smaa.

2det Par Kjæver (Fig. 38) har de 2 ydre fingerformige Fortsatser meget smale og ved Spidsen forsynede med 3 tynde Børster.

Kjævefødderne (Fig. 39) udmærker sig i høi Grad ved den usædvanlige Udvikling af Tyggelappen, der er betydelig større end selve Basaldelen og af aflang 4-sidet Form, med det indre Hjørne udtrukket til et skarpt tandformigt Fremspring. Derimod er Palpen ualmindelig smal og simpelt cylindrisk, forovrigt sammensat af det normale Antal Led. Af disse er det 2det længst og ligesom de følgende ved Spidsen forsynet med nogle faa simple Borster. Den pladeformige Epignath er stærkt udviklet, af uregelmæssig tresidet Form og rækker med sin stumpe Spids omtrent til Enden af Palpens 3die Led.

of the peduncle taken together, and consisting of 4 distinctly defined joints, of which the 2 outermost, apart from the usual auditory bristles, are furnished with a few (3) sensory appendices, of the normal slender, linear form. In *N. oblongus*, on the other hand, the whole flagellum is represented by a single, prodigiously developed, cucubiter-shaped sensory appendix.

The 2nd pair of antennæ (fig. 33) are about twice as long as the 1st pair, and, as a rule, angularly bent, with the terminal part directed backward. Of the 5 joints of the peduncle, the 2nd is distinguished by its jutting forth on the outer side as a strong, outward-directed, spiniform projection. The 1st and 3rd joints are quite short, whereas the 2 last occur more produced. The flagellum is filiform, somewhat shorter than the peduncle, and composed of 13 articulations, beset with simple bristles.

The labrum (fig. 34) forms a small rounded lobe, consisting, as it were, of 2 segments, and movably connected with the epistome.

The labium (fig. 85) has 2 very short terminal lobes, ciliated along the inner margin.

The mandibles (fig. 36) exhibit the structure characteristic of the family. The anterior dentate part has in immediate proximity to the point a group of stiff bristles, and is, by a deep angular incision, cut off from the molar protuberance; the latter presents the form of a cylindric projection, jutting forth almost at right angles with the corpus, the said projection being somewhat obliquely truncate at the extremity and furnished there with the usual fluted sculpturing. The palp is well developed, about equal in length to the mandible itself, and composed of 3 distinct articulations, of which the middle one is longest. The terminal articulation very considerably curved, and furnished, along its inner margin, with a series of ciliated spines. At the extremity of the 2nd articulation occurs a group of similar spines or bristles; for the rest, the palp is entirely naked.

The 1st pair of maxillæ (fig. 37) has the usual appearance. The inner masticatory lobe is quite slender, and somewhat sinuous; the bristles attached to the lobe are exceedingly small.

The 2nd pair of maxillæ (fig. 38) have the 2 outer dactyliform projections exceedingly slender, and furnished at the point with 3 delicate bristles.

The maxillipeds (fig. 39) are very prominently characterized by the unusual development of the masticatory lobe, which is considerably larger than the basal part itself, and of an oblong, quadrilateral form, with the inner corner drawn out to a sharp, dentiform projection. The palp, on the other hand, is remarkably slender and simple-cylindric, but has, for the rest, the normal number of articulations. The longest of these is the 2nd, which, like the succeeding, is furnished at the point with a few simple bristles. The lamelliform epignath is very fully developed, of an irregular-triangled form, and reaching with its obtuse point about to the extremity of the 3rd articulation of the palp.

Fodderne (Fig. 40 og 41) er samtlige ægte Gangfødder, uden at nogen af dem en modificeret til Griberedskaber. De tiltager jevnt i Længde bagtil, saa at sidste Par (Fig. 41) omtrent er en halv Gang til saa langt som 1ste Par (Fig. 40). De er temmelig spinkle og alle af fuldkommen ens Bygning, kun tyndt børstebesatte og endende med en simpel, svagt boiet Klo.

Bagkroppens Operculum (se Fig. 42) er forholdsvis meget lidet, kun indtagende et meget begrændset Rum af Segmentets nedre Flade, og viser en uregelmæssig afrundet Form. I den bagre Kant er det fint cilieret, og langs Midten løber en stump Kjøl, der dog ikke som hos den typiske Art danner noget tandformigt Fremspring.

De under Operculet skjulte Buglemmer, 4 Par i Tallet, er alle ægte Respirationsorganer og af en meget blød og fragil Consistens, uden nogen tydelig Adskillelse mellem Stamme og Endeplader.

1ste Par (Fig. 43) har den ydre Plade meget liden og smal, langs den ydre Kant tæt cilieret og ved Spidsen forsynet med en enkelt stærk Børste.

2det Par (Fig. 44) har denne Plade ligeledes meget liden, men af bredere, hjertedannet Form og i den ydre Kant forsynet med 3 Fjærborster.

De 2 øvrige Par synes kun at bestaa af enkle, børstelose Plader.

Halevedhængene, der rager frem fra Enden af Bagkropssegmentet umiddelbart indenfor de tandformige laterale Fremspring (se Fig. 31, 42 og 45), er meget smaa og, uligt hvad Tilfældet er hos den typiske Art, ganske simple, kun bestaaende af et enkelt koniskt, med en Del fine Borster forsynet Led.

Dyrets Farve er som hos *N. oblongus* ensformig hvid, uden nogen Pigmentering.

Længden overstiger neppe 3^{mm}.

Forekomst og Udbredning. Denne lille characteristiske Isopode er observeret paa 4 forskjellige Stationer, men paa alle kun ganske enkeltvis, noget, der vel for en Del maa tilskrives dens ringe Størrelse og uanselige Farve, hvorved den let unddrager sig Opmærksomheden. Af disse Stationer, som samtlige, med Undtagelse af en enkelt (Stat. 290) tilhører den kolde Area, ligger en (Stat. 33) i Havet udenfor Romsdalen, en anden (Stat. 192) i Havet Vest af Tromsø, en 3die (Stat. 290) omtrent midtveis mellem Finmarken og Beeren Eiland, den 4de endelig (Stat. 51) i Havet Øst af Island. Dybden paa disse Stationer varierer fra 191 til 1163 Favne.

Artens for Tiden bekjendte Udbredningsfelt er saaledes de større Dybder i Nordhavet fra den 63de til den 73de Bredegrad.

The legs (figs. 40, 41) are all true pereiopoda, none of them modified to serve as organs of prey. They increase successively in length, the last pair (fig. 41) being about half as long again as the first (fig. 40). They are rather slender, all perfectly uniform in structure, but sparingly furnished with bristles, and terminate in a simple, faintly curving claw.

The operculum of the abdomen (see fig. 42) is comparatively very small, occupying but an exceedingly limited space on the lower face of the segment, and has an irregular-rounded form. Its posterior margin is finely ciliated; and, along the middle, runs an obtuse carina, not however, as in the typical species, constituting any dentiform projection.

The abdominal limbs — 4 pairs — concealed beneath the operculum, are all true respiratory organs, exceedingly soft and fragile, and have no distinct separation between the trunk and the terminal plates.

The 1st pair (fig. 43) have the outer plate very small and narrow, densely ciliated along the outer edge and furnished at the point with a single strong bristle.

The 2nd pair (fig. 44) have this plate likewise exceedingly small, but of a broader, cordiform shape, and furnished along the outer margin with 3 plumous bristles.

The 2 remaining pairs would appear to consist of merely simple, naked plates.

The caudal appendages, jutting forth from the extremity of the abdominal segment, immediately within the dentiform lateral projections (see figs. 31, 42, and 45), are exceedingly small, and, contrary to what is the case in the typical species, quite simple in structure, consisting of but one conical joint, furnished with a number of delicate bristles.

Colour of the animal, as in *N. oblongus*, a uniform white, without any trace of pigment.

Length scarcely, if at all, exceeding 3^{mm}.

Occurrence and Distribution. — This minute, characteristic Isopod was taken at 4 different Stations, but in each locality isolated, a circumstance that no doubt must be partly ascribed to its trifling size and well-nigh inconspicuous colour, which would easily cause it to escape attention. Of these Stations, that, with the exception of one (Stat. 290), all belong to the cold area, the first (Stat. 33) lies off the coast of Romsdalen, the second (Stat. 192) in the open sea west of Tromsø, the third (Stat. 290) about midway between Finmark and Beeren Eiland, and the fourth (Stat. 51) in the open sea east of Iceland. The depth at these Stations ranged from 191 to 1163 fathoms.

Hence, the tract throughout which the species is at present known to be distributed, comprises the great depths of the Northern Ocean, extending from the 63rd to the 73rd parallel of latitude.

Gen. 3. **Ischnosoma,** G. O. Sars. 1866.

Zoologisk Reise i 1865.

Slægtscharacteristik. Legemet særdeles smalt og forlænget, næsten cylindriskt, mere eller mindre stærkt indknebet paa Midten og tykkest i sin forreste Del. Hovedet forholdsvis lidet, med jevnt afrundet Panderand. 4de og 5te Forkropssegment fast forbundne med hinanden og dannende tilsammen et særdeles stærkt forlænget og smalt cylindriskt eller timeglasformigt Afsnit. Bagkropssegmentet af oval Form, indknebet ved Basis. Ingen Øine. 1ste Par Folere med Skaftets 2det Led stærkt forlænget og smalt, Svøben kort. 2det Par Folere betydelig længere, med traadformig, mangeleddet Svøbe. Kindbakkerne uden Palpe. 1ste Fodpar kort og undersætsigt bygget, subprehensilt, de øvrige stærkt forlængede og tynde med simpel Endeklo; de 3 bagre Par ved et betydeligt Mellemrum skilte fra de 4 forreste. Halevedhængene simple.

Bemærkninger. Nærværende eiendommelige og fra de typiske Asellider i sit ydre meget afvigende Slægt viser en vis habituel Lighed med enkelte til næste Familie, Munnopsidæ, hørende Former, navnlig Arterne af Slægten *Desmosoma*, men kan dog ikke henføres til hin Familie, da de 3 bagerste Par Fødder her ikke skiller sig i sin Bygning fra de foregaaende, men ligesom disse forestiller ægte Gangfødder. En anden ligeledes meget anomal Slægt, som jeg tidligere urigtigt har stillet sammen med Munnopsiderne, nemlig *Sl. Macrostylis*, synes hvad den ydre Form angaar at danne et Slags Overgang til den mere normale nedtrykte Form, der characteriserer de typiske Asellider. Den her omhandlede Slægt indeholder for Tiden 2 distincte Arter, nemlig den først opdagede typiske Form, *J. bispinosum*, fra den norske Kyst, og den nedenfor nærmere beskrevne nye Art.

Gen. 3. **Ischnosoma,** G. O. Sars. 1866.

Zoologisk Reise i 1865.

Generic Character. — Body exceedingly slender and elongate, almost cylindric, more or less constricted in the middle, and thickset throughout the anterior part. Head comparatively small, with uniformly rounded frontal margin. Fourth and fifth segments firmly connected together, and constituting one with the other a very prominently elongated and narrow-cylindric, or rather hourglass-like section. Abdominal segment oval in form, constricted at the base. No eyes. First pair of antennæ with 2nd joint of peduncle greatly produced and slender, flagellum short. Second pair of antennæ considerably longer, with a filiform multi-articulate flagellum. Mandibles without any palp. First pair of legs short, and thickset in structure, subprehensile, the others greatly produced and slender, with the terminal claw simple, the 3 posterior pairs separated by a considerable interspace from the 4 anterior. Caudal appendages simple.

Remarks. — The present characteristic genus, that in its outer habitus deviates very considerably from the typical Asellidæ, has a certain general resemblance to some of the forms comprised in the next family — the Munnopsidæ, more especially the species of the genus *Desmosoma*, yet cannot be referred to that family, since the 3 posterior pairs of legs exhibit no difference in structure from the preceding, but, like the latter, represent true pereiopoda. Another most anomalous form that I had erroneously classed along with the Munnopsidæ, viz. the genus *Macrostylis*, would appear, as regards its outer habitus, to constitute a kind of transition to the more normal, depressed form characterizing the typical Asellidæ. The genus treated of here comprises at present 2 distinct species, viz. the typical form (that first discovered), *J. bispinosum*, from the Norwegian coast, and the new species described in detail below.

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28. Ischnosoma qvadrispinosum, G. O. Sars, n. sp.

(Pl. XI, Fig. 26—29)

Ischnosoma qvadrispinosum, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 10.

Artskarakteristik. Legemet overalt ru af smaa tiltrykte Pigger. 1ste og 3die Forkropssegment til hver Side bevæbnede med en stærk fortilrettet Torn; de paa 1ste Segment størst. 4de og 5te Segment tilsammen indtagende omtrent Halvparten af Totallængden. Bagkropssegmentet forholdsvis lidet, bagtil stumpt tilspidset. 2det Par Folere kortere end Legemet. 1ste Fodpar mindre kraftigt bygget end hos den typiske Art, med 4de Led kun lidet opsvul-

28. Ischnosoma qvadrispinosum, G. O. Sars, n. sp.

(Pl. XI, figs. 26—29)

Ischnosoma qvadrispinosum, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 10.

Specific Character. — Body everywhere rough, by reason of minute, appressed spikes. First and third segments armed on either side with a strong, anteriorly directed spine; those on the 1st segment largest. Fourth and fifth segments measuring together about one-half of total length. Abdominal segment comparatively small, with posterior extremity obtusely pointed. Second pair of antennæ shorter than body. First pair of legs less

met. Halevedhængene meget smaa, enleddede. Farven graahvid. Længden 4.20^{mm}.

Findested. Stat. 248.

Bemærkninger. Fra den typiske Art er denne let kjendelig ved de overalt piggede Integumenter, de mindre stærkt forlængede 2det Par Følere og den rudimentære Beskaffenhed af Halevedhængene; endelig derved, at ikke blot 1ste, men ogsaa 3die Forkropssegment til hver Side gaar ud i spidse Torner.

Beskrivelse af Hunnen. Legemet er (se Pl. XI, Fig. 26) af den for Slægten characteristiske spinkle og langstrakte Form, med den største Brede neppe overskridende $^1/_5$ af Længden og Midtpartiet særdeles smalt og ligesom udtrukket.

Integumenterne er temmelig faste og overalt ru af meget smaa tiltrykte Pigger.

Hovedet er forholdsvis lidet, næsten cirkelformigt og ved Basis delvis omfattet af 1ste Forkropssegment, med Panderanden jevnt buet.

De 3 første Forkropssegmenter er omtrent indbyrdes af ens Størrelse og over dobbelt saa brede som lange. De forreste Sidehjørner af 1ste og 3die er utrukne til lange skraat fortilrettede dolkformige Fortsatser, hvoraf navnlig de paa 1ste Segment er af betydelig Længde.

De 2 følgende Forkropssegmenter viser en meget eiendommelig Form, idet de tilsammen danner et stærkt forlænget, paa Midten smalt cylindriskt, eller næsten timeglasformigt Kropsafsnit, indtagende omtrent Halvparten af Totallængden. Begge Segmenter er meget fast, og som det synes ubevægeligt forbundne med hinanden, men dog tydeligt begrændsede ved en lige Tværsutur, som bemærkes foran Midten af nævnte Afsnit.

De 2 sidste Forkropssegmenter er meget smaa, med jevnt afrundede Sidedele og den bagre Rand noget concaveret.

Bagkropssegmentet er forholdsvis lidet, kun indtagende $^1/_7$ af Totallængden. Af Form er det ovalt, noget indknebet ved Basis, og med Enden stumpt tilspidset.

Af Øine findes intetsomhelst Spor.

1ste Par Følere (Fig. 27) er omtrent saa lange som Hovedet og de 2 første Forkropssegmenter tilsammen. Skaftets 1ste Led er meget kort, skjælformigt, med en noget takket Rand. 2det Led er stærkt forlænget og smalt, i den indre Kant forsynet med stærke Børster. 3die Led er forholdsvis lidet og synes mere at slutte sig til Svøben end Skaftet; det følges af 3 korte Led, der forestiller den egentlige Svøbe.

2det Par Følere (se Fig. 26) er betydelig stærkere udviklede, skjøndt neppe opnaaende Legemets Længde. Skaftets 5 Led er alle smale og simpelt cylindriske. Svøben er

powerful in structure than in the typical species, with 4th joint but very little swollen. Caudal appendages exceedingly minute, uni-articulate. Colour greyish-white. Length 4.20^{mm}.

Locality. — Stat. 248.

Remarks. — From the typical species, this form is easily distinguished by the rough surface of the integuments, the less produced 2nd pair of antennæ, and the rudimentary character of the caudal appendages; finally, not only by the 1st, but also the 3rd, segment projecting on either side as an acute spine.

Description of the Female. — The body (Pl. XI, fig. 26) has the slender and elongate form peculiar to the genus, with the greatest breadth scarcely exceeding one-fifth of the length, the medial part remarkably narrow and, as it were, drawn out.

The integuments are rather compact, and everywhere rough, from minute appressed spines, or spicules.

The head is comparatively small, almost circular in shape, and at the base partly encompassed by the 1st free segment, with the frontal margin uniformly arched.

The 3 first segments are well-nigh uniform in size, and more than twice as broad as long. The anterior lateral corners of the 1st and 3rd jut out as long, oblique, anteriorly directed, dagger-shaped projections, those on the 1st segment in particular being of very considerable size.

The 2 succeeding segments exhibit a very peculiar form, constituting together an exceedingly elongate and, in the middle, narrow-cylindric, or almost hourglass-shaped section of the body, that measures about one-half of the total length. The two segments are very firmly, and, it would seem, immovably connected with each other, though distinctly defined by a straight, transverse suture, occurring somewhat anterior to the middle of the aforesaid section.

The 2 last segments belonging to the anterior division are very small, with uniformly rounded lateral parts and the posterior margin somewhat concave.

The abdominal segment is comparatively small, measuring not more than one-seventh of the total length. In form, it is oval, somewhat constricted at the base, and with the extremity obtusely pointed.

Of eyes no trace whatever could be detected.

The 1st pair of antennæ (fig. 27) are about as long as the head and the 2 first segments taken together. The 1st joint of the peduncle is extremely short, squamiform, with a somewhat jagged margin. The 2nd joint is greatly produced, and slender, as also, along the inner margin, furnished with 4 strong bristles. The 3rd joint is comparatively small, and would appear rather as belonging to the flagellum than to the peduncle; it is succeeded by 3 short articulations, representing the true flagellum.

The 2nd pair of antennæ (fig. 26) is much stronger in development, though scarcely attaining the length of the body. The 5 joints of the peduncle are all slender and

traadformig, noget kortere end Skaftet og sammensat af circa 14 Led.

Munddelene kunde ikke nøiere undersøges paa det eneste foreliggende Exemplar.

1ste Fodpar (Fig. 28) er betydelig kortere end de øvrige og uddannet til et Slags Griberedskaber, skjøndt af mindre kraftig Bygning end hos den typiske Art. Basalleddet er meget smalt og næsten saa langt som alle de øvrige tilsammen. 4de Led er noget, skjøndt ikke meget opsvulmet og i den indre Kant forsynet med 3 stive Børster. Sidste Led er meget bevægeligt forbundet med dette og kan slaaes ind mod samme; det ender med en stærk, tydeligt 2-leddet Klo.

De øvrige Fodpar er alle af ens Udseende, ægte Gangfødder og af en særdeles spinkel Bygning. De tiltager noget i Længde forfra bagtil og viser sig ordnede i 2 Sæt, idet de 3 forreste er adskilte fra de 3 bagerste ved et meget betydeligt Mellemrum, der indtages af det ovenfor omtalte mediane Kropsafsnit.

Halevedhængene (se Fig. 29) er meget smaa og synes kun at bestaa af et enkelt konisk Led, der ved Spidsen har nogle fine Børster.

Dyrets Farve er ensformig skidden graalig, omtrent som det Mudder, hvori det lever.

Længden af det undersøgte Individ er kun 4.20^{mm}.

Forekomst og Udbredning. Et enkelt Exemplar af denne distincte Art optoges i Bundskraben under Expeditionens 2det Tog i Havet Vest af Lofoten fra et Dyb af 778 Favne.

Om Artens Udbredning kan selvfølgeligt intet med Bestemthed anføres; men da den ovennævnte Station tilhører den kolde Area, er der al Rimelighed for, at den er en ægte arktisk og for de nordlige Have eiendommelig Form.

simple-cylindric. The flagellum is filiform, somewhat shorter than the peduncle, and composed of about 14 articulations.

The oral appendages could not be submitted to close examination in the sole specimen obtained.

The 1st pair of legs (fig. 28) are considerably shorter than the rest, and developed as a kind of prehensile organs, though less powerful in structure than in the typical species. The basal joint is exceedingly slender, and well-nigh as long as all the others taken together. The 4th joint is somewhat, though not much, swollen, and furnished along the inner margin with 3 stiff bristles. The last joint is very movably connected with the latter, and admits of being bent in towards it; this last joint terminates in a strong, distinctly bi-articulate claw.

The remaining pairs of legs are all uniform in appearance, being true pereiopoda, and exceedingly slender in structure. They increase somewhat in length posteriorly, and are arranged in 2 series, the 3 anterior being separated from the 3 posterior pairs by a very considerable interspace, occupied by the aforesaid medial section of the body.

The caudal appendages (see fig. 29) are very small, and would appear to consist of but one conical joint, furnished at the extremity with a few delicate bristles.

The colour of the animal is a uniform dirty grey, much the same as that of the mud in which it lives.

Length of the specimen examined only 4.20^{mm}.

Occurrence and Distribution. — A single specimen of this distinctly characterized species was brought up in the dredge on the 2nd cruise of the Expedition, in the open sea west of Lofoten, from a depth of 778 fathoms.

Respecting the distribution of the species, nothing can of course be stated with certainty; but the Station at which the specimen was taken being in the cold area, there is every reason to regard the animal as a true Arctic form, peculiar to the fauna of the Northern Seas.

Fam. 2. **Munnopsidæ**, Lilljeborg.

(Isopoda remigantia, G. O. Sars)

Bemærkninger. De til denne Familie hørende *Isopoder* udmærker sig i høi Grad ved den mærkværdige Bygning af de 3 bagerste Fodpar, der er meget ulige de øvrige saavel i Form som Function, idet de er uddannede til mægtige Svømmeredskaber, hvormed Dyret kan, ofte med stor Fart, bevæge sig frit om i Vandet i baglænds Retning. Denne Character er i Virkeligheden saa eiendommelig og ulig alt, hvad vi hidtil kjendte, at jeg i Begyndelsen blev forledet til herpaa at grunde en ganske egen Isopodetribus,

Fam. 2. **Munnopsidæ**, Lilljeborg.

(Isopoda remigantia, G. O. Sars)

Remarks. — The *Isopoda* belonging to this family are very prominently distinguished by the remarkable structure of the 3 posterior pairs of legs, differing most essentially as they do alike in form and function, being developed to powerful natatory organs, by means of which the animal, often with great rapidity, can move through the water in a backward direction. This character is indeed so peculiar and unlike anything hitherto observed, that at first I felt disposed to establish from it a distinct tribe of Isopods,

under Benævnelsen *Isopoda remigantia*. Jeg er imidlertid nu fuldkommen enig med Prof. Lilljeborg i, at de omhandlede Former i alle andre Henseender slutter sig saa nær til de egentlige *Asellider*, at de neppe kan skilles fra disse i en særskilt Tribus, skjondt de efter min Mening vel fortjener at sammenstilles i en egen Familie. Typen for Familien er den af min Fader opstillede Slægt *Munnopsis* med Arten *M. typica*. Foruden denne har jeg kunnet foie endnu 3 distincte Slægter til Familien, nemlig *Eurycope*, *Ilyarachna* og *Desmosoma*, enhver repræsenteret af flere Arter.

by the name of *Isopoda remigantia*. Now, however, I quite agree with Professor Lilljeborg, that the forms in question approximate in all other respects so closely the true *Asellida* as hardly to admit of being separated from the latter into a new tribe, though, in my judgment, they might well be comprised within a special family. The type of the family is the genus *Munnopsis*, established by my father, the late Professor Dr. Michael Sars, with the species *M. typica*. Exclusive of *Munnopsis*, I have myself been enabled to add 3 distinct genera to the family, viz. *Eurycope*, *Ilyarachna*, and *Desmosoma*, each represented by several species.

Gen. **Eurycope**, G. O. Sars, 1863.

Om en anomal Gruppe af Isopoder.

Slægtscharacteristik. Legemet af oval Form, noget nedtrykt, med det forreste og bagerste Parti af Legemet mindre skarpt begrændsede. Hovedet bredt, til hver Side udrandet for Fæstet af Folerne. De 4 forste Forkropssegmenter korte, oventil paa tværs indhulede, de 3 bagerste betydelig storre og oventil stærkt convexe. Bagkropssegmentet stort og bredt, skjoldformigt. 1ste Par Folere med Skaftets 1ste Led meget stort, skjælformigt, Svoben smal, mangeleddet. 2det Par Folere stærkt forlængede, med Svoben længere end Skaftet. Kindbakkerne stærkt byggede med tydelig Palpe. Kjævefodderne pladeformige, med Palpens 2det og 3die Led særdeles brede, de 2 ydre smale, dannende tilsammen en ufuldkommen Sax. 1ste Fodpar betydelig kortere end de ovrige, meget smalt, ikke prehensilt; de 3 følgende Par stærkt forlængede. De 3 bagre Fodpar alle uddannede til kraftige Svommeredskaber af ens Udseende, med de 2 ydre Led aarebladformigt udvidede og Endekloen mere eller mindre rudimentær, stiletformig. Halevedhængene smaa, tvegrenede.

Bemærkninger. Hos nærværende Slægt er den Character, der udmærker Familien *Munnopsidæ*, nemlig den mærkværdige Omformning af de bagre Fodder til Svommeredskaber, skarpest og tydeligst udpræget, og den kan derfor egentlig betragtes som den mest typiske i Familien. Characteristisk for Slægten ligeoverfor de ovrige er fremdeles Legemets compakte Form, den ligelige Udvikling af 2det, 3die og 4de Fodpar samt af Svommefodderne, og de tydeligt tvegrenede Halevedhæng. Slægten tæller for Tiden, iberegnet den nedenfor nærmere beskrevne Form, ikke mindre end 9 forskjellige Arter, hvoraf de 8 tilhører Nordhavet,

Gen. **Eurycope**, G. O. Sars, 1863.

Om en anomal Gruppe af Isopoder.

Generic Character. — Body oval in form, somewhat depressed, with the anterior and posterior sections not very sharply defined. Head broad, on either side emarginate, for the attachment of the antennæ. The four anterior segments short, above transversely hollowed; the three posterior much larger, and very considerably arched above. Abdominal segment large and broad, scutiform. First pair of antennæ with 1st joint of peduncle very large, squamiform; flagellum slender, multi-articulate. Second pair of antennæ greatly produced, with flagellum longer than peduncle. Mandibles powerful in structure, with a distinct palp. Maxillipeds lamelliform, with 2nd and 3rd articulations of palp exceedingly broad, the 2 outer ones slender, constituting an imperfect chela. First pair of legs considerably shorter than the rest, exceedingly slender, nonprehensile; the 3 succeeding pairs greatly produced. The 3 posterior pairs of legs all developed as powerful natatory organs, uniform in appearance, with the 2 outer articulations dilated like the blade of an oar, and the terminal claw more or less rudimentary, styliform. Caudal appendages small, bifurcate.

Remarks. — In the present genus, the character distinguishing the family *Munnopsidæ*, viz. the remarkable transformation of the posterior legs into natatory organs, is most prominently and conspicuously developed; and hence *Eurycope* may properly be regarded as the most typical genus of the family. Peculiar, too, for this genus, as compared with the other genera, is the compact form of body, the equable development of the 2nd, 3rd, and 4th pairs of legs, as also of the posterior or natatory pairs, and the distinctly bifurcate caudal appendages. The genus comprises at present, inclusive of the form described in detail

den 9de (*E. robusta* Harger) Havet ved Nordamerikas Østkyst. Alle Arter er ægte Dybvandsformer.

29. Eurycope gigantea. G. O. Sars, n. sp.

(Pl. XI. Fig. 1—25).

Eurycope gigantea. G. O. Sars, Prodromus descriptionis Crust. etc., No. 85.

Artscharacteristik. Legemet af aflang Form, mere end dobbelt saa langt som bredt og kun lidet udvidet paa Midten. Det forreste Afsnit af Legemet (Hovedet og de 4 forreste Segmenter) betydelig kortere end det bagerste og ved en bemærkelig Indknibning skilt fra samme. Hovedet uden tydelig Frontalfortsats, med Mundregionen stærkt fremspringende. 1ste Forkropssegment neppe bredere end Hovedet, de 3 følgende med jevnt afrundede Epimerer. De 3 bagre Forkropssegmenter alle vel begrændsede og indbyrdes af ens Storrelse. Bagkropssegmentet særdeles stort og bredt, bagtil i Midten noget udbugtet. 2det Par Folere omtrent 4 Gange længere end Legemet, med Skaftets 2 ydre Led stærkt forlængede og Svoben kun lidet længere end Skaftet. Kindbakkerne uden Tænder, med glat Tyggerand. 1ste Fodpar med sidste Led usædvanlig kort og Endekloen rudimentær; de 2 følgende Par næsten dobbelt saa lange som Legemet. Svømmefødderne med de 2 ydre bladformige Led omtrent indbyrdes af ens Storrelse; Endekloen særdeles liden. Halevedhængene meget smaa, med den ydre Gren betydelig mindre end den indre. Farven ensformig lys gulagtig, gjennemskinnende. Længden indtil 33^{mm}.

Findesteder. Stat. 33, 124, 251, 286, 312, 362, 363.

Beskrivelse af Hunnen. Legemet er (se Pl. XI, Fig. 1, 2 og 3) noget slankere og mindre undersætsigt bygget end hos de øvrige Arter af Slægten, idet den storste Brede er kjendeligt mindre end den halve Længde. Formen er aflang oval, noget smalere i det forreste Parti, men forøvrigt næsten overalt af ens Brede. Rygsiden er noget hvælvet, især i den bagre Del, og Segmenternes Sidedele eller Epimerer horizontalt udstaaende. Som hos de øvrige til denne Familie hørende Former kan man paa Legemet adskille et forreste og et bagerste Parti, hvoraf hint sammensættes af Hovedet og de 4 forreste Forkropssegmenter, dette af de 3 bagerste Forkropssegmenter og Bagkroppen.

below, not less than 9 different species, of which 8 inhabit the Northern Ocean, the 9th (*E. robusta* Harger) occurring off the eastern coast of North America. All of these species are true deep-sea forms.

29. Eurycope gigantea. G. O. Sars, n. sp.

(Pl. XI. figs. 1—25).

Eurycope gigantea, G. O. Sars, Prodromus descriptionis Crust. etc., No. 85.

Specific Character. — Body oblong in form, with length more than twice exceeding breadth, and but slightly dilated in the middle. Anterior section of body (head and the 4 anterior segments) considerably shorter than posterior, and separated by an appreciable instriction. Head without any distinct frontal projection, but with the oral region prominently protruding. First segment scarcely at all broader than head; the 3 succeeding segments with uniformly rounded epimera. The 3 posterior segments all well defined, and uniform in size. Abdominal segment exceedingly large and broad, posteriorly somewhat produced in the middle. Second pair of antennæ about 4 times as long as body, with the 2 outer joints of peduncle greatly produced, and the flagellum but very little longer than the former. Mandibles without teeth, cutting edge smooth. First pair of legs with last articulation unusually short and terminal claw rudimentary; the 2 succeeding pairs almost twice as long as body. Natatory legs with the 2 outer foliaceous articulations well-nigh uniform in size; terminal claw exceedingly small. Caudal appendages very diminutive, with outer branch considerably smaller than inner. Colour a uniform light-yellow. Length reaching 33^{mm}.

Locality. — Stats. 33, 124, 251, 286, 312, 362, 363.

Description of the Female. — The body (see Pl. XI, figs. 1, 2, and 3) is somewhat more slender and less thickset than in the other species of the genus, its greatest breadth being appreciably less than half the length. The form is oblongo-oval, a trifle slimmer throughout the foremost part, but elsewhere exhibiting an almost uniform breadth. The dorsal face is somewhat arcuate, more especially the posterior portion, and the lateral parts of the segments, or the epimera, project horizontally. The body, as in the other forms belonging to this family, has an anterior and a posterior section, the former consisting of the head and the 4 first segments, the latter of the 3 posterior

Grændsen mellem begge disse Partier er hos nærværende Form skarpere markeret end hos de øvrige Arter af Slægten, idet en tydelig bemærkelig Indknibning skiller begge ad.

Integumenterne er meget tynde og gjennemsigtige samt uden nogen udpræget Structur.

Hovedet er stort og bredt, oventil jevnt hvælvet og til hver Side udrandet for Insertionen af Følerne. I Midten stiger Panden skraat nedad mellem Roden af 1ste Par Følere, uden at danne nogen tydelig Frontalproces, og forbinder sig her med det halvmaaneformige noget fremspringende Epistom (se Fig. 4).

1ste Forkropssegment er kun lidet bredere end Hovedet og kun forsynet med smaa og lidet fremspringende Epimerer. De 3 følgende Segmenter er derimod bredere og har Epimererne mere pladeformige og jevnt afrundede. Alle disse 4 Segmenter er oventil paatværs udhulede, idet saavel den forreste som bagerste Rand er noget hævet (se Fig. 2).

De 3 bagerste Forkropssegmenter er betydelig større og tilsammen omtrent lige lange som hele det forreste Parti af Legemet. De er alle, i Modsætning til hvad Tilfældet er hos enkelte andre Arter af Slægten, tydeligt begrændsede fra hinanden og oventil stærkt hvælvede samt viser langs ad Midten en grund Fure, der til Siderne er begrændset af afrundede knudeformige Fremspring. Paa dem alle er den forreste Rand stærkt buet og Sidedelene fortil gaaende ud i et skarpt Hjørne.

Bagkropssegmentet er nalmindelig stort og bredt, neppe mindre end de 3 bagerste Segmenter tilsammen, skjoldformigt, med jevnt buede Sidekanter og bagtil i Midten udtrukket i et stumpt Fremspring, paa hvis Underside Analaabningen er beliggende (se Fig. 3 og 24).

Øine mangler fuldstændigt ligesom hos alle øvrige bekjendte Former af denne Familie.

1ste Par Følere (Fig. 5) udspringer fra den forreste Del af Hovedet og er adskilte ved et tydeligt Mellemrum, der danner ligesom en Bro mellem Panden og Epistomet (se Fig. 1 og 4). De opnaar neppe mere end $^1/_4$ af Totallængden og bestaar af et 3-leddet Skaft og en mangeleddet Svøbe. Skaftets 1ste Led er i høi Grad udmærket ved sin betydelige Størrelse og eiendommelige, næsten skjældannede Form. Det ender fortil med et afrundet Fremspring og viser paa sin øvre Flade nær Enden en Grube, hvori den følgende Del af Følerne er meget bevægeligt indleddet. Skaftets 2 sidste Led er meget smaa og synes derfor snarere at udgjøre den basale Del af selve Svøben. Denne er smalt cylindrisk, særdeles bøielig og sammensat af et stort Antal meget korte Led, der ved Roden er mindre tydeligt adskilte. De bærer alle i den ene Kant gjennemsigtige baandformige Sandsevedhæng, der tilsammen danner en tæt Fryndse langs ad Svøben.

segments and the abdomen. The boundary between these regions is in the present form marked off much more sharply than in the other species of the genus, a distinctly perceptible instriction separating the two.

The integuments are very thin, and translucent, as also without any prominent sculpturing.

The head is large and broad, uniformly arched above, and on either side emarginate, for the insertion of the antennæ. In the middle, the front protends obliquely downward, between the bases of the 1st pair of antennæ, without forming any distinct frontal apophysis, and unites there with the lunate and somewhat projecting epistome (see fig. 4).

The 1st segment is but little broader than the head, and furnished only with small and very slightly projecting epimera. The 3 succeeding segments are, on the other hand, broader, and have the epimera more lamelliform, and uniformly rounded. These 4 segments are each of them transversely hollowed above, both the anterior and the posterior margins being somewhat raised (see fig. 2).

The 3 posterior segments are considerably larger, and, taken together, about equal in length to the whole of the anterior section of the body. Contrary to what occurs with some species of the genus, they are distinctly defined from each other, and above very considerably arched, exhibiting, too, along the middle, a shallow groove, marked off along the sides by a rounded, tuberculiform projection. In each of them, the anterior margin is very arcuate, and the lateral parts jut forth anteriorly as an acute angle.

The abdominal segment unusually large and broad, and very little, if at all, smaller than the 3 posterior segments taken together, is scutiform, with uniformly arched lateral margins, and posteriorly, in the middle, drawn out as an obtuse projection, on the under surface of which occurs the anal opening (see figs. 3 and 24).

No trace whatever of eyes, as in all other known forms of this family.

The 1st pair of antennæ (fig. 5) originate on the foremost part of the head, separated one from the other by a distinct interspace, constituting, as it were, a bridge between the front and the epistome (see figs. 1 and 4). They attain scarcely one-fourth of the total length, and consist of a three-jointed peduncle and a multi-articulate flagellum. The 1st joint of the peduncle is strikingly characterized by its considerable size and very peculiar, almost squamiform shape. It terminates anteriorly in a rounded projection, and exhibits, on its upper surface, near the end, a small cavity, into which the remaining part of the antenna is very movably jointed. The 2 last joints of the peduncle are very small, and would, therefore, appear rather to constitute the basal part of the flagellum itself. The latter is slender-cylindric, exceedingly flexible, and composed of a large number of very small articulations, which, at the base, are less distinctly separated. On one of the margins, they all bear translucent riband-shaped appendices, constituting together a thick fringe along the surface of the flagellum.

2det Par Folere (se Fig. 1), der udspringer tæt nedenunder og noget til den ydre Side af 1ste Par, er enormt udviklede, mere end 4 Gange saa lange som hele Legemet, og bestaar som sædvanligt af et 5-leddet Skaft og en mangeleddet Svobe. Skaftets 3 første Led er korte og tykke og danner tilsammen et noget uregelmæssigt formet, koniskt Rodstykke (se Fig. 6 og 7), om hvilket de Leddene begrændsende Suturer slynger sig mere eller mindre tydeligt spiralformigt. Toppen af dette Rodstykke ender med en takket Rand, der ligesom omfatter den følgende Del af Skaftet. Denne, der dannes af de 2 ydre Led, er særdeles stærkt forlænget, med begge Led smalt cylindriske, indbyrdes omtrent af ens Længde, og i Kanterne besatte med talrige stive Borster og Torner. Svoben er kun ubetydelig længere end Skaftet, traadformig og sammensat af talrige korte Led.

Mundregionen er særdeles stærkt fremspringende, saa at Hovedet, seet fra Siden (Fig. 2) synes fortil skjævt afskaaret. Den begrændses fortil fra Panden af en bred, halvmaaneformigt buet Plade, der forestiller Epistomet (se Fig. 4).

Overlæben (Fig. 8), der udgaar fra Midten af den ovenomtalte Epistomplade, viser ved Roden oventil en afrundet Forhoining og har den nedad frit fremragende Del næsten af halvcirkeldannet Form, med Enderanden i Midten svagt indbugtet og fint cilieret.

Underlæben (Fig. 8) har Endelapperne stærkt divergerende og af smal tungedannet Form samt i Kanterne tæt cilierede; imellem dem bemærkes endnu 2 andre mindre, tæt sammen stillede Lapper, imellem hvilke Indgangen til Mundhulen er beliggende.

Kindbakkerne (Fig. 10 og 11) er særdeles kraftigt udviklede og springer frit frem til hver Side af Overlæben (se Fig. 4), overragende denne kjendeligt nedad. Deres Corpus er næsten af trekantet Form og articuleret langs den ene (øvre) Side til Hovedet. Fra den modsatte Side udgaar en triangulær Fortsats, hvortil Tyggemuskelerne inserer sig. I sin Bevæbning skiller de sig mærkeligt fra de øvrige Arter af Slægten og viser i denne Henseende mere Lighed med samme hos Slægten *Ilyarachna*. Deres Tyggerand er nemlig ganske glat uden tydelige hverken Tænder eller Torner, og Tyggeknuden er kun lidet fremtrædende samt mangler ganske den sædvanlige riflede Skulptur, i hvis Sted kun et yderst lidet Knippe af fine Borster bemærkes. Palpen, der udspringer omtrent fra Midten af Kindbakkernes ydre Flade, er særdeles smal og bestaar af 3 tydeligt begrændsede Led, hvoraf de 2 første er simpelt cylindriske og temmelig stærkt forlængede, medens det sidste er ganske lidet og stærkt, næsten leformigt krummet.

De 2 Par Kjæver (Fig. 12 og 13) er af fuldkommen normal Bygning. Paa 1ste Par (Fig. 12) er den ydre Tyggelap kraftigt udviklet og i Enden forsynet med stærke Torner, medens den indre Lap er forholdsvis liden og smal.

The 2nd pair of antennæ (see fig. 1), originating immediately beneath, and a little on the outer side of, the 1st pair, are prodigiously developed — more than 4 times the length of the whole body, and consist, as usual, of a five-jointed peduncle and a multi-articulate flagellum. The 3 first joints of the peduncle are short and thick, and constitute together a somewhat irregular-formed, conic basal part (see figs. 6, 7), round which the sutures separating the joints wind as a more or less distinct spiral. The top of this basal part terminates in a jagged margin, that, as it were, encompasses the succeeding portion of the peduncle. The latter, composed of the 2 outer joints, is very greatly produced, with both joints slender-cylindric, about uniform in length, and beset along the edges with numerous stiff bristles and spines. The flagellum is but very little longer than the peduncle, filiform, and composed of numerous short articulations.

The oral region projects very prominently, giving to the head, when viewed from the side, anteriorly an oblique, truncate appearance. Forwards, it is separated from the front by a broad, lunate, vaulted plate, representing the epistome (see fig. 4).

The labrum (fig. 8), proceeding from the middle of the forementioned epistomial plate, exhibits at the base, above, a rounded prominence, and has the freely downward projecting part of almost semicircular form, with the terminal margin faintly incurving in the middle, and delicately ciliated.

The labium (fig. 9) has the terminal lobes widely diverging, and of a slender, linguiform shape, as also densely ciliated along the edges: between the lobes occur, close together, 2 smaller ones, and between these is located the entrance to the buccal cavity.

The mandibles (figs. 10, 11) are most powerfully developed, and jut freely forward on either side of the labrum (see fig. 4), projecting appreciably over it downwards. Their corpus is almost triangular in form, and on one side (the upper) articulated, up to the head. From the opposite side juts out a triangular projection, into which the masticatory muscles are inserted. As regards their armature, they differ widely from those in the other species of the genus, exhibiting in this character a greater resemblance to the mandibles in the genus *Ilyarachna*. Their cutting edge is perfectly smooth, without any distinct teeth or spines, and the molar protuberance but slightly prominent, as also without a trace of the usual fluted sculpturing, in place of which but an exceedingly small tuft of delicate bristles can be observed. The palp, originating about in the middle of the outer surface of the mandibles, is exceedingly slender, and consists of 3 distinctly defined articulations, whereof the 2 first are simple-cylindric and rather elongate, the last being quite small and strongly curved, almost falciform.

The 2 pair of maxillæ (figs. 12, 13) are quite normal in structure. On the 1st pair (fig. 12), the outer masticatory lobe is powerfully developed, and furnished at the extremity with strong spines, whereas the inner lobe is

Paa 2det Par (Fig. 13) er de 2 ydre fingerformige Fortsatser stærkt forlængede og de paa dem fæstede Borster forholdsvis smaa.

Kjævefødderne (Fig. 14), der for en stor Del dække de øvrige Munddele nedentil (se Fig. 3), er af pladedannet, membranos Beskaffenhed og ganske gjennemsigtige. Basaldelen bestaar af 2 skarpt markerede Segmenter, hvoraf det sidste er størst og noget udvidet. Den fra dette Segment indad udgaaende Tyggelap er ganske smal, tungedannet og ved Enden forsynet med korte Borster. Palpen bestaar af 5 tydelige Led, hvoraf 2det og 3die er stærkt udvidede, pladeformige og indbyrdes forbundne ved en meget skjæv Sutur. De 2 sidste Led er pludselig betydelig smalere og danner tilsammen en Slags ufuldkommen Sax, idet det første af dem indad gaar ud i en fingerformig Lap, imod hvilken det smale ydre Led kan indboies. Alle Led er i Kanterne forsynede med talrige korte Borster. Den pladeformige Epignath er af bred lancetdannet Form og rækker med sin Spids omtrent til Midten af Palpens 2det Led.

1ste Fodpar (Fig. 15) er af meget svag Bygning og lige udstrakt neppe af mere end Legemets halve Længde. Det er ialmindelighed (se Fig. 2 og 3) bøiet ind under den forreste Del af Kroppen, saa at Enden ligger mere eller mindre i Contact med Munddelene, hvorfor ogsaa dets Function nærmest maa antages at være den, at hjælpe til at bringe Fødemidlerne til Munden, skjøndt det ifølge sin Bygning ikke forestiller virkelige Griberedskaber. Det bestaar som de følgende Fodpar af 5 Led, hvoraf 4de er længst og ligesom de 2 foregaaende i sin indre Kant tæt og fint cilieret. Sidste Led der med hint danner en mere eller mindre stærk knæformig Boining, er neppe halvt saa langt og særdeles smalt, og Endekloen ligeledes usædvanlig lidet udviklet.

De 3 følgende Fodpar (se Fig. 1) er som hos Slægtens øvrige Arter stærkt forlængede og forestiller de egentlige Gangfødder. De er alle af ens Udseende, næsten dobbelt saa lange som Legemet, og har de 3 første Led ganske korte, hvorimod de 2 øvrige er særdeles lange og tynde, med talrige korte og stive Borster i Kanterne. Endekloen er paa de 2 første Par (Fig. 16) leformig krummet, paa sidste Par (Fig. 17) næsten ret.

De 3 bagre Par Fødder (Fig. 18) er af et helt forskjelligt Udseende og i Lighed med hvad Tilfældet er hos de øvrige til denne Familie hørende Former, omdannede til kraftige Svømmeredskaber. Alle 3 Par er af fuldkommen ens Udseende, mere eller mindre stærkt Sformigt bøiede og udmærkede ved den eiendommelige Form at de 2 ydre Led, der er stærkt, aarebladformigt udvidede og langs Kanterne forsynede med en tæt Rad af Fjærborster. Det første af disse Led er næsten hjerteformigt, det andet kun lidet mindre og af regelmæssig elliptisk Form. Begge Led

comparatively small and slender. On the 2nd pair (fig. 13), the 2 outer dactyliform projections are greatly produced, and the bristles attached to them comparatively small.

The maxillipeds (fig. 14), that to a great extent cover the rest of the oral appendages (see fig. 3), are lamelliform, membranous, and quite translucent. The basal part consists of 2 sharply defined segments, of which the latter is the larger of the two, and somewhat dilated. The masticatory lobe, proceeding inwards from that segment, is very slender, linguiform, and furnished at the extremity with short bristles. The palp consists of 5 distinct articulations, of which the 2nd and 3rd are greatly dilated, lamelliform, and connected together by an exceedingly oblique suture. The 2 last articulations become abruptly narrower, constituting a kind of imperfect chela, the first jutting forth inward as a dactyliform lobe, against which the delicate outer articulation admits of being bent in. All the articulations are furnished along the edges with numerous short bristles. The lamelliform epignath is broadly lanceolate, reaching with its point almost to the middle of the 2nd articulation of the palp.

The 1st pair of legs (fig. 15) are exceedingly feeble in structure, and, when fully extended, measure scarcely, if at all, more than half the length of the body. They are, as a rule (see figs. 2, 3), bent in under the foremost part of the body, their extremities being thus brought more or less in contact with the oral appendages; and hence their chief function must be regarded as subservient in conveying food to the mouth, though, according to their structure, they can not represent true prehensile organs. They consist, like each of the succeeding pairs, of 5 articulations, of which the 4th is longest, and, like the 2 preceding ones, are densely and finely ciliated along the outer margin. The last joint, that, together with the 4th, constitutes a more or less strong geniculate bend, is scarcely half as long as the latter, and exceedingly slender, the development, too, of the terminal claw being unusually slight.

The 3 succeeding pairs of legs (see fig. 1) are, as in the other species of the genus, greatly produced, and represent the true pereiopoda. They are all uniform in appearance, well-nigh twice as long as the body, and have the 3 first articulations quite short, whereas the 2 others are exceedingly long and slender, with numerous short and stiff bristles along the edges. The terminal claw on the 2 first pairs (fig. 16) is falciform, on the last pair (fig. 17) almost straight.

The 3 posterior pairs of legs (fig. 18) are widely different in appearance, and, like those in the other forms belonging to this family, transformed into powerful natatory organs. All 3 pairs are perfectly uniform in appearance, curved more or less prominently into the shape of the letter S, and characterized by the peculiar form distinguishing the 2 outer articulations, which are greatly dilated, in the form of an oar-blade, and furnished along the margins with a close series of plumous bristles. The first of these articulations is almost cordiform, the other, but little smaller

er særdeles bevægeligt forbundne med hinanden ved en ganske tynd Stilk, saa at det sidste kan slaaes ind mod det første. Endekloen er særdeles liden, stiletformig og næsten ganske skjult mellem de fra sidste Led udgaaende Fjærborster (se Fig. 19).

Brystposen var hos ingen af de erholdte Exemplarer fuldt udviklet; men de 4 Par Plader, der bidrager til dennes Dannelse, var paa de fleste tydeligt anlagte i Form af smaa fra Basis af de 4 første Fodpar udgaaende Lapper (se Fig. 2 og 3).

Bagkroppens Operculum (se Fig. 2 og 3) er særdeles stort og hvælvet, indtagende Størsteparten af Bagkropssegmentets Underside. Det viser langs ad Midten en stump Kjøl, der i den ydre Del spalter sig i 2 divergerende Grene. Kanterne er ganske glatte.

De under Operculet liggende Buglemmer er alle ægte respiratoriske og af en særdeles blød og tynder Structur. Det 1ste Par (Fig. 20) er tydelig tvegrenet, med den indre Gren dannende en bred afrundet i 2 utydelige Segmenter afdelt Plade, den ydre ganske smal, cylindrisk og noget krummet samt bestaaende af 2 tydelige i sin ydre Kant fint ciliered Led. De øvrige Par synes kun at danne enkle, uregelmæssigt foldede Plader (Fig. 21).

Halevedhængene (Fig. 22), der træder frem til hver Side af den stumpe Fremragning, som Bagkropssegmentet danner bagtil i Midten, er særdeles smaa, men tydeligt tvegrenede, med den indre Gren omtrent af Basaldelens Længde, den ydre betydelig mindre. Begge Grene er af lineær Form og forsynede med nogle meget smaa og fine Børster.

Hannerne skiller sig ikke i sit ydre meget væsentligt fra Hunnerne, men kjendes dog let ved 1ste Par Foleres stærkere Udvikling og ved den eiendommelige Bygning af Bagkroppens Operculum.

1ste Par Folere (Fig. 23) er kjendeligt længere end hos Hunnen, hvilket skyldes den langt stærkere Udvikling af Svøben, der er forholdsvis mere end dobbelt saa lang og sammensat af et særdeles stort Antal af Led.

Bagkroppens Operkulum (se Fig. 24) er, som hos de til foregaaende Familie hørende Former delt i 4 særskilte Plader, 2 ganske smale i Midten og 2 bredere Sideplader. De mediane Plader, der ligger i umiddelbar Contact med hinanden, er af lineær Form og ender hver med 2 triangulære Spidser. Sidepladerne er af halvoval Form og paa den ydre Side jevnt hvælvede. Paa den indre Side (se Fig. 25) findes nær Enden et eiendommeligt krogformet Appendix, der ved Roden bagtil viser en liden afrundet Lap. Dette Appendix kan bevæges ved særegne Muskler, der tydeligt sees at convergere mod Basis af samme. At vi her har at gjøre med Hjælperedskaber ved Copulationen er vel utvivlsomt; dog er det endnu ikke med Sikkerhed oplyst, hvorledes disse Dele herunder fungerer.

in size, has a regular elliptic shape. Both articulations are very movably connected by an exceedingly narrow stem, which admits of the latter being jerked back toward the former. The terminal claw is very small, styliform, and well-nigh wholly concealed amidst the plumous bristles (see fig. 19) issuing from the last articulation.

The marsupium did not in any of the specimens collected occur fully developed: but the 4 pairs of plates that contribute to its formation were on most however distinctly indicated in the form of small lobes, proceeding from the base of the 4 first pairs of legs (see figs. 2, 3).

The operculum of the abdomen (see figs. 2, 3) is exceedingly large and arcuate, occupying the greater part of the under surface of the abdominal segment. It exhibits along the middle an obtuse carina, which, in its outer part, divides into 2 diverging branches. The edges are quite smooth.

The abdominal limbs, placed underneath the operculum, are all true respiratory organs, exceedingly soft and delicate in structure. The 1st pair (fig. 20) are distinctly biramous, with the inner branch forming a broad, rounded plate, consisting of 2 indistinctly defined segments; the outer is quite narrow, cylindric, and somewhat curved, composed of 2 distinct articulations, ciliated along the outer margin. The remaining pairs would appear to form merely simple, irregular-folded plates (fig. 21).

The caudal appendages (fig. 22), jutting forth on either side of the obtuse projection formed in the middle, posteriorly, by the abdominal segment, are exceedingly small, but distinctly biramous, with the inner branch about of the same length as the basal part, the outer considerably shorter. Both branches are linear in form, and provided with a few exceedingly small and delicate bristles.

The *males* do not differ essentially in their outer habitus from the females, but are nevertheless easily recognized by the fuller development characterizing the 1st pair of antennæ, as also by the peculiar structure of the abdominal operculum.

The 1st pair of antennæ (fig. 33) are appreciably longer than in the female, a character arising from the much fuller development of the flagellum, which is relatively more than double the length, and composed of a very large number of articulations.

The operculum of the abdomen (see fig. 24) is, as in the forms belonging to the preceding family, divided into 4 separate plates, 2 very narrow ones in the middle and 2 broader lateral plates. The median plates, immediately contiguous to each other, are of a linear form, and terminate each in 2 triangular points. The lateral plates are semi-oval, and, on the outer side, uniformly arched. On the inner side of the latter plates (see fig. 25), occurs near the extremity a peculiar, hook-shaped appendix, which, at the base, posteriorly, has a small, rounded lobe. This appendix is movable by means of specially adapted muscles, distinctly seen converging toward its base. That we have here to do with accessory organs of copulation is, I think, unquestionable; though as yet it remains to be shown what particular function the said parts perform in the act.

Farven af saavel Hannen som Hunnen er ensformig lys gulagtig og saa gjennemsigtig at flere af de indre Organer tydeligt skimtes igjennem Huden, navnlig den med morke Contenta fyldte Tarmkanal.

Legemets Længde er indtil 33^{mm}, en i Sammenligning med de ovrige Arter af Slægten aldeles colossal Storrelse. Den overgaar endog i denne Henseende kjendeligt *Munnopsis typica*, der hidtil har været ansect som den mest kjæmpemæssige Form i denne Familie.

Forekomst og Udbredning. Exemplarer af denne anselige Art er under vor Expedition indsamlede paa ikke mindre end 7 forskjellige Stationer. Da imidlertid de stærkt forlængede 2det Par Folere og Gangfodderne er yderst fragile og derfor meget let brækkes, er saagodtsom alle de indsamlede Exemplarer mere eller mindre incomplette. Alene et eneste Individ (det her afbildede) lykkedes det mig, ved at anvende den yderste Forsigtighed, at faa isoleret med samtlige Lemmer i Behold. Af de omtalte Stationer ligger 3 (Stat. 33, 124, 251) i Havet udenfor vore Havbanker, 2 i Havet Vest af Beeren Eiland og de 2 ovrige Nordvest af Spitsbergen; Dybden fra 260 til 658 Favne. Alle Stationer alene med Undtagelse af den nordligste (Stat. 363) tilhorer den kolde Area.

Artens for Tiden bekjendte Udbredningsfelt er herefter det vestlige Afheld mod Nordhavets store Dyb fra den 63de til den 80de Bredegrad. Ifolge Meddelelse fra Dr. Stuxberg forekommer den imidlertid ogsaa i det sibiriske Ishav.

The colour alike of the male and the female is a uniform light-yellow, and so translucent that several of the inner organs can be plainly discerned shining through the skin, in particular the intestinal canal, with its dark contents.

The length of the body reaches 33^{mm}, a truly colossal size compared with the other species of the genus. In this respect it appreciably exceeds even *Munnopsis typica*, hitherto held to be the largest form of the family.

Occurrence and Distribution. — Specimens of this gigantic species were collected on the Norwegian Expedition at not less than 7 different Stations. Meanwhile, the 2nd, greatly produced, pair of antennæ and the equally elongate ambulatory legs being exceedingly fragile, and therefore easily broken, well-nigh all the examples obtained were in a more or less defective state. Only one individual (that represented here) was I enabled, by the most careful handling, to isolate with all its parts intact. Of the said Stations, 3 (Stats. 33, 124, 251) lie off the great outer banks of Norway, 2 in the tract of ocean west of Beeren Eiland, and the 2 others north-west of Spitzbergen. Depth ranging from 260 to 658 fathoms. All the Stations, save the most northerly (Stat. 363), are in the cold area.

Hence, the tract throughout which the species is at present known to be distributed, comprises the western slope shelving down towards the great depths of the Northern Ocean, from the 63rd to the 80th parallel of latitude. According to a communication from Dr. Stuxberg, the form also occurs in the Siberian Polar Sea.

Tribus 5. *Epicarides.*

Bemærkninger. De herhen horende Isopoder har af de fleste Zoologer været stillet sammen med eller ialfald ved Siden af den til Gruppen *Flabellifera* horende Familie *Cymothoidæ*, vel især paa Grund af den overensstemmende parasitiske Levevis. Fritz Müller har imidlertid[1] vist, at de i Virkeligheden i sin Organisation kun viser meget liden Overensstemmelse med hin Familie, hvorimod han er mere tilboielig til at stille dem nærmest ved de saakaldte Landisopoder *(Oniscoiderne)*. Rigtigst synes det mig af mange Grunde at være at henføre de her omhandlede Isopoder til en egen større Afdeling eller Tribus, for hvilken den af Milne Edwards foreslaaede Benævnelse, *Epicarides*, bor bibeholdes.

[1] Bruchstücke zur Naturgeschichte der Bopyriden. (Jenaische Zeitschrift, Bd. VI.

Tribus 5. *Epicarides.*

Remarks. — The Isopods belonging to this division have by most zoologists been classed either under, or at least in immediate connexion with, the family *Cymothoidæ*, belonging to the group *Flabellifera*, chiefly, one would imagine, from the parasitic nature common to the said forms. Meanwhile, Fritz Müller[1] has shown, that, in their organisation, they exhibit but very slight agreement with that family; indeed, he is rather disposed to regard them as approximating closest the so-called land-Isopods *(Oniscoida)*. For divers reasons, however, the Isopods treated of here can, in my judgment, lay claim to be classed within a separate comprehensive division, or tribe, for which the designation, *Epicarides*, suggested by Milne Edwards, should certainly be retained.

[1] Bruchstücke zur Naturgeschichte der Bopyriden (Jenaische Zeitschrift, Bd. VI.

Hos inger Isopoder fremtræder Parasitismen stærkere udpræget end hos disse eiendommelige Former, hvilket har tilfølge en regressiv Udvikling af Hunnerne, ofte ledsaget af en paafaldende Assymetri. Hannerne er ligesom hos de ægte parasitiske Copepoder meget ulig Hunnerne, særdeles smaa og lever fastklamrede til disse. Alle hidtil bekjendte Former er Parasiter paa eller i forskjellige Crustaceer. Som eiendommelige Typer, der vel maa ansees som repræsenterende ligesaamange distincte Familier, kan nævnes Slægterne *Bopyrus*, *Dajus*, *Entoniscus* og *Cryptoniscus*.

In none of the Isopods is parasitism more decidedly prominent than in these peculiar forms, which occasions a regressive development of the females, frequently accompanied by a striking assymetry. The males are, as in the true parasitic Copepods, very unlike the females, exceedingly small, and pass their life firmly attached to the latter. All hitherto known forms exist as parasites, either on or in different Crustaceans. As characteristic types, that in all probability must be regarded as representing as many distinct families, can be mentioned the genera *Bopyrus*, *Dajus*, *Entoniscus*, and *Cryptoniscus*.

Fam. **Dajidæ.**

Gen. **Notophryxus**, n. gen.

Slægtscharacteristik. Hunnens Legeme symetriskt, noget nedtrykt, kun tydeligt segmenteret i Midten af Rygsiden; Sidedelene udvidede og opsvulmede. Hovedet mere eller mindre fremspringende, ikke tydeligt begrændset bagtil. Bagkroppen uleddet, pladeformig, nedentil concav. Folerne rudimentære, utydeligt leddede; 2det Par coniskt tilspidsede i Enden. Fødderne sammentrængte paa et meget lidet Rum helt fortil, til hver Side af Mundregionen, kun tilstede i 5 Par, alle af ens Udseende og forestillende ufuldstændigt leddede Klamreorganer. Ingen tydeligt udviklede Æggeplader. Bagkroppen uden Lemmer eller andre Vedhæng.

Hannen af et lignende Udseende som hos Slægten *Phryxus*, med tydeligt segmenteret Legeme, 7 Par Klamrefødder og uleddet Bagkrop.

Parasiter paa lavere *Podophthalmer* (Schizopoder).

Bemærkninger. Ved Hunnens fuldkommen symetriske Legeme og Mangelen af de 2 Par bagerste Forkropslemmer stemmer denne Slægt overens med Kröyers Slægt *Dajus* (*Leptophryxus* Buchholz), men skiller sig blandt andet meget væsentligt ved Bagkroppens forskjellige Bygning og ved Mangelen af egentlige Æggeplader. Arterne lever ligesom *Dajus mysidis* parasitisk paa lavere *Podophthalmer* (Schizopoder); men medens hin Form altid findes indsluttet i Klækkehulen hos Mysider, er de herhen hørende Arter fæstede frit til Rygsiden af deres Værter (heraf Slægtsbenævnelsen).

Foruden den nedenfor nærmere beskrevne Form, har eg endnu ved vore Kyster fundet 2 andre distincte Arter.

Fam. **Dajidæ.**

Gen. **Notophryxus**, n. gen.

Generic Character. — Body of female symmetrical, somewhat depressed, distinctly segmented in the middle of the dorsal side only; lateral parts dilated and tumescent. Head more or less projecting, not distinctly defined posteriorly. Abdomen non-articulate, lamelliform, concave below. Antennæ rudimentary, indistinctly articulate; 2nd pair conically pointed at extremity. Legs, of which occur but 5 pairs, crowded together over a very confined space, on either side of the buccal region, all uniform in appearance and representing incompletely articulated clasping organs. No distinctly developed incubatory plates. Posterior division of body without any kind of appendages whatever.

The male of a similar appearance to the male in the genus *Phryxus*, with a distinctly segmented body, 7 pairs of clasping legs, and a non-articulate abdomen.

Parasites, on lower organized *Podophthalmata* (Schizopods).

Remarks. — In the strictly symmetrical body of the female and the absence of the 2 posterior pairs of legs, this genus agrees with Kröyer's genus *Dajus* (*Leptophryxus*, Buchholz), but differs essentially, among other characteristics, in the deviating structure of the abdomen and the absence of true incubatory plates. The species live parasitically, as does *Dajus mysidis*, on lower organized *Podophthalmata* (Schizopods); but, while the former are invariably found enclosed within the incubatory cavity of Mysidians, the species belonging to the genus treated of here live freely attached to the dorsal side of the animal on which they subsist (hence the generic designation).

Exclusive of the form described more particularly below, I have taken off our coasts 2 other distinct species,

hvoraf den ene *(N. peltatus)* lever fastheftet til Forkroppen hos Arter af Slægten *Erythrops*, medens den anden *(N. ovatus)* findes fastheftet til Rygsiden af 3die Bagkropssegment hos en anden Mysideform, nemlig *Amblyops abbreviata*, G. O. Sars.

one of which *(N. peltatus)* is found affixed to the cephalothorax in species of the genus *Erythrops*, the other *(N. ovatus)* occurring attached to the dorsal side of the 3rd abdominal segment in another Mysidian, viz. *Amblyops abbreviata*, G. O. Sars.

30. Notophryxus clypeatus, G. O. Sars, n. sp.

(Pl. XI. Fig. 30—33).

Leptophryxus clypeatus, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 11.

Artscharacteristik. Hunnens Legeme af aflang oval Form, bredest paa Midten, med Hovedet stærkt fremspringende, koniskt tilløbende og i Enden afstumpet. Fire tydeligt markerede Tværsuturer i Midten af Rygfladen. Bagkroppen skjoldformig, dannende en bred halvcirkelformig Plade. Hannen fæstet under Haleskjoldet. Farven blegt gulfarvet. Længden af Hunnen 5^{mm}. Parasit paa *Pseudomma roseum*.

Findested. Stat. 31.

Bemærkninger. Ved den stærkt udviklede skjoldformige Haleplade og det fortil koniskt tilløbende Legeme er denne Art let kjendelig fra de 2 øvrige Arter af Slægten, med hvilke den forøvrigt i alle væsentlige Characterer stemmer nøie overens.

Beskrivelse af Hunnen. Legemet er (se Pl. XI. Fig. 30 og 31), i Modsætning til de fleste øvrige *Epicarider*, fuldkommen symetriskt, noget nedtrykt og af aflang oval eller næsten tendannet Form, med den største Brede, der falder over Midten, noget større end den halve Længde. Fortil afsmalnes Legemet ganske jevnt og ender med en noget fremspringende, i Enden afstumpet eller svagt indbugtet Pandedel, uden at forøvrigt nogen tydelig Grændse mellem Hoved og Forkrop er antydet.

Rygsiden er i Midten noget hvælvet og viser her 4 tydeligt markerede Tværsuturer, der antyder Begrændsningen af ligemange Forkropssegmenter. Disse Segmenter er til Siderne ved tydelige Linier begrændsede fra de laterale Dele af Legemet, der ligesom de ventrale ingensomhelst Segmentering frembyder, men tilsammen danner en tyndhudet voluminøs Beholder, hvori de overordentlig talrige smaa Æg er indsluttede. Denne Beholder eller Marsupium, der indtager Størsteparten af Legemets Ventralside og ogsaa, som allerede bemærket, delvis rager frem til hver Side af Forkroppen, er nedentil i Midten noget affladet eller endog svagt indhulet. Den sammensættes ikke af nogen

30. Notophryxus clypeatus, G. O. Sars, n. sp.

(Pl. XI. figs. 30—33).

Leptophryxus clypeatus, G. O. Sars, Crustacea et Pycnogonida nova etc., No. 11.

Specific Character. — Body of female oblongo-oval, broadest in the middle, with head greatly projecting, conically extended, and obtuse at the extremity. Four distinctly marked transverse sutures in the middle of the dorsal face. Abdomen scutiform, constituting a broad, semicircular plate. Male affixed under the caudal shield. Colour pale-yellowish. Length of female 5^{mm}. Parasitical on *Pseudomma roseum*.

Locality. — Stat. 31.

Remarks. — By the greatly developed caudal plate and the body conically protending throughout the anterior part, this species is easily distinguished from the 2 other forms of the genus, with which, as regards all essential characters, it otherwise exhibits close agreement.

Description of the Female. — The body (see Pl. XI, figs. 30, 31), contrary to what is the case with most other *Epicaridæ*, perfectly symmetrical, somewhat depressed, and oblongo-oval in form, or almost fusiform, with the greatest breadth, which occurs across the middle, slightly exceeding half the length. Uniformly tapering throughout its anterior part, the body terminates in a somewhat projecting frontal part, obtuse or faintly incurved at the extremity, without however, for the rest, exhibiting any well-defined boundary between the head and the part succeeding it.

The dorsal face is somewhat arcuate across the middle, with 4 distinctly marked transverse sutures, that indicate the limits of as many segments. These segments are bounded at the sides, by distinct lines, from the lateral parts of the body, which, like the ventral, exhibit no segmentation whatever, but form conjointly a thin-skinned, capacious receptacle, in which the remarkably numerous minute ova lie enclosed. This receptacle, or marsupium, which occupies the greater part of the ventral side of the body, and, as previously stated, projects partially forward on either side of the body, is somewhat applanated below in the middle, or even slightly hollowed. It is not composed of distinctly

tydeligt udviklede Æggeplader saaledes som hos de fleste øvrige Epicarider; men synes alene at begrændses af Kroppens Hud, som her er tyndere og mere gjennemsigtig.

Bagkroppen er af et meget eiendommeligt og fra de øvrige *Bopyrider* forskjelligt Udseende. Den dannes kun af et enkelt Segment, der har Formen af en meget stor og bred, med en halvcirkelformig bøiet Rand endende skjoldformig Plade, der rager frem bagtil og delvis hvælver sig over Enden af Æggeposen.

Dyrets Lemmer er som hos andre *Epicarider* af et meget ufuldkomment Udseende og viser kun en høist utydelig Segmentering. De er alle sammentrængte paa et forholdsvis meget lidet Rum under den forreste Del af Legemet, hvor de tilsammen danner et lidet næsten firkantet, i Midten noget fordybet Felt, der fortil begrændses af en temmelig stor halvmaaneformig Pandeplade (se Fig. 31 og 32). Tydningen af disse Lemmer er ikke vanskelig.

Fortil bemærkes i Midtlinien 2 brede, indad sammenstodende Plader af triangulær Form, med det ydre Hjørne noget udtrukket og fremspringende. Dette er aabenbart 1ste Par Følere.

Til Siderne af disse ligger et Par andre noget forskjelligt formede Lemmer, der forestiller 2det Par Følere. De er stærkt Sformigt bugtede og udtrukne i en konisk, frit fremragende og udadrettet Spids, paa hvilken det forekom mig der sad et Par rudimentære Børster.

Bagenfor Følerne og indtagende Midten af den ovenomtalte Area ligger en aflang trekantet Forhøining, der synes at forestille de til et Slags Sugeapparat omformede Munddele, hvis noiere Bygning dog ikke nærmere kunde undersøges.

Til hver Side af denne Mundarea sees 5 rundagtige Forhøininger, hvoraf dog den forreste ikke er tydeligt sondret fra Pandepladen. Til disse Forhøininger er fæstet 5 Par temmelig ufuldstændigt udviklede Klamrefødder. Disse er alle af ens Udseende, ganske korte og rettede skraat indad mod Mundregionen, med den noget udvidede og med en hageformig Klo bevæbnede Ende noget tilbageboiet og fremspringende nedad.

Af andre Lemmer end de ovenomtalte findes intet Spor, idet saavel de 2 sidste Forkropssegmenter som Bagkroppen ganske mangler saadanne.

Hannen (Fig. 33), der fandtes fastklamret til Hunnens Bugside indunder Basis af Halepladen (se Fig. 31), er meget liden og af et lignende Udseende som Hannen af Phryxusarterne. Legemet er temmelig smalt og tydeligt segmenteret, med dybe Indsnøringer mellem Segmenterne. Det affladede, næsten halvcirkelformige Hoved bærer paa sin Underside 2 Par Følere, hvoraf det 2det Par er længst og traadformigt, samt et kort Sugerør. De 7 Forkropssegmenter er alle af ens Størrelse og Udseende, og hvert forsynet med et Par Klamrefødder af samme Beskaffenhed som hos Hunnen. Bagkroppen dannes af et enkelt tem-

developed incubatory plates, as in most of the other *Epicaridæ*, but would appear to be exclusively bounded by the skin of the body, which, throughout this part, is thinner and more translucent.

The posterior division of the body exhibits a most peculiar appearance, differing widely from that observed in all other *Bopyridæ*. It consists of but one segment, that has the shape of a large and broad scutiform plate, jutting out posteriorly and in part arching over the extremity of the incubatory pouch.

The appendages of the animal exhibit, as in other *Epicaridæ*, a very rudimentary appearance, their segmentation being exceedingly indistinct. They are all crowded together over a relatively very limited space, beneath the foremost part of the body, forming there conjointly a small, well-nigh quadrangular, and in the middle somewhat depressed area, bounded anteriorly by a rather large, crescent-shaped frontal plate (see figs. 31, 32). The explication of these appendages is not difficult.

Anteriorly, on the medial line, are observed 2 broad plates, of triangular form, meeting together inwards, with the outer angle somewhat produced and projecting. These are evidently the 1st pair of antennæ.

On either side of the plates, occur a pair of somewhat differently formed appendages, representing the 2nd pair of antennæ. These are prominently flexuous, in the shape of the letter S, and produced to a conical, freely projecting, and outward-directed point, on which could be discerned a couple of rudimentary bristles.

Posterior to the antennæ, and occupying the middle of the forementioned area, is seen an oblong, triangular prominence, representing, it would seem, the oral appendices transformed into a kind of suction-apparatus, the structure of which could not however be closely examined.

On either side of this buccal area, occur 5 roundish prominences, of which, however, the foremost is not distinctly separated from the frontal plate. To these prominences are attached 5 pairs of rather incompletely developed clasping legs. These are all of a uniform appearance, quite short, and directed obliquely inward, towards the oral region, and have the somewhat dilated extremity armed with a hook-shaped claw, bent slightly back, and projecting downward.

Of other appendages, apart from those specified above, no trace can be detected, both the last 2 segments and the posterior division of the body having none whatever.

The *Male* (Fig. 33), found clasped to the ventral side of the female, beneath the base of the caudal plate (see fig. 31), is exceedingly small, and similar in appearance to the male in the *Phryxus* species. The body comparatively slender and distinctly segmented, with deep instrictions between the segments. The bevelled, almost semicircular head bears on its under surface 2 pairs of antennæ, of which the 2nd pair is the longer, and filiform, together with a short suction-tube. The 7 segments belonging to the anterior division are all of them uniform in size and appearance, and each furnished with a pair of

melig stort, i Enden noget skraat afkuttet Segment uden Spor af Vedhæng.

Farven er saavel hos Hunnen som Hannen blegt gulagtig; de i Hunnens Æggesæk indeholdte Æg hvidagtige med et svagt rosenfarvet Skjær.

Længden af Hunnen er 5^{mm}; af Hannen neppe mere end 1^{mm}.

Forekomst og Udbredning. Et enkelt Exemplar af denne distincte Art, tilligemed den tilhørende Han, blev under Expeditionens 1ste Togt taget i Havet udenfor Storeggen (Stat. 31) fra et Dyb af 417 Favne. Exemplaret fandtes fastheftet til Rygsiden af Forkroppen hos et usædvanlig stort Individ af *Pseudomma roseum*.

Om Artens Udbredning kan selvfølgelig intet med Bestemthed anføres. Da imidlertid den ovenomtalte Station tilhører den kolde Area, er det rimeligt, at den er en arktisk Form.

clasping legs, of the same character as in the female. The posterior division of the body consists of a single, rather large segment, somewhat obliquely truncate at the extremity, without a trace of appendages.

Colour, alike in the female and the male, a pale yellow; the eggs in the incubatory cavity of the female whitish, with a faint rosy tinge.

Length of female 5^{mm}; of male scarcely more than 1^{mm}.

Occurrence and Distribution. — A single specimen of this distinct species, together with the male, was brought up, on the first cruise of the Expedition, in the open sea, off the Storeggen bank (Stat. 31), from a depth of 417 fathoms. This specimen was found attached to the dorsal side of the anterior division of the body of an remarkably large example of *Pseudomma roseum*.

Respecting the distribution of the species, nothing can of course be stated with certainty. Meanwhile, as the Station at which the animal was taken lies in the cold area, it is most probably an Arctic form.

Amphipoda.

Tribus 1. *Gammarina.*

Fam. 1. Lysianassidæ.

Gen. 1. **Socarnes,**[1] Boeck. 1870.

Crustacea amphipoda borealia et arctica.

31. Socarnes bidenticulatus. (Sp. Bate).

(Pl. XII. Fig. 1).

Lysianassa bidenticulata, Sp. Bate. Ann. & Mag. Nat. Hist. Ser. 3, T. 1, pg. 362.

Lysianassa magax, Sp. Bate. Cat. Amphip. Brit. Mus., pg. 65, Pl. X, fig. 3, (non Phipps).

Lysianassa Vahlii, Goës, Crust. amphip. Spitsb. No. 2 (ex parte).

Anonyx bidenticulatus, Miers. Spitsb. Crust. Ann. & Mag. Nat. Hist. 1877, pg. 136.

Artscharacteristik. Legemet ualmindelig høit og noget opsvulmet, med de forreste Epimerer lover dobbelt saa høie som selve Kroppen. Hovedets Sidevinkler tilspid-

[1] Jeg følger her foreløbig den af Boeck foreslaaede Slægtsinddeling, skjøndt jeg er af den Mening, at man ved en nøiere Revision af Familien vil finde det nødvendigt at reducere noget Slægternes Antal.

Amphipoda.

Tribus 1. *Gammarina.*

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Gen. 1. **Socarnes,**[1] Boeck. 1870.

Crustacea amphipoda borealia et arctica.

31. Socarnes bidenticulatus, (Sp. Bate).

(Pl. XII. fig. 1).

Lysianassa bidenticulata, Sp. Bate. Ann. & Mag. Nat. Hist., Ser. 3, Vol. 1, p. 362.

Lysianassa magax, Sp. Bate. Cat. Amphip. Brit. Mus. p. 65, Pl. X, fig. 3 (non Phipps).

Lysianassa Vahlii, Goës, Crust. amphip. Spitsb. No. 2 (ex parte).

Anonyx bidenticulatus, Miers. Spitsb. Crust. Ann. & Mag. Nat. Hist., 1877, p. 136.

Specific Character. — Body remarkably high and somewhat swollen, with anterior epimera more than double the height of body. Lateral angles of head acute, projecting

[1] I retain for the present the generic subdivision proposed by Boeck, though, in my judgment, a closer revision of the family will show the need of slightly reducing the number of genera.

sede, men lidet fremspringende. 3die Bagkropssegments Sideplader bagtil gaaende ud i 2 triangulære ved en Udrandning skilte Fortsatser, den overste storst. Øinene smalt nyreformige, eller næsten lineære, sortbrune. 1ste Par Følere med kort og tykt Skaft. Bisvøben forlænget, bestaaende af 9 Led. De 3 bagre Fodpar forholdsvis korte og robuste med bredt, næsten cirkelformigt Hofteled. Sidste Par Halefødder forholdsvis korte, neppe overragende det foregaaende Par. Halevedhænget klovet til Midten. Længden indtil 36^{mm}.

Findested. Station 366.

Bemærkninger. Denne Form staar vistnok meget nær Krøyers *Anonyx Vahlii*, hvortil Goës henfører den, men er dog utvivlsomt artsforskjellig. Foruden ved sin langt betydeligere Størrelse og mere undersætsige Kropsform, kjendes den meget let i alle Aldre ved den eiendommelige Form af 3die Bagkropssegments Sideplader, der ikke som hos hin Art danner bagtil en jevnt tilrundet Udbugtning, men gaar ud i 2 spidse Takker, hvorfra ogsaa den af Sp. Bate foreslaaede Artsbenævnelse er hentet.

Beskrivelse af Hunnen. Legemet er (se Pl. XII, Fig. 1) i Sammenligning med den anden Art af temmelig plump Form, med jevnt hvælvet Rygflade og ualmindelig høie Epimerer.

Hovedet er forholdsvis lidet, betydelig kortere end 1ste Forkropssegment og har Sidevinklerne tilspidsede, skjøndt ikke meget fremspringende. En stor Del af dets Sider tilligemed samtlige Munddele dækkes fuldstændigt af 1ste Par Epimerer.

Af Forkropssegmenterne er det 1ste noget længere end de nærmest følgende; de 2 sidste er atter noget kortere end det foregaaende. De 4 forreste Par Epimerer er over dobbelt saa høie som selve Kroppen og synes forholdsvis smale, idet de gjensidigt for en stor Del dækker hinanden. Det sidste af dem er som sædvanlig bagtil stærkt udrandet, for at kunne optage det følgende Par, og er nedenfor Udrandningen uddraget i et skarpt Hjørne. 5te Par Epimerer er af uregelmæssig firkantet Form og noget høiere end bredt; de 2 følgende betydelig mindre.

De 3 forreste Bagkropssegmenter har Sidepladerne brede og dybe. Paa 3die Segment danner de bagtil 2 skarpe Hjørner, hvoraf det nedre forestiller det egentlige Sidehjørne, medens det øvre betydelig stærkere fremspringende danner en særegen triangulær Fortsats. Imellem begge er der en jevn Udrandning. De følgende Bagkropssegmenter er oventil jevnt hvælvede, uden Fortsatser eller Knuder.

however but slightly. Lateral plates of 3rd abdominal segment jutting out posteriorly in the form of 2 triangular projections, separated by a distinct emargination, the upper one the larger. Eyes narrow, reniform, or wellnigh linear, dark-brown in colour. First pair of antennæ with short and thick peduncle; secondary flagellum elongate, consisting of 9 articulations. The 3 posterior pairs of legs short and robust, with basal joint broad, almost circular. Last pair of caudal stylets comparatively short, projecting but very little, if at all, over the preceding pair. Telson cleft to the middle. Length reaching 36^{mm}.

Locality. — Stat. 366.

Remarks. — This form does indeed approximate very closely Krøyer's *Anonyx Vahlii*, to which Goës has referred it, but is nevertheless without a doubt specifically distinct. Let alone its far greater size and more thickset body, the species may be easily recognized, in all stages of development, by the peculiar form distinguishing the lateral plates of the 3rd abdominal segment, which do not, as in the forementioned species, exhibit behind an evenly rounded curve, but jut forth as 2 acute teeth, a character indeed from which the specific appellation suggested by Sp. Bate is taken.

Description of the Female. — The body (see Pl. XII, fig. 1), as compared with that in the other species, rather clumsy in form, with a equably arched dorsal surface and remarkably deep epimera.

The head comparatively small, much shorter than the 1st thoracic segment, and with the lateral angles pointed, though not to any great extent projecting. A very considerable portion of the sides, as also the oral appendages, are entirely covered by the 1st pair of epimera.

Of the thoracic segments, the 1st is somewhat longer than those immediately succeeding it; the last 2 being also a trifle shorter than the preceding. The 4 anterior pairs of epimera are upwards of double the height attained by the body itself, and apparently slender, covering one another, as they do, to a great extent. The last of these pairs are as usual very considerably emarginate posteriorly, to serve for the reception of the succeeding pair, appearing produced below, as an acute angle. The 5th pair of epimera have an irregular, quadrate form, their height slightly exceeding their breadth: the 2 succeeding pairs are considerably smaller.

The 3 anterior abdominal segments have the lateral plates broad and deep. On the 3rd segment, they constitute posteriorly 2 sharp corners, of which the lower represents the true lateral corner, whereas the upper, jutting forth much more prominently, constitutes a characteristic triangular projection. Between the two occurs a uniform emargination. The succeeding abdominal segments are equably arched above, without either projection or protuberance.

Øinene er meget smalt nyreformige eller næsten lineære og strækker sig lodret ned over Siderne af Hovedet i kort Afstand fra den forreste Rand. Deres Pigment er af en dyb sortebrun Farve.

1ste Par Følere er omtrent af samme Længde som Hovedet og 1ste Forkropssegment tilsammen. Skaftet er kort og tykt, med 1ste Led meget stort, de 2 følgende særdeles korte. Svøben er næsten dobbelt saa lang som Skaftet og sammensat af cirka 18 Led, hvoraf det 1ste er størst, men neppe længere end de 2 følgende tilsammen. Bisvøben er stærkt forlænget, mere end halvt saa lang som selve Svøben og sammensat af 9 Led.

2det Par Følere er neppe længere end 1ste Par, men meget tyndere, med Svøben bestaaende af 17 Led.

Føddernes Bygning synes i alt væsentligt at stemme overens med samme hos *S. Vahlii*; dog er de 3 bagerste Par forholdsvis noget mere robuste, med særdeles bredt, næsten cirkelformigt Hofteled.

De bagerste Par Halefødder rækker neppe udover det foregaaende Par og har Grenene kort lancetformige, uden tydelige Børster.

Halevedhænget er triangulært og klovet lige til Midten.

Farven hos det levende Dyr blev ikke nøiere noteret. Hos den nærstaaende *S. Vahlii* er den meget vakker og iøinefaldende.

Længden af det største af de indsamlede Exemplarer er 36^{mm}, og den hører saaledes til de største bekjendte *Amphipoder*.

Forekomst og Udbredning. 2 Exemplarer af denne characteristiske Art erholdtes under Expeditionens sidste Togt i den af iskoldt Vand opfyldte Magdalenebay ved Nordvestpynten af Spitsbergen fra et Dyb af 40—60 Favne.

Arten er tidligere observeret forunden ved Spitsbergen ogsaa ved Grønland, hvorimod den endnu ikke er antruffen ved vore Kyster, hvor derimod den anden Art *S. Vahlii* ikke er sjelden. Den er derfor uden Tvivl at betragte som en ægte arktisk eller høinordisk Form.

The eyes are very narrow, reniform, or well-nigh linear, extending perpendicularly down the sides of the head, at a short distance from the anterior margin. Their pigment is of a deep dark-brown.

The 1st pair of antennæ about equal in length the head and the 1st thoracic segment taken together. The peduncle is short and thick, with the 1st joint very large, the 2 succeeding joints extremely short. The flagellum is almost twice as long as the peduncle, and composed of 18 articulations, or thereabouts, of which the first is the largest, but hardly exceeds in length the 2 succeeding ones, taken together. The secondary flagellum is greatly produced, more than half as long as the flagellum itself, and consists of 9 articulations.

The 2nd pair of antennæ are scarcely at all longer than the 1st pair, but much more slender, with the flagellum composed of 17 articulations.

The structure of the legs would appear in all essential characteristics to agree with that in *S. Vahlii*; the 3 posterior pairs, however, are somewhat stouter, with the basal joint exceedingly broad, almost circular.

The posterior pair of caudal stylets scarcely reach beyond the preceding pair, and have their branches short-lanceolate, without distinctly developed bristles.

The telson is triangular, and cleft to the middle.

The colour of the living animal was not closely observed. In the approximating species, *S. Vahlii*, it is very beautiful and conspicuous.

Length of the largest specimen obtained 36^{mm}; hence this form ranks among the largest known *Amphipods*.

Occurrence and Distribution. — Two individuals of this characteristic species were obtained, on the last cruise of the Expedition, in Magdalena Bay, an arm of the sea filled with ice-cold water, at the north-western extremity of Spitzbergen, from a depth of 40—60 fathoms.

The species had been previously observed, exclusive of Spitzbergen, off the shores of Greenland, whereas it is not yet known to have been met with at any point on the Norwegian coast, a region in which the allied species *S. Vahlii*, is by no means rare. Hence the animal must unquestionably be regarded as a true Arctic form.

Gen. 2. **Hippomedon**, Boeck. 1870.

Crust. amphip. bor. et arctica.

32. Hippomedon Holbölli, (Kröyer) var.

(Pl. XII. Fig. 2).

Hippomedon abyssi, G. O. Sars. Prodromus descriptionis Crust. etc., No. 94 (non Goës).

Bemærkninger. Ved nøiere Undersøgelse har jeg fundet, at denne Form ikke som jeg for troede er Goës's *Lysianassa abyssi*, men kun en eiendommelig Dybvandsvarietet af Kröyer's Art. Den skiller sig fra den sædvanlige ved vore Kyster forekommende Form ved betydeligere Størrelse, noget mindre fortykket Skaft paa 1ste Par Følere og ved den fuldstændige Mangel af Øine. Hos den paa grundt Vand forekommende Form er disse paa friske Exemplarer meget tydelige og af en smuk carmosinrød Farve, men viser sig dog ved nærmere Undersøgelse ogsaa her af en ufuldkommen Bygning, idet Lindser eller andre lysbrydende Medier ganske mangler, hvorfor de ogsaa i Regelen ganske forsvinder paa Spiritusexemplarer. Hos den her omhandlede Dybvandsform var derimod ogsaa hos de friskt indfangede Exemplarer ethvert Spor af Øiepigment borte, og hele Dyret af en ensformig hvidagtig Farve.

Forekomst. Vi har taget denne eiendommelige Varietet paa 4 forskjellige Stationer (St. 40, 124, 200, 248), alle tilhørende den kolde Area; Dybden fra 350 til 1215 Favne.

Gen. 2. **Hippomedon**, Boeck, 1870.

Crust. amphip. bor. et arctica.

32. Hippomedon Holbölli, (Kroyer) var.

(Pl. XII, fig. 2).

Hippomedon abyssi, G. O. Sars. Prodromus descriptionis Crust., etc., No. 94 (non Goës).

Remarks. — A closer examination has convinced me that the present form is not, as I formerly opined, Goës's *Lysianassa abyssi*, but simply a peculiar deep-sea variety of Kröyer's species. It differs from the form usually occurring off the Norwegian coast by its much larger size, the less inspissated peduncle on the 1st pair of antennæ, and by the total want of eyes. The form inhabiting shallow water has the latter organs, in fresh specimens, exceedingly distinct and of a beautiful crimson colour, but on closer examination, they exhibit, in this form too, an incomplete structure, since no trace exists either of lenses or other refracting media; and hence, as a rule, they entirely disappear in spirit-specimens. In the deep-sea form treated of here, not a trace of ocular pigment could, on the other hand, be detected; the animal was everywhere uniform whitish.

Occurrence. — We took this characteristic variety at as many as 4 different Stations (Stats. 40, 124, 200, 248), all in the cold area; depth ranging from 350 to 1215 fathoms.

Gen. 3. **Anonyx**, Kröyer, 1883.

Grønlands Amphipoder.

33. Anonyx calcaratus, G. O. Sars, n. sp.

(Pl. XII. Fig. 3, 3 *a—m*).

Anonyx (Hippomedon) calcaratus, G. O. Sars, Crust. & Pycnogonida nova etc., No. 16.

Artscharacteristik. Legemet sammentrykt fra Siderne med temmelig høie Epimerer. Hovedets Sidevinkler stærkt uddragne og tilspidsede. 3die Bagkropssegments Sideplader bagtil udtrukne i en usædvanlig lang og spids skraat opadrettet dolkformig Fortsats. Ingen tydelige Øine. Følerne af ens Længde; 1ste Par med Skaftets 1ste Led temmelig forkrøget. Svøben neppe længere end Skaftet. Bisvøben liden, 3-leddet. 1ste Fodpar med sidste Led ufuldstændigt subcheliformt, afsmalnende mod Enden og længere end det

Gen. 3. **Anonyx**, Kröyer, 1883.

Gronlands Amphipoder.

33. Anonyx calcaratus, G. O. Sars, n. sp.

(Pl. XII, fig. 3, 3 *a—m*).

Anonyx (Hippomedon) calcaratus, G. O. Sars, Crust. & Pycnogonida nova etc., No. 16.

Specific Character. — Body compressed at the sides, with rather deep epimera. Lateral angles of head greatly produced, and pointed. Lateral plates of 3rd abdominal segment jutting out behind as a remarkably long and acute dagger-shaped projection, directed obliquely upward. No distinct eyes. Antennæ uniform in length. First pair with 1st joint of peduncle rather elongate, flagellum scarcely at all longer than peduncle. Secondary flagellum small, tri-articulate. First pair of legs with last joint imperfectly

foregaaende. Endekloen paa 3die og 4de Par usædvanlig tyk, dolkformig, næsten lige. Sidste Fodpar med Hofteleddet bredt, pladeformigt og i det nedre bagre Hjorne uddraget til en skarp bagudrettet Fortsats. Halevedhænget dobbelt saa langt som bredt og næsten lige til Roden spaltet. Farven hvidagtig. Længden 8^{mm}.

Findesteder. Stat. 240, 303, 312.

Bemærkninger. Paa Grund af en vis habituel Lighed var jeg i Begyndelsen tilboielig til at henføre denne Art til Boeck's Slægt *Hippomedon*, men finder det nu rigtigere at rangere den under Slægten *Anonyx* i den Begrændsning, hvori denne Slægt af Boeck tages. Af de tidligere bekjendte *Anonyx*-Arter kommer den utvivlsomt nærmest *A. pumilus* Lilljeborg, men kjendes let ved de betydelig stærkere uddragne bagre Sidehjørner paa 3die Bagkropssegment samt ved den eiendommelige sporeformige Fortsats paa sidste Fodpars Hofteled, hvilken sidste Character har givet Anledning til Artsbenævnelsen. I 1ste Fodpars ufuldkommen subcheliforme Bygning skiller den sig fra alle øvrige Arter af Slægten og stemmer i denne Henseende mere overens med Slægterne *Lysianassa* og *Socarnes*.

Beskrivelse af Hunnen. Legemet er (se Pl. XII, Fig. 3) af mindre undersætsig Form og temmelig stærkt sammentrykt fra Siderne, med temmelig høie Epimerer.

Hovedet er kjendeligt længere end 1ste Forkropssegment og viser sig i Midten mellem Roden af 1ste Par Følere noget fremspringende. Sidehjørnerne er udtrukne i en skarp fortilrettet Spids.

De 4 forreste Par Epimerer er temmelig smale og dobbelt saa høie som selve Kroppen. Det 4de er bagtil noget udrandet og nedenfor Udrandningen afstumpet. 5te Par er noget bredere end høit og af uregelmæssig afrundet Form.

3die Bagkropssegment har Sidepladerne bagtil udtrukne i en usædvanlig stor dolkformig Fortsats, der er noget skraat opadrettet og rager op over Rygsiden af det bagerste Parti, naar dette er indbøiet. De 3 sidste Bagkropssegmenter er forholdsvis korte og oventil jevnt hvælvede uden knudeformige Fremspring.

Egentlige Øine fattes. Men indenfor Hovedets Sider bemærkedes hos de friskt indfangede Individer et diffust hvidgult Pigment, der vel er at betragte som et Slags Øiepigment, skjøndt dets Fordeling var temmelig uregelmæssig.

1ste Par Følere (Fig. 3 *a*) er omtrent saa lange som Hovedet og de 2 forreste Forkropssegmenter tilsammen. Skaftet er temmelig tykt, dog med 1ste Led forholdsvis mere forlænget end hos de øvrige *Anonyx*-Arter. Svøben er neppe længere end Skaftet og bestaar af 9 Led, hvoraf det 1ste som sædvanlig er størst og omtrent ligt de 2 følsubcheliform, tapering towards the extremity, and longer than the preceding. Terminal claw on 3rd and 4th pairs unusually thick, dagger-shaped, almost straight. Last pair of legs with basal joint broad, lamelliform, and at the lower, posterior corner jutting out as a sharp, backward directed projection. Telson twice as long as broad, and cleft almost to the base. Colour whitish. Length 8^{mm}.

Locality. — Stats. 240, 303, 312.

Remarks. — Misled by a certain habitual likeness, I was at first disposed to refer this species to Boeck's genus *Hippomedon*, but now see fit to establish it under the genus *Anonyx*, in the restricted sense that genus is taken by Boeck. Of the previously known *Anonyx* species, it unquestionably approximates closest *A. pumilus* Lilljeborg, but is easily recognized by the much more produced posterior lateral corners on the 3rd abdominal segment, as also the peculiar spur-like projection on the basal joint of the last pair of legs, a character that suggested the specific designation. In the imperfect subcheliform structure of the 1st pair of legs, it differs from all other known species of the genus, agreeing in this respect rather with the genera *Lysianassa* and *Socarnes*.

Description of the Female. — The body (see Pl. XII, fig. 3) less thickset in form and a good deal compressed from the sides, with rather deep epimera.

The head is appreciably longer than the 1st thoracic segment, somewhat projected in the middle between the bases of the 1st pair of antennæ. The lateral corners produced to a sharp, anteriorly directed point.

The 4 anterior pairs of epimera are rather slender, and twice as high as the body itself. The 4th pair are somewhat emarginate posteriorly, and, below the emargination, obtuse. The 5th pair are somewhat broader than high, and irregularly rounded in form.

The 3rd abdominal segment has the lateral plates drawn out posteriorly as an unusually large, dagger-shaped projection, directed somewhat obliquely upward and extending over the dorsal face of the posterior part, when the latter is bent in. The 3 last abdominal segments are comparatively short, and uniformly arched above, without tuberculiform projections.

Eyes, in a strict sense, entirely wanting. A little within the sides of the head, is observed however in recently taken individuals a diffuse, whitish-yellow pigmentary substance, that must, one would imagine, be regarded, as a kind of ocular pigment, though its distribution was by no means uniform.

The 1st pair of antennæ (fig. 3 *a*) are about as long as the head and the 2 anterior thoracic segments taken together. The peduncle is rather thick, though with the 1st joint relatively more elongate than in any of the other *Anonyx* species. The flagellum is scarcely at all longer than the peduncle, and consists of 9 articulations,

gende tilsammen. Bisvoben er forholdsvis liden og bestaar kun af 3 Led.

2det Par Folere (Fig. 3 *b*) er omtrent af samme Længde som 1ste Par og har Skaftets næstsidste Led længst. Svoben er neppe længere end paa 1ste Par og bestaar omtrent af det samme Antal Led.

Munddelene dækkes ikke ganske til Siderne af 1ste Par Epimerer, men rager for en Del frit frem nedenfor samme (se Fig. 3). I deres Bygning er der kun liden Forskjel at bemærke fra de 2 længere nedenfor beskrevne Arter.

Kindbakkerne (Fig. 3 *c*) har Tyggeknuden vel udviklet og temmelig stærkt fremspringende. Palpen er fæstet i Høide med denne og er temmelig stor, med sidste Led noget udvidet paa Midten og tæt børstebesat.

1ste Par Kjæver (Fig. 3 *d*) har den midterste Green (den egentlige Tyggelap) kraftigt udviklet og bevæbnet med stærke Torner. Den indre Lap er derimod ganske liden og ved Spidsen forsynet med 2 cilierede Børster. Palpen overrager kun lidet den midterste Lap og er paa Enden af det sammentrykte sidste Led forsynet med en Rad af korte Torner.

2det Par Kjæver (Fig. 3 *e*) bestaar som sædvanligt af 2 fra en fælles Basaldel udgaaende Lapper, hvoraf den indre er noget mindre end den ydre, begge tæt børstebesatte.

Kjævefødderne (Fig. 3 *f*) viser den sædvanlige Bygning. Den ydre Tyggelap er temmelig stor, af skjævt oval Form og ved det indre Hjørne forsynet med en Del Torner. Palpens sidste Led er meget smalt, lineært og kun sparsomt børstebesat. Endekloen forholdsvis svag.

1ste Fodpar (Fig. 3 *g*) er temmelig undersætsigt bygget og ufuldkommen subcheliformt ligesom hos Arterne af Slægterne *Lysianassa* og *Socarnes*. Sidste Led eller Haanden er omtrent saa langt som de 2 foregaaende Led tilsammen og afsmalner jevns mod Enden uden at vise nogen tydeligt begrændset Griberand.

2det Fodpar (Fig. 3 *h*) viser den for Familien characteristiske spinkle Bygning og har de 3 ydre Led tæt haarede og Endekloen rudimentær.

De 2 følgende Fodpar (Fig. 3 *i*) udmærker sig især ved den usædvanlige Form af Endekloen. Denne er temmelig tyk, dolkformig og neppe mærkeligt krummet.

De 3 bagre Fodpar (se Fig. 3) har som sædvanligt Hofteleddet pladeformigt udvidet, af oval Form og i den bagre Rand utydeligt saugtakket. Sidste Par (Fig. 3 *k*) udmærker sig dog i høi Grad derved, at det nedre bagre Hjørne af dette Led er udtrukket i en skarp dolkformig og skraat bagudrettet Fortsats, ligesom en Spore.

the 1st being, as usual, largest, and about equal in length to the 2 succeeding ones, taken together. The secondary flagellum is comparatively small, and consists of only 3 articulations.

The 2nd pair of antennæ (fig. 36) are about of the same length as the 1st pair, and have the penultimate joint of the peduncle longest. The flagellum is scarcely at all longer than that on the 1st pair, and consists about of the same number of articulations.

The oral appendages are not quite covered at the sides by the 1st pair of epimera, projecting as they do, in part, freely forward below them (see fig. 3). In structure, they exhibit but little difference from those in the 2 species described below.

The mandibles (fig. 3 *c*) have the molar protuberance well developed and rather prominently projecting. The palp, attached at the same height as the protuberance, is comparatively large, with the last joint somewhat dilated in the middle and densely beset with bristles.

The 1st pair of maxillæ (fig. 3 *d*) have the medial branch (the true masticatory lobe) powerfully developed, and armed with strong spines. The inner lobe, on the other hand, is quite small, and furnished at the point with 2 ciliated bristles. The palp projects but little beyond the medial lobe, and is furnished at the extremity of the compressed terminal joint with a row of short spines.

The 2nd pair of maxillæ (fig. 3 *e*) consist as usual of 2 lobes proceeding from a common basal part, of which the inner is somewhat smaller than the outer — both densely beset with bristles.

The maxillipeds (fig. 3 *f*) exhibit the usual structure. The outer masticatory lobe is rather large, obliquely oval in form, and at the inner corner armed with a number of spines. The last articulation of the palp is exceedingly slender, linear, and but sparingly beset with bristles — the terminal claw comparatively weak.

The 1st pair of legs (fig. 3 *g*) are rather thickset in structure, and imperfectly subcheliform, as in the species of the genera *Lysianassa* and *Socarnes*. The terminal articulation, or hand, is about as long as the 2 preceding articulations taken together, and tapers gradually towards the end, without exhibiting any distinctly defined palm.

The 2nd pair of legs (fig. 3 *h*) exhibit the slim, fragile structure characteristic of the family; they have the outer 3 articulations thickly covered with hair and the terminal claw rudimentary.

The 2 succeeding pairs of legs (fig. 3 *i*) are distinguished more especially by the unusual form of the terminal claw, which is rather thick, dagger-shaped, and well-nigh imperceptibly curved.

The 3 posterior pairs of legs (see fig. 3) have, as usual, the basal joint lamelliform-dilated, oval in structure, and, along the posterior margin, indistinctly serrate. The last pair (fig. 3 *k*) are highly characterized by the lower posterior corner of the said joint being drawn out as a sharp, dagger-shaped projection, or, as it were, spur, directed obliquely backward.

Sidste Par Halefødder (Fig. 3 *l*) rager med Spidsen noget udover det foregaaende Par. Begge Grene er dolkformige og nogne, den ydre noget længere end den indre og forsynet med en stærk Endetorn.

Halevedhænget (Fig. 3 *m*) er omtrent dobbelt saa langt som bredt, afsmalnende mod Enden og klovet næsten lige til Roden.

Farven var hos de friskt indfangede Exemplarer hvidagtig uden nogen bemærkelig Pigmentering.

Længden overskrider neppe 8^{mm}.

Forekomst og Udbredning. Enkelte Exemplarer af denne eiendommelige Art er taget paa 3 forskjellige Stationer, hvoraf den ene (Stat. 240) er beliggende omtrent midt imellem Island og Jan Mayen, de øvrige 2 (St. 303 og 312) i Havet Nord og Vest af Beeren Eiland. Dybden fra 658 til 1200 Favne.

Da alle disse 3 Stationer tilhører den kolde Area, er Arten utvivlsomt at betragte som en arktisk Form.

The last pair of caudal stylets (fig. 3 *l*) project with the point a little beyond the preceding pair. Both branches dagger-shaped and naked, the outer somewhat longer than the inner, and armed with a strong terminal spine.

The telson (fig. 3 *m*) is about twice as long as broad, tapering towards the extremity, and cleft well-nigh to the base.

Colour in the recently taken specimens whitish, without a trace of pigment.

Length scarcely exceeding 8^{mm}.

Occurrence and Distribution. — A few specimens of this peculiar species were taken at 3 different Stations, one of which (Stat. 240) lies about midway between Iceland and Jan Mayen, the other 2 (Stats. 303, 312) being in the sea north and west of Beeren Eiland; depth ranging from 658 to 1200 fathoms.

These Stations are in the cold area, and hence the species must unquestionably be regarded as an Arctic form.

34. **Anonyx typhlops**, G. O. Sars, n. sp.

(Pl. XII, Fig. 4, 4 *a—k*).

Anonyx typhlops, G. O. Sars, Crust. & Pycnogonida nova etc., No. 12.

Artscharacteristik. Legemet mindre sammentrykt, med rund Ryg og ikke meget høie Epimerer. Hovedets Sidevinkler tilspidsede. 3die Bagkropssegments Sideplader med det bagre Hjørne udtrukket i en kort tilspidset Fortsats. 4de Bagkropssegment oventil forsynet med en kort Kjøl, skydende ud bagtil i en skarp Spids. Ingen Øine. 1ste Par Følere med kort og tykt Skaft, Svøbens 1ste Led stort, Bisvøben af Svøbens halve Længde, 4-leddet. 2det Par Følere noget længere end 1ste Par. 1ste Fodpar kort og undersætsigt, tydeligt subcheliformt, med Haanden neppe længere end det foregaaende Led. Sidste Fodpar noget kortere end de 2 foregaaende, med Hofteleddet meget stort, ovalt. Halevedhænget smalt triangulært, dybt kløftet. Farven blegt rødlig. Længden 15^{mm}.

Findesteder. Stat. 183, 213.

Bemærkninger. Denne Art er idethele af mere normalt Udseende end foregaaende og tilhører tydeligt nok Slægten *Anonyx*, saaledes som denne af Boeck er characteriseret. Fra de tidligere bekjendte Arter kjendes den ved Hovedets Form, det korte, men skarpt tilspidsede Fremspring, som 3die Bagkropssegments Sideplader danner bagtil, fremdeles ved den i en bagudrettet Spids udgaaende Kjøl paa det følgende Segment, endelig ved den totale Mangel af Øine.

34. **Anonyx typhlops**, G. O. Sars, n. sp.

(Pl. XII, fig. 4, 4 *a—k*).

Anonyx typhlops, G. O. Sars, Crust. & Pycnogonida nova etc., No. 12.

Specific Character. — Body less compressed, with back round and not particularly deep epimera. Lateral angles of head acute. Lateral plates of 3rd abdominal segment with posterior corner drawn out to a short acute projection. Fourth abdominal segment furnished above with a short carina, jutting forth posteriorly with a sharp point. No eyes. First pair of antennæ with short and thick peduncle, 1st articulation of flagellum large, secondary flagellum half the length of principal, four-jointed. Second pair of antennæ somewhat longer than 1st. First pair of legs short and thickset, distinctly subcheliform. Last pair of legs somewhat shorter than the 2 preceding pairs, with basal joint exceedingly large, oval. Telson narrow-triangular, deeply cleft. Colour a pale red. Length 15^{mm}.

Locality. — Stats. 183, 213.

Remarks. — This species presents on the whole a more normal appearance than the preceding, and clearly belongs to the genus *Anonyx* as characterized by Boeck. From the species previously known it is recognized by the form of the head; the short and acutely pointed projection formed posteriorly by the lateral plates of the 3rd abdominal segment; furthermore, by the keel on the succeeding segment jutting forth as a posterior-directed point; and finally, by the total absence of eyes.

Beskrivelse af Hunnen. Legemet er (se Pl. XII, Fig. 1) noget forlænget, men mindre sammentrykt end hos foregaaende Art, med Ryggen temmelig bred og jevnt hvælvet og Epimererne forholdsvis lavere, neppe dobbelt saa hoie som selve Kroppen.

Hovedet er ikke meget længere end 1ste Forkropssegment og har Sidehjornerne temmelig stærkt fremspringende og noget tilspidsede, skjondt i mindre Grad end hos foregaaende Art.

4de Par Epimerer er bagtil dybt udrandede og nedenfor Udrandningen udtrukne i et skarpt Hjorne. 5te Par er betydelig bredere end hoit og af den sædvanlige tilrundede Form.

3die Bagkropssegment Sideplader er temmelig store og har det bagre Hjorne udtrukket i en kort, men skarpt tilspidset, næsten lige Fortsats. 4de Bagkropssegment har oventil en tydelig Kjol, der ender bagtil med en kort tornformig Spids.

1ste Par Følere (Fig. 4 *a*) har Skaftet kort og tykt. Svoben er noget længere end Skaftet og sammensat af ca. 11 Led, hvoraf det 1ste er meget stort og ligesaa langt som de 4 følgende Led tilsammen. Bisvoben er omtrent af Svøbens halve Længde, meget tynd og 4-leddet.

2det Par Følere (Fig. 4 *b*) er noget længere end 1ste Par og har Skaftets 2 sidste Led omtrent af ens Længde. Svoben er kjendeligt længere end paa 1ste Par og sammensat af circa 18 Led.

Munddelene springer tydeligt frem nedenfor 1ste Par Epimerer (se Fig. 4). Deres Bygning er forøvrigt (se Fig. 4 *c*—*f*) i alt væsentligt saa nær overensstemmende med samme hos foregaaende Art, at jeg anser en detailleret Beskrivelse af dem for overflodig.

1ste Fodpar (Fig. 4 *g*) er forholdsvis kort og undersætsigt bygget og tydeligt subcheliformt som hos de tidligere bekjendte Arter af Slægten. Sidste Led eller Haanden er neppe længere end det foregaaende Led og har ved Enden en tydeligt begrændset noget skraa Griberand, mod hvilken den korte Endeklo kan slaaes ind.

2det Fodpar (Fig. 4 *h*) viser intet særegent i sin Bygning.

De 2 følgende Fodpar har Endekloen normalt udviklet og neppe længere end Halvparten af sidste Led (se Fig. 4 *i*).

Sidste Fodpar (se Fig. 4) er noget kortere end de 2 foregaaende og har Hofteleddet som paa disse simpelt ovalt, skjondt noget større, og i den bagre Rand tydeligt saugtakket.

Sidste Par Halefødder (se Fig. 4 *k*) er næsten nøiagtigt af samme Udseende som hos foregaaende Art.

Description of the Female. — The body (see Pl. XII, fig. 4) somewhat elongate, though less compressed than in the preceding species, with the back comparatively broad and uniformly arched, and the epimera relatively shorter, scarcely twice the height of the body.

The head is not much longer than the 1st thoracic segment, and has the lateral corners rather prominently projecting and somewhat pointed. — less so however than in the preceding species.

The 4th pair of epimera are hindwards deeply emarginate, and, below the emargination, produced to a sharp corner. The 4th pair are considerably broader than high, and of the usual rounded form.

The lateral plates of the 3rd abdominal segment are rather large and broad, and have the posterior corner drawn out as a short, but acute-pointed, almost straight projection. The 4th abdominal segment has above a distinct carina, terminating posteriorly in a short, spiniform point.

The 1st pair of antennæ (fig. 4 *a*) have the peduncle short and thick. The flagellum is somewhat longer than the peduncle and composed of about 11 articulations, the 1st very large and equal in length to the 4 succeeding ones taken together. The accessory flagellum is about half as long as the flagellum, exceedingly thin and composed of 4 articulations.

The 2nd pair of antennæ (fig. 4 *c*) are somewhat longer than the 1st pair, and have the 2 last joints of the peduncle well-nigh uniform in length. The flagellum is appreciably longer than that of the 1st pair, and composed of about 18 articulations.

The oral appendages project distinctly from beneath the 1st pair of epimera (see fig. 4). Their structure, for the rest (see fig. 4 *c*—*f*), agrees in all essential characteristics so closely with that in the preceding species as, in my judgment, to render a detailed description superfluous.

The 1st pair of legs (fig. 4 *g*) are comparatively short and thickset in structure, and distinctly subcheliform, as in the previously known species of the genus. The last articulation, or hand, is scarcely at all longer than the preceding joint, and has at the extremity a distinctly defined, somewhat oblique palm, toward which the short terminal claw admits of being jerked in.

The 2nd pair of legs (fig. 4 *h*) exhibit nothing characteristic in structure.

The 2 succeeding pairs of legs have the terminal claw normally developed, and but very little longer than half last joint (see fig. 4 *i*).

The last pair of legs (see fig. 4) are somewhat shorter than the 2 preceding, and have the basal joint, as in the latter, of a simple oval form, though somewhat larger, and, along the posterior margin, distinctly serrate.

The last pair of caudal stylets (see fig. 4 *k*) have almost precisely the same appearance as those in the preceding species.

Halevedhænget (ibid.) er ogsaa meget ligt, men har Indsnittet ikke fuldt saa dybt, skjondt betydeligt overskridende Midten af Vedhængets Længde.

Farven var paa de friskt indfangede Exemplarer hvidagtig med et svagt rodligt Skjær.

Længden gaar op til 15^{mm}.

Forekomst og Udbredning. Enkelte Exemplarer af nærværende Art erholdtes paa 2 forskjellige Stationer (St. 183 og 213), begge beliggende i Havet omtrent midt imellem Jan Mayen og Finmarken. Dybden fra 1710 til 1760 Favne. Den synes saaledes at være en for den kolde Areas større Dyb eiendommelig Form.

The telson (ibid.) is likewise very similar, but has the incision not quite so deep, though considerably exceeding half the length of the appendage.

Colour in the recently taken specimens whitish, with a faint tinge of red.

Length reaching 15^{mm}.

Occurrence and Distribution. — A few examples of the present species were obtained at 2 different Stations (Stats. 183 and 213), both about midway in the tract of ocean stretching between Jan Mayen and Finmarken; depth from 1710 to 1760 fathoms. It would, therefore, appear to be a form peculiar to the greater depths of the cold area.

Gen. 4. **Onisimus**, Boeck. 1870.

Crust. amphip. bor. & arct.

35. Onisimus turgidus, G. O. Sars, n. sp.

(Pl. XII. Fig. 5, 5 *a—i*).

Anonyx (Onisimus) turgidus, G. O. Sars, Crust. & Pycnogonida nova etc., No. 13.

Artscharacteristik. Legemet stærkt opsvulmet, med Breden næsten ligesaa stor som Hoiden. Hovedets Sidehjørner tilspidsede. De 4 forreste Par Epimerer temmelig store; 5te omtrent af samme Hoide som Brede. 3die Bagkropssegments Sideplader bagtil udtrukne i en skarp, noget opadkrummet Fortsats; 4de Segment i Midten noget indtrykt. Øinene tydelige, ovale, nedentil bredere, med rødt Pigment. 1ste Par Følere med stærkt opsvulmet Skaft; Svøben kort, med 1ste Led meget stort; Bisvøben temmelig stærkt udviklet, 4-leddet. 1ste Fodpar undersætsigt, tydeligt subcheliformt, med Haanden neppe længere end det foregaaende Led. De 2 bagre Fodpar med stort pladeformigt Hofteled af regelmæssig oval Form. Halefodderne robuste, med lancetformige, nogne Grene. Halevedhænget kort og bredt, i Enden afstumpet, med et lidet og smalt Indsnit, der ikke naar til Midten. Farven gulrød. Længden 13^{mm}.

Findested. Stat. 323.

Bemærkninger. Af de bekjendte til denne Slægt henhørende Former slutter nærværende Art sig nærmest til *O. Edwardsii* Kröyer, fra hvilken den dog strax kjendes ved den usædvanlig plumpe og opblæste Kropsform, i hvilken Henseende den mere ligner *O. plautus* Kröyer, der dog i andre Punkter skiller sig meget bestemt.

Gen. 4. **Onisimus.** Boeck. 1870.

Crust. amphip. bor. & arct.

35. Onisimus turgidus, G. O. Sars, n. sp.

(Pl. XII. figs. 5, 5 *a—i*).

Anonyx (Onisimus turgidus), G. O. Sars, Crust. & Pycnogonida nova etc., No. 13.

Specific Character. — Body exceedingly tumid, with breadth almost equal to height. Lateral corners of head pointed. The 4 anterior pairs of epimera rather large; 5th pair about equal in height and breadth. Lateral plates of 3rd abdominal segment drawn out posteriorly as a sharp, somewhat upward-curving projection; 4th segment slightly impressed in the middle. Eyes distinct, oval, broader below, with a red-coloured pigment. First pair of antennæ with peduncle greatly swollen; flagellum short, with 1st articulation very large; secondary flagellum rather well developed, four-jointed. First pair of legs thickset, distinctly subcheliform, with the hand scarcely at all longer than the preceding articulation. The 3 posterior pairs of legs with basal joint large, lamelliform, and of a regular oval shape. Caudal stylets robust, with naked, lanceolate branches. Telson short and broad, obtuse at extremity, with a short and narrow incision, that does not reach to the middle. Colour yellowish-red. Length 13^{mm}.

Locality. — Stat. 323.

Remarks. — Of the known forms belonging to this genus, the present species approximates closest *O. Edwardsii* Kröyer, from which however it may at once be distinguished by the remarkably clumsy and inflated form of body, a character that gives the animal greater resemblance to *O. plautus* Kröyer, which, in other respects, however, differs very decidedly.

Beskrivelse af Hunnen. Legemet er (se Pl. XII, Fig. 5 og 5′) ualmindelig robust bygget og saa stærkt opblæst, at Breden neppe er meget ringere end Høiden.

Hovedet er omtrent saa langt som 1ste Forkropssegment og har Sidehjørnerne tilspidsede, men kun lidet fremspringende.

De 4 forreste Par Epimerer er temmelig store, næsten dobbelt saa høie som selve Kroppen; det 4de viser bagtil den sædvanlige Udrandning og danner nedenfor denne et næsten retvinklet Hjørne.

3die Bagkropssegments Sideplader er bagtil uddragne i en skarp opadkrummet Spids. Det følgende Segment er ovenfil bag Midten noget indtrykt, forøvrigt ligesom de øvrige glat og uden Kjøl eller Fortsatser.

Øinene er tydeligt udviklede, af oval Form og noget bredere nedentil. Deres Pigment var hos det levende Dyr af zinoberrød Farve.

1ste Par Følere (Fig. 5 *a*) har Skaftet stærkt opsvulmet. Svøben er kun lidet længere end dette og bestaar af circa 10 Led, hvoraf det 1ste er meget stort og omtrent saa langt som de 4 følgende tilsammen. Bisvøben er forholdsvis stærkt udviklet, adskilligt mere end halvt saa lang som selve Svøben og bestaar af 4 Led; ogsaa her er 1ste Led meget stort og længere end de øvrige tilsammen.

2det Par Følere (Fig. 5 *b*) er neppe synderligt længere end 1ste Par og har Skaftets sidste Led noget kortere end det foregaaende. Svøben er omtrent af samme Længde som Skaftets 2 sidste Led tilsammen og sammensat af kun 7 Led.

Munddelene er for største Delen til Siderne dækkede af 1ste Par Epimerer. Deres Bygning stemmer (se Fig. 5 *c—f*) i alt væsentligt fuldkommen overens med samme hos de 2 ovenfor beskrevne *Anonyx*-Arter.

1ste Fodpar (Fig. 5 *g*) viser stor Lighed med samme hos *Anonyx typhlops*. Ligesom hos denne er det undersætsigt bygget, med sidste Led neppe længere end det foregaaende og tydeligt subcheliformt.

2det Fodpar (Fig. 5 *h*) viser neppe nogen paafaldende Eiendommelighed.

De 3 bagre Fodpar (se Fig. 5) er temmelig korte og robuste, dog paa langt nær ikke som hos *O. plautus*. Deres Hofteled er stærkt pladeformigt udvidet, ovalt og i den bagre Kant tydeligt saugtakket.

Halefødderne (se Fig. 5 *i*) er robuste, med lancetformige, børsteløse Grene. Paa de 2 første Par er Stammen i den ydre Kant forsynet med en Rad af fine Torner, som derimod mangler paa sidste Par.

Halevedhænget (ibid.) er den eneste Del, som viser nogen mere iøinefaldende Afvigelse fra samme hos de 2 foregaaende Arter og er ogsaa den Character, der har

Description of the Female. — The body (see Pl. XII, figs. 5, 5′) uncommonly robust in structure, and so inflated, that the breadth is but very little, if at all, less than the height.

The head is about as long as the 1st thoracic segment, and has the lateral corners pointed, though very slightly projecting.

The 4 anterior pairs of epimera are rather large, almost twice as high as the body itself; the 4th pair exhibit posteriorly the usual emargination, below which they form an almost rectangular corner.

The lateral plates of the 3rd abdominal segment are produced posteriorly to a sharp, upward-curving point. The succeeding segment is somewhat impressed above, posterior to the middle; for the rest smooth, like the others, and without either keel or projection.

The eyes are distinctly developed, oval in form, and somewhat broader below. Their pigment, in the living animal, was a rich vermillion.

The 1st pair of antennæ (fig. 5 *a*) have the peduncle greatly swollen. The flagellum is but very little longer than the peduncle, and consists of about 10 articulations, the 1st exceedingly large and well-nigh as long as the 4 succeeding articulations taken together. The secondary flagellum is comparatively well developed, considerably more than half as long as the flagellum itself, and composed of 4 articulations; here, too, the 1st articulation is very large, and longer than all the rest taken together.

The 2nd pair of antennæ (fig. 5 *b*) are not much longer than the 1st, and have the last joint of the peduncle somewhat shorter than the preceding. The flagellum is about equal in length to the last 2 joints of the peduncle taken together, and consists of only 7 articulations.

The oral appendages are in greater part covered at the sides by the 1st pair of epimera. Their structure (see fig. 5 *c—f*) agrees in all essential characteristics with that in the 2 *Anonyx* species described above.

The 1st pair of legs (fig. 5 *g*) exhibit great resemblance to the corresponding pair in *Anonyx typhlops*. They are, namely, thickset in structure, with the last articulation but very little, if at all, longer than the preceding, and distinctly subcheliform.

The 2nd pair of legs (fig. 5 *h*) exhibit apparently no striking peculiarity.

The 3 posterior pairs of legs (see fig. 5) are rather short, and robust in structure, though by no means to the same extent as in *O. plautus*. The basal joint is very considerably lamelliform-dilated, oval, and distinctly serrate along the posterior margin.

The caudal stylets (see fig. 5 *i*) are robust, with naked, lanceolate branches. On the 2 first pairs, the trunk is furnished along the outer margin with a row of delicate spines, wanting on the last pair.

The telson (ibid.) is the only part that exhibits any striking deviation from that organ as it occurs in the 2 preceding species, and presents too the character

bevæget Boeck til at opstille sin Slægt *Onisimus*, der vel vanskeligt lader sig hævde som saadan. Det er forholdsvis kort og bredt, saa at det ikke engang rækker til Enden af sidste Par Halefodders Stamme. Spidsen er afstumpet og viser et ganske kort og smalt Indsnit, der ikke rækker til Midten af Vedhængets Længde.

Farven var hos de friskt indfangede Exemplarer rodgul med mere intensivt rødligt gjennemskinnende Indvolde.

Længden af det største Exemplar er 13^{mm}.

Forekomst og Udbredning. 2 Exemplarer af denne Art erholdtes under Expeditionens sidste Togt omtrent midtveis mellem Beeren Eiland og Finmarken (Stat. 323) fra et Dyb af 223 Favne. De fandtes parasitisk paa en større fra dette Dyb optagen *Actinie*. Om Artens Udbredning er det selvfølgeligt vanskeligt at sige noget med Bestemthed. Da Stationen egentlig ikke tilhører den kolde Area, er Arten heller ikke med Sikkerhed at characterisere som en udpræget arktisk Form.

that induced Boeck to establish his genus *Onisimus*, which, however, will hardly admit of being retained as such. The appendage is short and broad, not even reaching to the extremity of the trunk of the last pair of caudal stylets. The point is obtuse, and exhibits an exceedingly short and narrow incision, that does not extend to the middle of the appendage.

Colour in the recently taken specimens a reddish-yellow; the viscera — seen shining through the skin — more vividly red.

Length of the largest specimen 13^{mm}.

Occurrence and Distribution. — Two specimens of this species were obtained on the last cruise of the Expedition, about midway between Beeren Eiland and Finmark (Stat. 323), from a depth of 223 fathoms. They occurred as parasites on a large *Actinian*, taken at that depth. Concerning the distribution of the species, nothing can of course be stated with certainty. The Station not being in a strict sense within the limits of the cold area, this animal, too, cannot be regarded as a prominent Arctic form.

36. Onisimus leucopis, G. O. Sars, n. sp.

(Pl. XIII. Fig. 1, 1 *a*).

Anonyx (*Onisimus*) *leucopis*, G. O. Sars, Crust. & Pycnogonida nova etc., No. 14.

Artscharacteristik. Legemet ikke meget sammentrykt, med jevnt hvælvet Ryg og forholdsvis ikke meget store Epimerer. Hovedets Sidehjørner tilspidsede. 4de Par Epimerer bagtil nedenfor Udrandningen kun lidet fremspringende. 3die Bagkropssegments Sideplader bagtil endende med et spidst Hjørne. De følgende Segmenter oventil jevnt hvælvede. Øinene ufuldstændigt udviklede; meget smaa, med hvidt Pigment. 1ste Par Følere med Svøben noget længere end Skaftet, Bisvøben temmelig stor, 4-leddet. 2det Par Følere længere end 1ste Par. Fødderne af sædvanlig Bygning; 3die Led paa de 3 bagre Par kort og tykt. Halevedhænget af samme Længde som sidste Par Halefodders Stamme, i Spidsen ganske svagt udrandet. Farven hvidagtig, halvt gjennemsigtig. Længden 10^{mm}.

Findested. Stat. 96.

Bemærkninger. Denne Art kjendes let fra de øvrige af Boeck til Slægten *Onisimus* henførte Arter ved Øinenes ufuldstændige Udvikling samt ved Halevedhængets Form.

36. Onisimus leucopis, G. O. Sars, n. sp.

(Pl. XIII. figs. 1, 1 *a*).

Anonyx (*Onisimus*) *leucopis*, G. O. Sars, Crust. & Pycnogonida nova etc., No. 14.

Specific Character. — Body not much compressed, with uniformly arching back and relatively not very large epimera. Lateral corners of head pointed. Fourth pair of epimera but slightly projecting posteriorly below the emargination. Lateral plates of 3rd abdominal segment terminating posteriorly with an acute corner. The succeeding segments uniformly arched above. Eyes imperfectly developed, very small, pigment white. First pair of antennæ with flagellum somewhat longer than peduncle; secondary flagellum rather large, four-jointed. Second pair of antennæ longer than 1st. Legs exhibiting usual structure; 3rd articulation on the 3 posterior pairs short and thick. Telson equalling in length trunk of last pair of caudal stylets, very faintly emarginate at extremity. Colour whitish, semi-translucent. Length 10^{mm}.

Locality. — Stat. 96.

Remarks. — This species is easily distinguished from all the others referred by Boeck to the genus *Onisimus*, by reason of the imperfect development of the eyes and the shape of the telson.

Beskrivelse af Hunnen. Legemet er (se Pl. XIII. Fig. 1) temmelig tykt med rund og hvælvet Ryg og forholdsvis ikke meget høie Epimerer.

Hovedet er af samme Længde som 1ste Forkropssegment og har Sidehjørnerne noget udtrukne og tilspidsede.

1ste Par Epimerer en nedentil temmelig stærkt udvidede og jevnt afrundede; 4de Par er neppe bredere end de øvrige og i den bagre Kant kun svagt udrandet; 5te Par er kjendeligt bredere end høit og af afrundet firkantet Form.

3die Bagkropssegments Sideplader er bagtil ikke saa stærkt udtrukne som hos de i det foregaaende omtalte Arter, men ender kun med et spidst Hjørne. De følgende Segmenter er oventil jevnt hvælvede, uden Kjøl eller Fortsatser.

Øinene er meget smaa og beliggende langt nede paa Siderne af Hovedet. De er af en temmelig ufuldkommen Bygning, idet de egentlige Synselementer kun er svagt fremtrædende. Øiepigmentet er af en eiendommelig lys, næsten melkehvid Farve (heraf Artsbenævnelsen).

1ste Par Følere har Svøben noget længere end Skaftet og sammensat af 11 Led, hvoraf det 1ste er temmelig stort. Bisvøben er ikke meget kortere end den egentlige Svøbe og 4-leddet.

2det Par Følere er adskilligt længere end 1ste Par og har Svøben temmelig forlænget og sammensat af 16 Led.

Munddelene kunde ikke nærmere undersøges hos det foreliggende Exemplar; heller ikke de 2 første Fodpar; men disse sidste synes dog, saavidt det kunde sees, ikke at adskille sig i nogen væsentlig Grad fra samme hos foregaaende Art.

De 3 bagerste Fodpar er alle omtrent af ens Længde. Hofteleddet har den sædvanlige pladedannede Form og tiltager noget i Størrelse bagtil. Af de øvrige Led udmærker det 3die sig ved sin korte og tykke Form.

Halevedhænget (se Fig. 1 *a*) er omtrent af samme Længde som Stammen paa sidste Par Halefødder. Det er ligesom hos foregaaende Art kort og bredt, pladeformigt, men adskiller sig derved, at Spidsen ikke er indskaaret, men kun ganske svagt udrandet i Midten.

Farven var i frisk Tilstand hvidagtig og halvt gjennemsigtig.

Længden af det undersøgte Exemplar var 10^{mm}.

Forekomst og Udbredning. 1 enkelt Exemplar af denne Form erholdtes under Expeditionens 1ste Togt i Havet mellem Island og Norge (Stat. 96) fra et Dyb af 805 Favne. Da Stationen tilhører den kolde Area, er det rimeligt at nærværende Art er en ægte arktisk Form.

Description of the Female. — The body (see Pl. XIII, fig. 1) rather thick, with round and arching back and relatively not very deep epimera.

The head of the same length as the 1st thoracic segment, with the lateral corners somewhat produced and pointed.

The 1st pair of epimera are considerably dilated below, and uniformly rounded; the 4th pair are scarcely at all broader than the rest, and but slightly emarginate along the posterior border; the 5th pair are appreciably broader than high, and of a rounded, quadrate form.

The lateral plates of the 3rd abdominal segment are not so much produced posteriorly as in the preceding species, terminating merely with an acute corner. The succeeding segments are uniformly arched above, without either keel or projection.

The eyes are exceedingly small, and placed far down the sides of the head. In structure, they are rather imperfect, the true elements of vision being but slightly developed. The ocular pigment has a peculiar light, well-nigh lacteal colour (hence the specific designation).

The 1st pair of antennæ have the flagellum somewhat longer than the peduncle, and composed of 11 articulations, the 1st rather large. The secondary flagellum is not much shorter than the true flagellum, and has 4 articulations.

The 2nd pair of antennæ are considerably longer than the 1st, with the flagellum rather elongate and composed of 16 articulations.

The oral appendages could not be closely examined in the only specimen taken; this was also the case with the 2 first pairs of legs; but the latter had no appearance of differing in any essential degree from those in the preceding species.

The 3 posterior pairs of legs are all about equal in length. The basal joint has the usual lamelliform shape, and increases somewhat in size posteriorly. Of the remaining articulations, the 3rd is characterized by its short and thick form.

The telson (see fig. 1 *a*) is about of the same length as the trunk on the last pair of caudal stylets. As in the preceding species, it is short and broad, lamelliform, but differs in the point not being incised, but merely having a slight emargination in the middle.

Colour in a fresh state whitish, with the body semi-translucent.

Length of the specimen examined 10^{mm}.

Occurrence and Distribution. — A single specimen of this form was obtained on the 1st cruise of the Expedition, in the tract of ocean stretching between Iceland and Norway (Stat. 97), from a depth of 805 fathoms. This Station being in the cold area, there is good reason for assuming the present species to be a true Arctic form.

Gen. 5. **Tryphosa**, Boeck, 1870.

Crust. amphip. bor. & aret.

37. Tryphosa pusilla, G. O. Sars, n. sp.

(Pl. XIII, Fig. 2, 2 *a*).

Anonyx (*Tryphosa*) *pusilla*, G. O. Sars, Crust. & Pycnog. nova etc., No. 15.

Artscharacteristik. Legemet noget sammentrykt, med forholdsvis hoie Epimerer. Hovedets Sidehjorner stærkt fremspringende, men afrundede i Spidsen. 1ste Par Epimerer betydelig mindre end de ovrige og smalere nedentil. 3die Bagkropssegments Sideplader bagtil lidet uddragne, spidsvinklede; 4de Segment oventil puklet. Ingen Oine. Folerne indbyrdes af ens Længde; 1ste Par med Svoben betydelig længere end Skaftet; Bisvoben meget smal 3-leddet. Mundregionen stærkt fremspringende. De 3 bagerste Fodpar temmelig spinkle, med ovalt Hofteled. Halevedhænget triangulært, længere end Stammen paa sidste Par Halefødder og næsten til Roden kloftet. Farven hvidagtig. Længden $5^1/_2{}^{mm}$.

Findested. Stat. 240.

Bemærkninger. Jeg tror nærmest at maatte henføre denne Art til Boecks Slægt *Tryphosa*. Min personlige Opfatning er imidlertid, at saavel denne Slægt som *Sl. Onisimus* og *Orchomene* bor slaaes sammen med *Sl. Anonyx*. Fra de ovrige af Boeck til *Sl. Tryphosa* henførte Former kjendes nærværende Art ved den fuldstændige Mangel af Oine, ved den usædvanlig tynde Bisvobe paa 1ste Par Folere og ved Formen af Hovedet.

Beskrivelse af Hunnen. Legemet er (se Pl. XIII. Fig. 2) temmelig stærkt sammentrykt fra Siderne med forholdsvis hoie Epimerer og stærkt fremspringende Mundregion.

Hovedet har Sidehjornerne temmelig stærkt fremspringende, skjondt de ikke som hos de i det foregaaende omtalte Arter er tilspidsede, men mere tungedannede, med Enden stumpt tilrundet.

1ste Par Epimerer er kjendeligt mindre end de ovrige og noget afsmalnende nedad; 4de Par er bagtil dybt udrandet og nedenfor Udrandningen udtrukket i et skarpt Hjorne. 5te Par er omtrent af samme Hoide som Brede.

3die Bagkropssegments Sideplader er kun lidet udtrukne bagtil og danner her kun et spidst Hjorne. Det følgende Segment er oventil pukkelformigt fremstaaende.

Af Oine fandtes hos det friskt indfangede Exemplar ikke det ringeste Spor.

Gen. 5. **Tryphosa**, Boeck, 1870.

Crust. amphip. bor. & aret.

37. Tryphosa pusilla, G. O. Sars.

Pl. XIII. figs. 2, 2 *a*).

Anonyx (*Tryphosa*) *pusilla*, G. O. Sars, Crust. & Pycnog. nova etc., No. 15.

Specific Character. — Body somewhat compressed, with relatively high epimera. Lateral corners of head prominently projecting, but rounded at point. First pair of epimera considerably smaller than the rest, and more slender below. Lateral plates of 4th abdominal segment but little produced posteriorly, acute-angled; 4th segment hunched above. No eyes. Antennæ uniform in length; 1st pair with flagellum considerably longer than peduncle; secondary flagellum exceedingly slender, three-jointed. Oral region prominently projecting. The three hindmost pairs of legs rather slender, basal joint oval in form. Telson triangular, longer than trunk on last pair of caudal stylets, and cleft almost to the base. Colour whitish. Length $5^1/_2{}^{mm}$.

Locality. — Stat. 240.

Remarks. — The present species I refer here to Boeck's genus *Tryphosa*. In my judgment, however, both this genus and the genera *Onisimus* and *Orchomene* should, perhaps, more properly be eliminated and their species ranged under the genus *Anonyx*. From the other forms referred by Boeck to the genus *Tryphosa*, the present species may be recognized by the total absence of eyes, the remarkably slender secondary flagellum on the 1st pair of antennæ, and the form of the head.

Description of the Female. — The body (see Pl. XIII, fig. 2) a good deal compressed from the sides, with relatively deep epimera and the oral region prominently projecting.

The head has the lateral corners rather prominently projecting, though not pointed, as in the species previously described, but more linguiform in shape, with the extremity obtusely rounded.

The 1st pair of epimera are appreciably smaller than the rest, and taper somewhat from below; the 4th pair are deeply emarginate posteriorly, and beneath the emargination produced to a sharp corner; the 5th pair about uniform in height and breadth.

The lateral plates of the 3rd abdominal segment are but little produced posteriorly, constituting merely an acute angle. The succeeding segment projects, hunch-shaped, above.

Of eyes in the recently taken specimen, not a trace could be detected.

1ste Par Folere er temmelig forlængede, med Svoben betydelig længere end Skaftet og bestaaende af 11 Led, hvoraf det 1ste er temmelig stort. Bisvoben er neppe mere end halvt saa lang og særdeles tynd samt 3-leddet.

2det Par Folere er omtrent af samme Længde som 1ste Par og har Skaftets sidste Led ganske kort og Svoben bestaaende af 12 Led.

1ste Fodpar er temmelig svagt bygget, forovrigt af sædvanlig Form, med sidste Led eller Haanden omtrent af det foregaaende Leds Længde og noget skraat afskaaret i Enden.

De 3 bagerste Fodpar er forholdsvis spinkle, men med bredt pladeformigt Hofteled.

Sidste Par Halefodder (se Fig. 2 *a*) er forholdsvis korte, med nøgne lancetformige Grene.

Halevedhænget (ibid.) rager noget udover Stammen paa sidste Par Halefodder og er af triangulær Form samt ved et meget smalt Indsnit kløftet næsten til Roden.

Farven var paa det levende Dyr hvidagtig uden nogen tydelig Pigmentering.

Længden overstiger neppe $5^1/_2{}^{mm}$.

Forekomst og Udbredning. Et enkelt Exemplar af denne lille Art toges under Expeditionens 2det Togt i Havet mellem Jan Mayen og Island (Stat. 240) paa det betydelige Dyb af 1004 Favne. Da Stationen tilhører den kolde Area, er Arten utvivlsomt at betragte som en arktisk Form.

The 1st pair of antennæ are rather elongate, with the flagellum considerably longer than the peduncle, and composed of 11 articulations, the 1st comparatively large. The secondary flagellum is scarcely more than half as long, exceedingly slender, and composed of 3 articulations.

The 2nd pair of antennæ are about of the same length as the 1st pair, with the last joint of the peduncle quite short and the flagellum consisting of 12 articulations.

The 1st pair of legs are rather feeble in structure; for the rest, of the usual form, with the last articulation, or hand, about equal in length to the preceding, and somewhat obliquely truncate at the extremity.

The 3 posterior pairs of legs are comparatively slender, but with the basal joint broadly lamelliform.

The last pair of caudal stylets (see fig. 2 *a*) are comparatively short, with naked, lanceolate branches.

The telson (ibid.) projects a little over the trunk on the last pair of caudal stylets, is triangular in form, and cleft by an exceedingly narrow incision almost to the base.

Colour in the living animal whitish, without any distinct pigmentation.

Length scarcely exceeding $5^1/_2{}^{mm}$.

Occurrence and Distribution. — A single specimen of this small species was taken, on the 2nd cruise of the Expedition, in the tract of ocean between Jan Mayen and Iceland (Stat. 240), at the considerable depth of 1004 fathoms. This Station being in the cold area, the species may unquestionably be regarded as an Arctic form.

Gen. 6. **Acidostoma,** Lilljeborg, 1865.

On the Lysianassa magellanica etc.

38. Acidostoma laticorne, G. O. Sars, Crust.

(Pl. XIII, Fig. 3, 3 *a*).

Acidostoma laticorne, G. O. Sars, Crust. & Pycnogon. nova etc., No. 17.

Artscharacteristik. Legemet særdeles undersætsigt, med stærkt udviklede Epimerer. Hovedet lidet, med Sidehjørnerne smalt tilrundede. 3die Bagkropssegments Sideplader bagtil noget udtrukne, men ikke tilspidsede; 4de Segment oventil noget sadelformigt indtrykt. Ingen Øine. 1ste Par Folere overordentlig voluminøse, med Skaftet særdeles tykt, Svoben af Skaftets Længde, 7-leddet, 1ste Led meget stort, pladeformigt sammentrykt og i den bagre Kant tæt cilieret. Bisvoben stærkt udviklet, 6-leddet. De 3 bagerste Fodpar overordentlig robuste, med stort næsten firkantet Hofteled og 3die Led særdeles bredt og sammentrykt.

Gen. 6. **Acidostoma,** Lilljeborg, 1865.

On the Lysianassa magellanica etc.

38. Acidostoma laticorne, G. O. Sars, n. sp.

(Pl. XIII, fig. 3, 3 *a*).

Acidostoma laticorne, G. O. Sars, Crust. & Pycnogon. nova etc., No. 17.

Specific Character. — Body exceedingly thickset, with very fully developed epimera. Head small, with lateral corners narrowly rounded. Lateral plates of 3rd abdominal segment somewhat produced posteriorly, but not pointed; 4th segment, saddle-shaped as it were above. No eyes. First pair of antennæ remarkably robust, with peduncle exceedingly thick, flagellum same length as peduncle, seven-jointed, 1st articulation very large, lamelliform-compressed, and densely ciliated along the posterior margin; secondary flagellum strongly developed, six-jointed. The 3 posterior pairs of legs exceedingly robust in structure, with basal joint

2det Par Halefodder med stærkt udvidet Stamme; sidste Par meget smaa og rudimentære. Halevedhænget kort og bredt, med Spidsen svagt udrandet. Farven hvidagtig. Længden $7^1/_2{}^{mm}$.

Findested. Stat. 251.

Bemærkninger. Fra den eneste hidtil bekjendte Art af Slægten, *A. obesum* Sp. Bate, er denne let kjendelig ved den fuldstændige Mangel af Øine, de enormt udviklede 1ste Par Følere og de usædvanlig robuste 3 bagerste Fodpar. I den rudimentære Beskaffenhed af sidste Par Halefodder og det bagtil ikke indskaarne Halevedhæng adskiller nærværende Art sig ogsaa væsentligt fra den typiske Form.

Beskrivelse. Legemet er (se Pl. XIII, Fig. 3) af ualmindelig kort og undersætsig Bygning, med bred hvælvet Ryg og høie Epimerer.

Hovedet er forholdsvis lidet, men bredt og har den forreste Rand til hver Side stærkt udrandet for Fæstet af 1ste Par Følere. Dets Sidehjørner er smalt tilrundede.

De 4 forreste Par Epimerer er omtrent dobbelt saa høie som selve Kroppen og dækker hinanden delvis gjensidigt. 4de Par er bagtil i sin øverste Del udrandet for det følgende Par og er nedenfor Udrandningen næsten tvært afskaaret, med den øvre Vinkel ret. 5te Par er omtrent af samme Høide som Brede, af uregelmæssig firkantet Form.

3die Bagkropssegmentets Sideplader er meget store og bagtil noget udtrukne, uden dog at være tilspidsede. Det følgende Segment viser oventil et sadelformigt Indtryk.

Øine mangler ganske og aldeles.

1ste Par Følere er ganske overordentlig voluminøse og omtrent saa lange som Hovedet og de 4 forreste Segmenter tilsammen. Skaftet er stærkt opsvulmet med alle 3 Led tydeligt begrændsede. Svøben er noget længere end Skaftet og sammensat af 7 Led, hvoraf det 1ste udmærker sig paa en paafaldende Maade ved sin betydelige Størrelse og stærkt sammentrykte næsten pladedannede Form; i den bagre noget tilskjærpede og bueformigt bøiede Rand bærer dette Led en tæt Rad af lange gjennemsigtige Sandseborster. Bisvøben er forholdsvis stærkt udviklet og neppe kortere end den egentlige Svøbe samt sammensat af 6 tynde Led.

2det Par Følere er noget længere end 1ste Par, men meget tyndere. Af Skaftets Led er det næstsidste det længste. Svøben er omtrent af Skaftets Længde og sammensat af 10—12 Led.

Munddelene og de forreste Fodpar kunde ikke nøiere undersøges paa det eneste foreliggende Exemplar, men de

large, almost quadrate, and 3rd articulation remarkably broad and compressed. Second pair of caudal stylets with trunk very fully developed; last pair exceedingly small and rudimentary. Telson short and broad, with point slightly emarginate. Colour whitish, length $7^1{}^{mm}$.

Locality. — Stat. 251.

Remarks. — From the only hitherto known species of this genus, viz. *A. obesum* Sp. Bate, the present is easily distinguished by the total absence of eyes, the prodigiously developed 1st pair of antennæ, and the remarkably robust 3 posterior pairs of legs. Moreover, in the rudimentary character of the last pair of caudal stylets, as also the posteriorly non-incised telson, this species differs essentially from the typical form.

Description. — The body (see Pl. XIII, fig. 3) is remarkably short and thickset in structure, with broad, arching back and deep epimera.

The head is comparatively small, but broad, and has the anterior margin, on either side, very considerably emarginate, for the attachment of the 1st pair of antennæ. Its lateral corners are narrowly rounded.

The 4 anterior pairs of epimera are about twice as high as the body itself, and partly overlap one another. The 4th pair are emarginate posteriorly in their upper part, for the reception of the succeeding pair, and below the emargination almost vertically truncate, with the upper angle a right one. The 5th pair are about of the same height as breadth, and irregular-quadrate in form.

The lateral plates of the 3rd abdominal segment are very large and somewhat produced posteriorly, without however being pointed. The succeeding segment exhibits above a saddle-shaped impression.

Of eyes no trace whatever.

The 1st pair of antennæ are remarkably robust, and equal in length to the head and the 4 anterior segments taken together. The peduncle is greatly swollen, and has each of the three joints distinctly defined. The flagellum is somewhat longer than the peduncle, and composed of 7 articulations, the 1st strikingly characterized by its large size, and greatly compressed almost lamelliform shape; along the posterior, somewhat sharpened and arcuate margin, this articulation bears a close series of long, translucent sensory bristles. The secondary flagellum, with 6 slender articulations, is very fully developed, and scarcely at all shorter than the true flagellum.

The 2nd pair of antennæ are somewhat longer than the 1st, but much more slender. Of the joints of the peduncle, the penultimate is the longest. The flagellum about equal in length to the peduncle, and composed of 10 or 12 articulations.

The oral appendages and the anterior pairs of legs could not be closely examined in the only specimen taken;

synes ikke, saavidt det kunde sees, i nogen væsentlig Grad at skille sig i sin Bygning fra samme hos den typiske Art.

De 3 bagerste Fodpar er af en overordentlig robust Bygning og indbyrdes omtrent af ens Længde. Hofteleddet er særdeles stort, næsten firkantet, med det nedre bagre Hjørne noget udtrukket og bredt afrundet. Af de øvrige Led er navnlig det 3die særdeles bredt og sammentrykt, med den bagre Rand stærkt buet. Endekloen er ganske kort.

2det Par Halefødder (se Fig. 3 og 3 *a*) udmærker sig ved den betydelige Brede og stærkt sammentrykte Form af Stammen. Grenene er som paa 1ste Par simpelt koniske, uden Børster eller Torner.

Sidste Par Halefødder (ibid.) er ganske rudimentære og saa smaa, at de neppe overrager Stammen paa det foregaaende Par. De er imidlertid som de øvrige Par tvegrenede, med Grenene særdeles smaa og korte.

Halevedhænget (ibid.) er kort og bredt, næsten firkantet, og ikke som hos den typiske Art dybt indskaaret, men kun i Enden ganske svagt udrandet.

Farven var hos det friskt indfangede Exemplar hvidagtig uden nogen tydelig Pigmentering.

Længden af det erholdte Exemplar er $7^1/_2{}^{mm}$.

Forekomst og Udbredning. — 1 enkelt Exemplar, efter Udseende at domme en Han, af denne meget distinkte Art toges under Expeditionens 2det Togt i Havet Vest af Lofoten (Stat. 251) fra et Dyb af 634 Favne. 1 ganske ungt Exemplar, der synes at tilhøre samme Art, har jeg tidligere taget ved Finmarkens Kyst paa 150—200 Favnes Dyb. Da den ovenomtalte Station tilhører den kolde Area, er vistnok Arten at betragte som en arktisk Form.

but they did not appear to differ essentially in structure from those in the typical form.

The 3 posterior pairs of legs are remarkably robust in structure and well-nigh uniform in length. The basal joint is exceedingly large, almost quadrate, with the lower posterior corner somewhat produced and broadly rounded. Of the remaining articulations, the 3rd, in particular, is exceedingly broad and compressed, with the posterior margin very arcuate. The terminal claw quite short.

The 2nd pair of caudal stylets (see figs. 3, 3 *a*) are distinguished by the considerable breadth and greatly compressed form of the trunk. The branches are, as in the 1st pair, simple conic, without either bristles or spines.

The last pair of caudal stylets (ibid.) are quite rudimentary, and so small as scarcely to project beyond the trunk of the preceding pair. They are, however, as in the other pairs, biramous, with the branches exceedingly small and short.

The telson (ibid.) is short and broad, almost quadrate, and not, as in the typical species, deeply incised, having merely a slight emargination at the extremity.

Colour in the recently taken specimen whitish, without any distinct pigmentation.

Length of the specimen secured $7^1/_2{}^{mm}$.

Occurrence and Distribution. — One individual only — to judge by the appearance a male — of this very distinct species was brought up, on the second cruise of the Expedition, in the sea west of Lofoten (Stat. 251), from a depth of 634 fathoms. A very young example, apparently belonging to the same species, I had previously taken off the coast of Finmark, at a depth of 150—200 fathoms. The Station mentioned above being in the cold area, the species may no doubt be regarded as an Arctic form.

Fam. 2. **Phoxidæ.**

Gen. 1. **Phoxus,** Kröyer, 1842.

Naturh. Tidsskrift, 1 Række, Bd. IV.

39. **Phoxus oculatus,** G. O. Sars, n. sp.

(Pl. XIII, Fig. 4, 4 *a—c*)

Phoxus oculatus, G. O. Sars, Crust. & Pycnogonida nova etc., No. 18.

Artscharacteristik. Legemet undersætsigt, med vel udviklede Epimerer. Hovedet oventil kun svagt hvælvet, med Pandepladen forholdsvis kort og næsten horizontal. 3die Bagkropssegments Sideplader bagtil udtrukne i en bred tungeformig Lap. Øinene tydelige, laterale, med mørkt

Fam. 2. **Phoxidæ.**

Gen. 1. **Phoxus,** Kröyer, 1842.

Naturh. Tidsskrift, 1 Række, Bd. IV.

39. **Phoxus oculatus,** G. O. Sars, n. sp.

(Pl. XIII, figs. 4, 4 *a—c*).

Phoxus oculatus, G. O. Sars, Crust. & Pycnogonida nova etc., No. 18.

Specific Character. — Body thickset, with well developed epimera. Head but slightly arched above, with frontal plate comparatively short and almost horizontal. Lateral plates of 3rd abdominal segment produced posteriorly to a broad linguiform lobe. Eyes distinct, lateral,

Pigment og vel udviklede Synselementer. Alle Borster uciliérede. 1ste Par Folere med Basalleddet af middelmaadig Størrelse. Bisvoben omtrent halvt saa lang som Svoben. 4-leddet. De 2 forreste Fodpar med Haanden oval og Griberanden kort samt nedentil begrændset af et stærkt tandformigt Fremspring. 5te Fodpars Hofteled pladeformigt udvidet. Sidste Fodpar kort, med Hofteleddet meget bredt og bagtil jevnt udbuet. Sidste Par Halefødder med den ydre Gren forlænget og sylformigt tilspidset. Halevedhænget af aflang Form, kloftet til Roden. Farven hvidgraa. Længden $5^1/_2{}^{mm}$.

Findested. Jan Mayen.

Bemærkninger. Nærværende Form er let kjendelig fra alle saavel til denne som den følgende Slægt hørende Arter ved de tydeligt udviklede, mørkt pigmenterede Øine. Fra *Ph. Holbölli* Kr. kjendes den desuden ved den mere undersætsige Kropsform, den kortere og stumpere Pandeplade og en noget forskjellig Form paa sidste Fodpars Hofteled.

Beskrivelse af Hunnen. Legemet er (se Pl. XIII. Fig. 4) forholdsvis meget kort og undersætsigt bygget, med bred, hvælvet Ryg og temmelig høie Epimerer.

Hovedet er omtrent saa langt som de 3 forreste Segmenter tilsammen, ovenfil svagt hvælvet og fortil som sædvanligt fremspringende over Roden af Folerne i Form af et Slags Pandehorn eller rettere Pandeplade. Spidsen af denne Pandeplade er mindre uddraget end hos *Ph. Holbölli* og ovenfra seet stumpt tilrundet.

De 4 forreste Par Epimerer er temmelig store, kjendeligt høiere end selve Kroppen og nedentil (se Fig. 4 *d*) besat med nogle simple, ikke ciliérede Børster. 4de Par er betydelig bredere end de øvrige og bagtil i sin øverste Del stærkt indskaaret for at kunne optage den forreste tungeformigt udløbende Lap af det følgende Par.

3die Bagkropssegments Sideplader er temmelig store og bagtil uddragne i en tungeformig, i Enden afrundet Lap. De 3 bageste Segmenter er meget korte og ovenfil jevnt hvælvede.

Øinene er hos denne Art meget tydeligt udviklede og har sin Plads som hos andre Amphipoder paa Siderne af Hovedet, lige over 2det Par Foleres Fæste. De er af afrundet Form og forsynede med mørkt Pigment og normalt udviklede Synselementer.

1ste Par Folere (Fig. 4 *a*) dækkes for en Del ovenfil af Pandepladen og træder frem til hver Side af samme. De er forholdsvis korte og undersætsigt byggede, dog ikke i den Grad som hos *Ph. Holbölli*. Basalleddet er noget længere end de 2 følgende Led tilsammen og betydelig tykkere. 2det Led har i den ene Kant en Rad af stærke uciliérede Børster. Svoben er noget kortere end Skaftet.

with a dark pigment and well-developed visual elements. All bristles non-ciliated. First pair of antennæ with basal joint moderate in size; secondary flagellum about half as long as true flagellum, and with 4 articulations. The 2 anterior pairs of legs with the hand oval and the palmar margin short, as also defined below by a prominently dentiform projection. Basal joint of 5th pair of legs lamelliform-dilated. Last pair of legs short, with basal joint very broad, and uniformly arched behind. Last pair of caudal stylets with outer plate elongate and awlshaped-acute. Telson oblong in form, cleft to the base. Colour whitish-grey. Length $5^1/_2{}^{mm}$.

Locality. — Shores of Jan Mayen.

Remarks. — The present form is readily distinguished from all other species belonging either to this or the succeeding genus, by the distinctly developed, darkly pigmented eyes. From *Ph. Holbölli* Kr. the animal may, too, be easily recognized by the more thickset form of body, the shorter and more obtuse frontal plate, as also by a somewhat different shape characterizing the basal joint of the last pair of legs.

Description of the Female. — The body (see Pl. XIII, fig. 4) comparatively very short and thickset in structure, with broad, arching back and rather deep epimera.

The head is about as long as the 3 anterior segments taken together, slightly arcuate above, and as usual projected anteriorly beyond the base of the antennæ, in the form of a kind of rostrum, or rather frontal plate. The point of this frontal plate is less produced than in *Ph. Holbölli*, and, when viewed from above, appears obtusely rounded.

The 4 anterior pairs of epimera are rather large, obviously higher than the body itself, and furnished below with a few simple, non-ciliated bristles. The 4th pair are considerably broader than the rest, and hindwards deeply incised in their upper half, for the reception of the foremost linguiform-protending lobe of the succeeding pair.

The lateral plates of the 3rd abdominal segment are comparatively large, and posteriorly produced to a linguiform, at the extremity, rounded lobe. The 3 posterior segments are very short, and uniformly arched above.

The eyes in this species are very distinctly developed, and, as in other Amphipods, placed on either side of the head, immediately above the points of attachment for the 2nd pair of antennæ. They are rounded in form, and furnished with a dark pigment as also normally developed visual elements.

The 1st pair of antennæ (fig. 4 *a*) are covered above to a great extent by the frontal plate, from either side of which they project. They are comparatively short and thickset in structure, though not so much so as in *Ph. Holbölli*. The basal joint is somewhat longer than the 2 succeeding articulations taken together, and considerably thicker. The 2nd articulation has on one of the margins a row of strong

meget tynd og sammensat af 6 Led. Bisvoben er neppe mere end halvt saa lang og 4-leddet.

2det Par Folere (Fig. 4 *b*) er ubetydeligt længere end 1ste Par og har de 2 basale Led stærkt opsvulmede og delvis skjulte under Hovedskjoldet. Skaftets næstsidste Led er noget udvidet mod Enden og temmelig rigeligt forsynet med Borster, der her ligesom overalt paa Legemet er uciliérede. Svoben er tynd, 8-leddet.

De 2 forreste Fodpar (Fig. 4 *c*) er indbyrdes fuldkommen af samme Bygning, temmelig kraftige, med Haanden af oval Form og Griberanden kort og noget skraa samt bagtil begrændset af et tydeligt tandformigt Fremspring, ved hvis Basis er fæstet en stærk Torn.

De 2 følgende Fodpar har 3die Led forholdsvis stort og tæt børstebesat, de 2 sidste temmelig smaa.

5te Fodpar har som hos de øvrige til denne Slægt hørende Arter Hofteleddet pladeformigt udvidet, de øvrige Led succesivt afsmalnende og temmelig rigeligt børstebesatte.

6te Fodpar er næsten dobbelt saa langt, med Hofteleddet næsten elliptiskt, de øvrige Led cylindriske med spredte tornformige Borster; Endekloen tynd og lige.

Sidste Fodpar er igjen meget kort, men har Hofteleddet særdeles stort, pladeformigt, med den bagre Rand jevnt bueformigt boiet og utydeligt saugtakket. Den øvrige Del af Foden er neppe længere end Hofteleddet og jevnt afsmalnende.

Sidste Par Halefødder (se Fig. 4 *e*) har den ydre Green stærkt forlænget og sylformigt tilspidset samt besat med en Del simple Borster. Den indre Green er meget kort, neppe mere end $^1/_3$ saa lang som den ydre.

Halevedhænget (ibid.) er af aflang Form og ved et smalt Indsnit kloftet lige til Roden i 2 symmetriske Halvdele.

Farven er hvidgraa, noget gjennemsigtig.

Længden overstiger neppe $5^1/_2{}^{mm}$.

Forekomst og Udbredning. Nogle faa Exemplarer af denne distincte Art toges under Expeditionens 2det Togt ved Sydkysten af Jan Mayen paa 15—20 Favnes Dyb. Samme Art har jeg ogsaa taget ved vor Kyst, nemlig i Varangerfjorden. Den er vistnok at betragte som en arktisk Form.

non-ciliated bristles. The flagellum is somewhat shorter than the peduncle, very slender, and composed of 6 articulations. The secondary flagellum is scarcely more than half as long, and has 4 articulations.

The 2nd pair of antennæ (fig. 4 *b*) are but very little longer than the 1st pair, and have the 2 basal joints greatly swollen, and in part covered by the cephalic shield. The penultimate joint of the peduncle is somewhat dilated towards the extremity, and rather abundantly provided with bristles, which here, as elsewhere on the body, are non-ciliated. The flagellum is slender, and composed of 8 articulations.

The 2 anterior pairs of legs (fig. 4 *c*) are perfectly uniform in structure, rather powerful, with the hand of an oval form and the palmar margin short and somewhat oblique, as also posteriorly defined by a well-marked dentiform projection, at the base of which occurs a strong spine.

The 2 succeeding pairs of legs have the 3rd articulation comparatively large and densely beset with bristles, the 2 last rather small.

The 5th pair of legs have, as in the other species belonging to this genus, the basal joint lamelliform-dilated, the remaining articulations successively tapering and rather abundantly furnished with bristles.

The 6th pair of legs are well-nigh double the length, with the basal joint almost elliptic in form, the remaining articulations cylindric, with scattered spiniform bristles. Terminal claw slender and straight.

The last pair of legs, again, are very short, but have the basal joint exceedingly large, lamelliform, with the posterior margin uniformly arched and indistinctly serrate. The remaining portion of the leg is scarcely at all longer than the basal joint, and tapers gradually.

The last pair of caudal stylets (see fig. 4 *e*) have the outer branch very considerably elongate and awlshaped-acute, as also beset with a number of simple bristles. The inner branch is very short, scarcely more than one-third as long as the outer.

The telson (ibid.) is oblong in form, and, by a narrow incision, cleft to the base into 2 symmetrical halves.

Colour a whitish-grey, semi-translucent.

Length scarcely exceeding $5^1{}_2{}^{mm}$.

Occurrence and Distribution. — A few individuals of this distinct species were obtained on the 2nd cruise of the Expedition, off the south-east coast of Jan Mayen, from a depth of 15—20 fathoms. The same species I have likewise taken on the Norwegian coast, viz. in the Varanger Fjord. It may no doubt be regarded as an Arctic form.

Gen. 2. **Harpinia**, Boeck, 1870.

Crust. amphip. bor. et arctica.

40. Harpinia abyssi, G. O. Sars, n. sp.

(Pl. XIII, Fig. 5, 5 *a*—*m*).

Harpinia abyssi, G. O. Sars, Crustacea & Pycnog. nova etc., No. 19.

Artscharacteristik. Legemet noget mindre undersætsigt, med bred Ryg og ikke meget store Epimerer. Hovedet oventil convext, med forholdsvis kort Pandeplade. 3die Bagkropssegments Sideplader bagtil jevnt afrundede; 4de Segment oventil puklet. De fleste Borster ciilierede. Ingen Øine. 1ste Par Følere med særdeles tykt og massivt Basalled, Svøberne korte, næsten af ens Længde. 2det Par Følere med Skaftets næstsidste Led stærkt udvidet. De 2 første Fodpar med Haanden omvendt pæreformig, Griberanden meget skjæv og bagtil begrændset af en stump Vinkel. 5te Fodpar med smalt lineært Hofteled. Sidste Fodpar særdeles lidet, med Hofteleddet af uregelmæssig Form, bredere end langt, bagtil stærkt udbuet, fortil i det nedre Hjørne skraat afkuttet og tæt besat med lange ciilierede Borster. Sidste Par Halefødder korte, med den ydre Green borstebesat, den indre noget kortere, sylformigt tilspidset, nøgen. Halevedhænget meget lidet, bredere end langt, kloftet til Midten. Farven graahvid. Længden indtil 13^{mm}.

Findesteder. Stat. 18. 31. 33, 40, 51, 87, 124, 192, 200, 240, 248, 251, 283, 295, 312.

Bemærkninger. Denne Art er let kjendelig fra de øvrige bekjendte Arter af Slægten, foruden ved sin forholdsvis betydelige Storrelse, ved den eiendommelige Form af sidste Fodpars Hofteled, ved de stumpt tilrundede Sideplader paa 3die Bagkropssegment samt ved det pukkelformige Fremspring, som det følgende Segment danner oventil.

Beskrivelse af Hunnen. Legemet er (se Pl. XIII, Fig. 5) noget mindre undersætsigt end hos den ovenfor beskrevne *Phoxus*-Art, men dog endnu temmelig plumpt, med bred Ryg og forholdsvis ikke meget høie Epimerer.

Hovedet er oventil temmelig stærkt hvælvet, med Pandepladen ikke meget uddraget og ovenfra seet stumpt afrundet.

De 4 forreste Par Epimerer er noget, skjøndt ikke meget høiere end selve Kroppen og i sin nedre Kant forsynede med en Rad af Borster. Disse sidste er her ligesom i Regelen ogsaa paa Lemmerne fint ciilierede (se Fig. 5 *h*). 4de Par er temmelig bredt og har den bagre Kant nedenfor Udrandningen jevnt buet. 5te Par (se Fig. 5 *i*) er af uregelmæssig transversal Form, med den forreste Del smalt kileformig, den bagerste betydelig dybere og noget vinklet.

Gen. 2. **Harpinia**, Boeck, 1870.

Crust. amphip. bor. et arctica.

40. Harpinia abyssi, G. O. Sars, n. sp.

Pl. XIII, figs. 5, 5 *a*—*m*).

Harpinia abyssi, G. O. Sars, Crustacea & Pycnog. nova etc., No. 19.

Specific Character. — Body somewhat less thickset, with the back broad and not very large epimera. Head convex above, with comparatively short frontal plate. Lateral plates of 3rd abdominal segment equably rounded behind; 4th segment hunched above. Most of the bristles ciliated. No eyes. First pair of antennæ with basal joint exceedingly thick and massive, flagella short, almost uniform in length. Second pair of antennæ with penultimate joint of peduncle greatly dilated. The first 2 pairs of legs with hand inverted-pyriform, palmar margin very oblique, and posteriorly defined by an obtuse angle. Fifth pair of legs with basal joint linear. Last pair of legs with basal joint irregular in form, broader than long, posteriorly very arcuate; anteriorly, oblique truncate in the lower corner, and closely beset with long, ciliated bristles. Last pair of caudal stylets short, outer branch beset with bristles, inner somewhat shorter, awlshaped-acute, naked. Telson very small, broader than long, cleft to the middle. Colour greyish-white. Length reaching 13^{mm}.

Locality. — Stats. 18. 31. 33, 40. 51. 87, 124, 192, 200, 240, 248, 251, 283, 295, 312.

Remarks. This form is easily distinguished from all other known species of the genus, not only by its comparatively very considerable size but also by the peculiar form characterizing the basal joint of the last pair of legs, by the obtusely rounded lateral plates on the 3rd abdominal segment, and finally by the hunched projection formed above by the succeeding segment.

Description of the Female. — The body (see Pl. XIII. fig. 5) is somewhat less thickset than in the *Phoxus* species described above, but still rather clumsy in form, having the back broad and the epimera relatively not very deep.

The head is considerably arched above, with the frontal plate not very much produced, and presenting, when viewed from above, an obtusely rounded appearance.

The 4 anterior pairs of epimera are somewhat, though not much, higher than the body itself, and furnished along the lower margin with a row of bristles, finely ciliated, as is generally the case, too, on the appendages (see fig. 5 *h*). The 4th pair are rather broad, and have the posterior border, below the emargination, uniformly arched. The 5th pair (see fig. 5 *i*) are irregular-transversal in form, with the anterior part slenderly wedge-shaped, the posterior considerably deeper and somewhat angular.

3die Bagkropssegments Sideplader er ikke bagtil udtrukne, men stumpt afrundede. 4de Segment viser oventil et pukkelformigt Fremspring.

Øine mangler ganske og aldeles.

1ste Par Folere (Fig. 5 *a*) er meget korte, med Basalleddet overordentlig massivt og opsvulmet. Svøberne er forholdsvis smaa og næsten af ens Længde. Hovedsvøben 6-leddet, Bisvøben 5-leddet.

2det Par Folere (Fig. 5 *b*) er ligeledes korte og robuste, med Skaftets næstsidste Led sammentrykt og dannende bagtil en bredt afrundet Lap, hvortil er fæstet en Rad af Fjærborster og en Del korte Torner. Svøben er forholdsvis liden og 6-leddet.

Kindbakkerne (Fig. 5 *c*) er kraftigt udviklede, med kort, men tydelig Tyggeknude og forholdsvis meget stor Palpe.

1ste Par Kjæver (Fig. 5 *d*) er derimod smaa, med Tyggelappen kort og skraat afskaaret i Enden. Palpen forholdsvis smal og den indre Lap rudimentær.

2det Par Kjæver (Fig. 5 *e*) har begge Lapper omtrent af ens Størrelse, men den indre stærkere børstebesat.

Kjævefødderne (Fig. 5 *f*) viser den sædvanlige Bygning. Den ydre Tyggelap er forholdsvis kort og forsynet med lange bøiede Borster. Palpen er vel udviklet, med sidste Led kloformigt.

De 2 forreste Fodpar (Fig. 5 *g*) har Haanden omvendt pæreformig og længere end de 3 foregaaende Led tilsammen. Griberanden er meget skraa og indtager Størsteparten af Haandens Længde samt begrændses bagtil kun af et stumpt Hjørne, hvortil er fæstet en enkelt Torn.

De 2 følgende Fodpar (Fig. 5 *h*) er af den sædvanlige Form, med 3die Led meget stort og ligesom de følgende i den bagre Kant tæt børstebesat.

5te Fodpar (Fig. 5 *i*) har som hos de øvrige Arter af denne Slægt Hofteleddet simpelt lineært, ikke som hos *Phoxus* pladeformigt udvidet. De øvrige Led er i begge Kanter tæt børstebesatte; Børsterne her som overalt fint ciliérede.

6te Fodpar (Fig. 5) er stærkt forlænget og temmelig kraftigt bygget, med Hofteleddet smalt ovalt, sidste Led længere end de øvrige og i den ene Kant besat med en tæt Rad af temmelig lange Borster.

Sidste Fodpar (Fig. 5 *k*) er særdeles lidet, med Hofteleddet som sædvanlig pladeformigt udvidet, men af en temmelig uregelmæssig Form og noget bredere end høit. Dets bagre Rand er stærkt udbuet og fint saugtakket samt forsynet med korte Borster; den forreste danner nedentil en fremspringende Vinkel og er nedenfor denne besat med en tæt Rad af lange Fjærborster. De øvrige Led aftager successivt i Størrelse og er temmelig rigeligt børstebesatte.

The lateral plates of the 3rd abdominal segment are not produced posteriorly, but obtusely rounded. The 4th segment exhibits above a hunched projection.

Eyes entirely wanting.

The 1st pair of antennæ (fig. 5 *a*) are very short, with the basal joint remarkably massive and swollen. The flagella are comparatively small and almost uniform in length; the principal flagellum has 6 articulations, the secondary 5.

The 2nd pair of antennæ (fig. 5 *b*) are likewise short, and robust in structure, with the penultimate joint of the peduncle compressed and forming posteriorly a broad, rounded lobe, to which are attached a series of plumous bristles and a number of short spines. The flagellum is comparatively small, and composed of 6 articulations.

The mandibles (fig. 5 *c*) are powerfully developed, with a small but distinct molar protuberance and a relatively very large palp.

The 1st pair of maxillæ (fig. 5 *d*), on the other hand are small, with the masticatory lobe short and obliquely truncate at the extremity, the palp comparatively slender, and the inner lobe rudimentary.

The 2nd pair of maxillæ (fig. 5 *e*) have the 2 lobes equal in size, but the inner more abundantly furnished with bristles.

The maxillipeds (fig. 5 *f*) exhibit the usual structure. The outer masticatory lobe is comparatively short, and provided with long, curving bristles. The palp is well developed, and has the terminal articulation unguiform.

The 2 anterior pairs of legs (fig. 5 *g*) have the hand inverted-pyriform and longer than the 3 preceding articulations taken together. The palmar margin — very oblique and occupying the greater part of the length of the hand — is limited behind by an obtuse corner only, bearing a single spine.

The 2 succeeding pairs of legs (fig. 5 *h*) are of the usual form, with the 3rd articulation very large, and, like the succeeding, densely beset with bristles along the posterior margin.

The 5th pair of legs (fig. 5 *i*) have, as in the other species belonging to this genus, the basal joint simple linear, not as in *Phoxus* lamelliform-dilated. The remaining articulations are, along both margins, densely beset with bristles, and here as elsewhere finely ciliated.

The 6th pair of legs (fig. 5) are very elongate and rather powerful in structure, with the basal joint slenderly oval, the last articulation longer than the rest and furnished along one of the margins with a close series of rather long bristles.

The last pair of legs (fig. 5 *k*) are exceedingly small, with the basal joint, as usual, lamelliform-dilated, but somewhat irregular in shape, and a trifle broader than high. Its posterior margin is strongly arched and finely serrate, as also furnished with short bristles; the anterior forms below a projecting angle, beneath which it has a close series of long plumous bristles. The remaining articulations diminish successively in size, and are rather abundantly provided with bristles.

Sidste Par Halefodder (Fig. 5 *l*) er forholdsvis korte og overrager neppe det foregaaende Par. Af Grenene er den ydre forsynet med en Rad Borster i den ene Kant; den indre er noget kortere, sylformigt tilspidset og borstelos.

Halevedhænget (Fig. 5 *m*) er særdeles kort og bagtil forsynet med et vinkelformigt Indsnit, der dog ikke strækker sig længere end til Midten af Vedhængets Længde; Sidelapperne er i Spidsen afstumpede.

Farven er som hos de øvrige Arter ensformig graahvid uden Pigment.

Længden gaar op til 13^{mm} og er saaledes betydelig større end hos nogen af de tidligere bekjendte Arter.

Forekomst og Udbredning. Nærværende Art synes at være en af de for Nordhavets større Dybder mest characteristiske *Amphipoder*. Vi har noteret den fra ikke mindre end 15 forskjellige Stationer, alle tilhørende den kolde Area, Dybden fra 350 til 1215 Favne.

Artens for Tiden bekjendte Udbredningsfelt er herefter Nordhavets større Dyb fra den 63de til den 75de Bredegrad og fra 16° O. L. til 12° V. L.

The last pair of caudal stylets (fig. 5 *l*) are comparatively short, projecting scarcely at all over the preceding pair. Of the branches, the outer is provided with a row of bristles along one of the margins; the inner is somewhat shorter, awlshaped-acute, and without bristles.

The telson (fig. 5 *m*) is exceedingly short, and has posteriorly an angular incision, which, however, does not extend farther down than the middle of the appendage; the lateral lobes are obtuse at the extremity.

Colour, as in the other species, a uniform whitish-grey, without any distinct pigmentation.

Length reaching 13^{mm}, and hence greater than in any of the previously known species.

Occurrence and Distribution. — The present species would seem to be one of the *Amphipods* most peculiar to the great depths of the Northern Ocean. We have recorded the animal from not less than 15 different Stations, all in the cold area; depth ranging from 350 to 2215 fathoms.

Hence, the tract of distribution throughout which the species is at precent known to occur, comprises the great depths of the Northern Ocean, extending from the 63rd to the 75th parallel of latitude and from long. 16° E. to long. 12° W.

41. Harpinia carinata, G. O. Sars, n. sp.

(Pl. XIII, Fig. 6, 6 *a*—*c*).

Harpinia carinata, G. O. Sars, Crust. & Pycnog. nova etc., No. 20.

Artskarakteristik. Legemet noget sammentrykt, med Bagkroppen ovenfil tydeligt kjølet, 4de og sidste Bagkropssegments Kjøl adskilt ved et dybt Indsnit. Pandepladen kort og stump. 3die Bagkropssegments Sideplader bagtil stumpt afrundede. Ingen Øine. Folerne særdeles robuste, begges Skaft foruden de sædvanlige Borster forsynet paa den indre Side med tætte Knipper af fine Cilier. De 5 forreste Fodpar omtrent som hos foregaaende Art. 6te Fodpar med de ydre Led kun forsynede med korte Torner. Sidste Fodpar med Hofteleddet stærkt udvidet, bagtil jevnt buet, fortil ikke vinklet. Sidste Par Halefodder med begge Grene membranøse, lancetformige og i Kanterne forsynede med korte Haar. Halevedhænget klovet til Roden. Farven graahvid. Længden 10^{mm}.

Findesteder. Stat. 248, 312.

Bemærkninger. De 2 foreliggende Exemplarer af nærværende Form har alle Characterer af at være Hanner,

41. Harpinia carinata, G. O. Sars, n. sp.

(Pl. XIII, figs. 6, 6 *a*—*c*).

Harpinia carinata, G. O. Sars, Crust. & Pycnog. nova etc., No. 20.

Specific Character. — Body somewhat compressed, with posterior division distinctly carinated above; keels of 4th and last abdominal segments separated by a deep incision. Frontal plate short and obtuse. Lateral plates of 3rd abdominal segment obtusely rounded posteriorly. No eyes. Antennæ exceedingly robust, with peduncles of both, exclusive of the usual bristles, having on inner side close-set fascicles of delicate cilia. The 5 anterior pairs of legs about as in the preceding species. Sixth pair of legs with outer articulation provided merely with short spines. Last pair of legs with basal joint greatly dilated, posteriorly uniformly arched, anteriorly not angular. Last pair of caudal stylets with both branches membranous, lanceolate, and clothed along the edges with short hairs. Telson cleft to base. Colour greyish-white. Length 10^{mm}.

Locality. — Stats. 248, 312.

Remarks. — The 2 specimens obtained of the present form exhibit every characteristic of being males, and indeed

og jeg har en Tid været i Tvivl om de ikke maaske kunde være Hanner af foregaaende Art. De skiller sig imidlertid, som det vil sees, ikke blot i Folernes Bygning, men ogsaa i enkelte andre Characterer, som ikke pleier at være modificerede hos Hannerne (f. Ex. den tydeligt kjølede Bagkrop, Formen af de 2 bagre Fodpar og Halevedhængene), hvorfor jeg foretrækker indtil videre at beskrive dem som tilhørende en selvstændig Art.

Beskrivelse. Legemets Form er (se Pl. XIII, Fig. 6) i det væsentlige som hos foregaaende Art, dog noget mere sammentrykt fra Siderne, med mindre bred Ryg og forholdsvis lavere Epimerer.

Hovedet er som hos foregaaende Art oventil temmelig stærkt hvælvet og Pandepladen forholdsvis kort og bred.

Bagkroppen viser oventil i hele sin Længde en meget tydeligt markeret Længdekjøl, der dog bagtil bliver afbrudt ved et dybt Indsnit mellem 4de og sidste Segment. Sidepladerne paa 3die Segment er som hos *H. abyssi* bagtil stumpt tilrundede.

Øine mangler ogsaa her fuldstændigt.

Folerne (Fig. 6 *a* og *b*) er særdeles robuste og i høi Grad udmærkede derved, at Skaftet paa begge foruden de sædvanlige Børster viser paa den indre Side en særdeles tæt Besætning af eiendommelige fine Cilier, der i sin Bygning nærmest synes at svare til de hos andre *Amphipoder* alene til 1ste Pars Svøbe indskrænkede klare Sandseborster. Disse Cilier er grupperede i tætte kostformige Knipper og rager delvis frem foran Folernes forreste Kanter. Bisvøben paa 1ste Par er kjendeligt kortere end Hovedsvøben, og Svøben paa 2det Par synes forholdsvis mindre end hos foregaaende Art.

De 2 forreste Fodpar (Fig. 6 *c*) har Haanden noget mere forlænget og det Griberanden bagtil begrændsende Hjørne stumpere.

De 3 følgende Fodpar viser ikke nogen bemærkelig Forskjel fra samme hos foregaaende Art.

6te Fodpar (se Fig. 6) er forholdsvis endnu noget stærkere forlænget end hos *H. abyssi*, og dets yderste Led er her kun besat med korte og spredte Torner.

Sidste Fodpar (Fig. 6 *d*) er temmelig uligt samme hos foregaaende Art, idet Hofteleddet er større og mere regelmæssigt afrundet, med den bagre Rand ganske jevnt buet og den forreste lige, uden det stærke vinkelformige Fremspring nedentil, som udmærker dette Fodpar hos *H. abyssi*.

Sidste Par Halefødder (Fig. 6 *e*) skiller sig ligeledes meget væsentligt fra samme hos foregaaende Art. De er forholdsvis betydelig større, og Endegrenene er af en eiendommelig membranos Beskaffenhed, lancetdannede og i Kanterne besatte med nogle meget smaa og spredte Haar.

I was some time in doubt, whether they might not after all be males of the preceding species. Meanwhile, they differ, as will appear, not only in the structure of the antennæ, but likewise in divers other characters, not usually found modified in the males (for example, the distinctly keeled posterior division of the body, the form of the 2 posterior pairs of legs and of the telson); and hence I have, for the present, seen fit to record the animal as a separate species.

Description. — Form of the body (see Pl. XIII, fig. 6) essentially similar to that in the preceding species, though much more compressed from the sides, with the back less broad and relatively smaller epimera.

The head, as in the preceding species, rather prominently arched above, and the frontal plate comparatively short and broad.

The posterior division of the body exhibits above, throughout its entire length, a very distinctly marked longitudinal carina, which, however, posteriorly, is severed by a deep incision between the 4th and terminal segments. The lateral plates on the 3rd segment are, as in *H. abyssi*, obtusely rounded posteriorly.

Eyes in this form, too, entirely wanting.

The antennæ (figs. 6 *a*, *b*) are exceedingly robust, and very prominently characterized by the peduncle on each pair, apart from the usual bristles, exhibiting along the inner side an exceedingly dense clothing of peculiar, delicate cilia which, in their structure, would seem to approximate closest the translucent sensory bristles exclusively confined in other *Amphipods* to the flagellum of the 1st pair. These cilia are grouped in close-set, scopiform fascicles, and project in part beyond the anterior margins of the antennæ. The secondary flagellum on the 1st pair is appreciably shorter than the principal flagellum; and the flagellum on the 2nd pair would seem to be relatively smaller than in the preceding species.

The 2 anterior pairs of legs (fig. 6 *c*) have the hand a trifle more elongate and the corner posteriorly defining the palmar margin obtuser.

The 3 succeeding pairs of legs do not exhibit any appreciable difference from those pairs in the preceding species.

The 6th pair of legs (see fig. 6) are relatively still more elongate than in *H. abyssi*, and the outermost articulation of this pair is furnished merely with short and scattered spines.

The last pair of legs (fig. 6 *d*) are rather unlike that pair in the preceding species, the basal joint being larger and more regularly rounded, with the posterior margin uniformly arched and the anterior straight, without the strong angular projection below distinguishing the said pair of legs in *H. abyssi*.

The last pair of caudal stylets (fig. 6 *e*) differ likewise essentially from those in the preceding species. They are relatively much larger, and the terminal branches, lanceolate in form, exhibit a peculiar membranous structure having along the margins a few exceedingly minute and scattered hairs.

Halevedhænget (ibid.) er lige til Roden kloftet, med Sidelapperne i Spidsen smalt tilrundede.

Farven er som hos foregaaende Art ensformig graahvid.

Længden af det største af de undersøgte Exemplarer var 10^{mm}.

Forekomst. Kun 2 Exemplarer af denne Form blev under vor Expedition indsamlede, det ene langt ude i Havet Vest af Lofoten (Stat. 248), det andet Nordvest af Beeren Eiland (Stat. 312). Dybden fra 658 til 778 Favne. Begge Stationer tilhører den kolde Area.

The telson (ibid.) is cleft to the base, with the lateral lobes narrowly rounded at the extremity.

Colour, as in the preceding species, a uniform greyish-white.

Length of the largest specimen examined 10^{mm}.

Occurrence. — Only 2 examples of this form were taken on the Norwegian North-Atlantic Expedition, the one far out at sea, west of Lofoten (Stat. 248), the other north-west of Beeren Eiland (Stat. 312); depth 658 and 778 fathoms. Both Stations in the cold area.

42. **Harpinia mucronata**, G. O. Sars, n. sp.

(Pl. XIII. Fig. 7, 7 *a—g*).

Harpinia mucronata, G. O. Sars, Crust. & Pycnog. nova etc., No. 22.

Artscharacteristik. Legemet mindre undersætsigt, med jevnt hvælvet Rygside og forholdsvis meget store Epimerer. Hovedet oventil kun lidet convext, med næsten horizontal Pandeplade. 3die Bagkropssegments Sideplader bagtil uddragne i en skarp opadbøiet Hage. Ingen Øine. Folerne mindre robuste end hos de 2 foregaaende Arter. De 2 forreste Fodpar med uregelmæssig oval Haand og Griberanden bagtil begrændset af et tydeligt Fremspring. 6te Fodpar mindre stærkt forlænget. Sidste Fodpar med Hofteleddet forholdsvis lidet og bagtil udtrukket i en lang og skarp dolkformig Fortsats. Sidste Par Halefødder omtrent som hos *H. abyssi*. Halevedhænget kort, næsten til Roden kloftet. Farven hvidgraa. Længden 5^{mm}.

Findesteder. Stat. 200, 262.

Bemærkninger. Denne lille Art er let kjendelig ved den stærke hageformige Spids, som 3die Bagkropssegments Sideplader danner bagtil, samt ved den meget eiendommelige Form af sidste Fodpars Hofteled.

Beskrivelse af Hunnen. Legemet er (se Pl. XIII. Fig. 7) forholdsvis spinklere bygget end hos de øvrige Arter af Slægten og noget sammentrykt, dog med rund Ryg.

Hovedet er kjendeligt længere end de 3 forreste Segmenter tilsammen og oventil kun svagt hvælvet, med Pandepladen næsten horizontal.

De 4 forreste Par Epimerer er forholdsvis ikke meget store, neppe synderligt høiere end selve Kroppen og viser i den nedre Kant et begrændset Antal (sædvanlig 4) af ciliérede Børster. 4de Par er bagtil nedenfor Udrandningen stumpt afrundet.

42. **Harpinia mucronata**, G. O. Sars, n. sp.

(Pl. XIII. figs. 7, 7 *a—g*).

Harpinia mucronata, G. O. Sars, Crust. & Pycnog. nova etc., No. 22.

Specific Character. — Body less thickset, with dorsal face uniformly arched and not very large epimera. Head but slightly convex above, with frontal plate almost horizontal. Lateral plates of 3rd abdominal segment produced posteriorly to a sharp, upward-bent hook. No eyes. Antennæ less robust in structure than in the 2 preceding species. The 2 anterior pairs of legs with hand regularly oval and palmar margin defined posteriorly by a distinct projection. Sixth pair of legs less prominently elongate. Last pair of legs with basal joint comparatively small, and jutting out posteriorly as a long and sharp dagger-shaped projection. Last pair of caudal stylets about as in *H. abyssi*. Telson short, cleft almost to the base. Colour whitish-grey. Length 5^{mm}.

Locality. — Stats. 200, 262.

Remarks. — This small species is easily distinguished by the strong, hook-shaped point formed posteriorly by the lateral plates of the 3rd abdominal segment, as also by the very peculiar form characterizing the basal joint of the last pair of legs.

Description of the Female. — The body (see Pl. XIII, fig. 7) has a relatively more slender form than in the other species of the genus, and is somewhat compressed, though with the back round.

The head is appreciably longer than the 3 anterior segments taken together, and but slightly arched above, with the frontal plate well-nigh horizontal.

The 4 anterior pairs of epimera are relatively not very large, being scarcely at all higher than the body, and bear on the lower margin a limited number (as a rule 4) of ciliated bristles. The 4th pair are obtusely rounded posteriorly, below the emargination.

3die Bagkropssegments Sideplader er bagtil udtrukne i en usædvanlig stærkt udviklet, skarp, opadkrummet hageformig Fortsats, ovenfor hvilken er tæstet en Rad af Fjærborster (se Fig. 7 *g*). De bagre Segmenter er oventil jevnt hvælvede uden nogen Kjøl eller pukkelformige Fremspring.

Øine mangler ganske ligesom hos de foregaaende Arter.

Folerne (Fig. 7 *a—b*) er mindre robuste end hos de 2 foregaaende Arter, forovrigt af den sædvanlige Bygning.

De 2 første Fodpar (Fig. 7 *c*) har Haanden af regelmæssig oval Form, med Griberanden temmelig skraa og bagtil begrændset af et tydeligt Fremspring, der omtrent ligger lige langt fra Basis som fra Spidsen af Haanden, og er bevæbnet med den sædvanlige Torn.

6te Fodpar (se Fig. 7) er forholdsvis noget mindre forlænget og svagere bygget end hos de 2 foregaaende Arter og har sidste Led neppe længere end det foregaaende.

Sidste Fodpar (Fig. 7 *d*) udmærker sig i høi Grad ved Hofteleddets eiendommelige Form. Dette er forholdsvis betydelig mindre end hos de øvrige Arter og har det nedre bagre Hjørne udtrukket i en skarp dolkformig Fortsats, der er rettet lige bagud og oventil ved et lidet Indsnit er skarpt begrændset fra den kun svagt buede bagre Rand; nedentil viser denne Fortsats 2 korte Saugtakker.

Bagkroppens Vedhæng ligner meget samme hos *H. abyssi*, dog med den Forskjel, at Halevedhænget (Fig. 7 *f*) er dybere kloftet.

Farven er den sædvanlige ensformig graahvide, her imidlertid noget mere gjennemsigtig.

Længden synes ikke at overskride 5^{mm}.

Forekomst og Udbredning. Nogle faa Exemplarer af denne distincte Art er under Expeditionen indsamlede paa 2 forskjellige Stationer, den ene (St. 200) beliggende i Havet NV af Finmarken, Dybden 620 Favne, den 2den (St. 262) lige Ost af Vardø, Dybden 148 Favne. Da ialfald den ene af disse Stationer tilhører den kolde Area og den anden tilhører det i sin Fauna idethele arktiske Osthav, maa Arten vistnok ansees for at være af høinordisk Oprindelse.

The lateral plates of the 3rd abdominal segment are drawn out posteriorly to a remarkably strong-developed, sharp, upward-curving, hook-shaped projection, above which extend a series of plumous bristles (see fig. 7 *g*). The posterior segments are uniformly arched above, without any keel or hunched projection.

No trace of eyes, as in the preceding species.

The antennæ (figs. 7 *a—b*) are less robust than in the 2 preceding species, but, for the rest, of the usual structure.

The 2 anterior pairs of legs (fig. 7 *c*) have the hand of a regular oval form, with the palmar margin rather oblique and defined posteriorly by a distinct projection, placed about as far from the base as from the point of the hand, and bearing the usual spine.

The 6th pair of legs (see fig. 7) occur relatively somewhat less produced and more feeble in structure than are those of the 2 foregoing species, having also the terminal articulation scarcely at all longer than the preceding.

The last pair of legs (fig. 7 *d*) are highly characterized by the peculiar form of the basal joint, which is relatively much smaller than in the other species, and has the lower posterior corner jutting out as a sharp, dagger-shaped projection, directed straight backwards, and sharply defined above, by a small incision, from the faintly arcuate posterior margin; below, this projection exhibits 2 short teeth.

The abdominal appendage presents very considerable resemblance to that in *H. abyssi*, saving however that the telson (fig. 7 *f*) is more deeply cleft.

Colour, as usual, a uniform greyish-white — in this animal, however, somewhat more translucent.

Length apparently not exceeding 5^{mm}.

Occurrence and Distribution. — A few examples of this distinct species were collected on the Expedition, at 2 different Stations, one (Stat. 200) in the sea north-west of Finmark, depth 620 fathoms, the other (Stat. 262) due east of Vardø, depth 148 fathoms. One, at least, of these Stations having been in the cold area, and the other in the Barents' Sea, a tract of ocean on the whole essentially polar as regards its Fauna, the present form is unquestionably of Arctic origin.

43. Harpinia serrata, G. O. Sars, n. sp.

(Pl. XIII, Fig. 8, 8 *a—d*).

Harpinia serrata, G. O. Sars, Crust. & Pycnog. nova etc., No. 21.

Artscharacteristik. Legemet kort og tykt, med temmelig store Epimerer. Hovedet oventil stærkt hvælvet, med Pandepladen noget nedadkrummet. De 3 forreste Bagkrops-

43. Harpinia serrata, G. O. Sars, n. sp.

(Pl. XIII, figs. 8, 8 *a—d*).

Harpinia serrata, G. O. Sars, Crust. & Pycnog. nova etc., No. 21.

Specific Character. — Body short and thick, with rather large epimera. Head strongly arched above, with frontal plate curving slightly downward. The 3 anterior

segmenter oventil tæt haarede; Sidepladerne paa 3die Segment forholdsvis smaa og bagtil uddragne i et spidst, noget opadkrummet Hjorne. Ingen Øine. Folerne korte, af sædvanlig Bygning. De 2 første Fodpar med Haanden af en lignende Form som hos *H. mucronata*. Sidste Fodpar med Hofteleddet bagtil stærkt udbuet og delt i 6 triangulært tilspidsede Fortsatser eller grove Saugtakker. Halefodderne og Halevedhænget som hos foregaaende Art. Farven graaagtig. Længden 6‴.

Findested. Stat. 224.

Bemærkninger. Nærværende Art staar meget nær *H. plumosa* Kr., men kjendes let ved de oventil tæt haarede forreste Bagkropssegmenter og navnlig ved den eiendommelige og meget iøinefaldende Bevæbning af sidste Fodpars Hofteled, hvilken sidste Character har givet Anledning til Artsbenævnelsen.

Beskrivelse af Hunnen. Legemet er (se Pl. XIII, Fig. 8) af meget kort og undersætsig Form, med Forkroppen temmelig opblæst og Epimererne mere udviklede end hos de foregaaende Arter.

Hovedet er ogsaa forholdsvis større og oventil stærkere hvælvet, saa at Pandepladen viser sig tydeligt nedadkrummet.

De 4 Par forreste Epimerer er kjendeligt høiere end selve Kroppen og i sin nedre Kant forsynede med en Rad af ciliærede Børster.

De 3 forreste Bagkropssegmenter er oventil tæt besatte med korte Børster, der giver dem et eget laaddent Udseende. Deres Sideplader er forholdsvis betydelig lavere end hos de foregaaende Arter, og de paa 3die Segment er bagtil udtrukne i et spidst, noget opadkrummet Hjørne. De følgende Segmenter er oventil jevnt hvælvede, uden Kjøl eller Fortsatser.

Af Øine er her ligesaalidt som hos de i det foregaaende omtalte Arter noget Spor at se.

Folerne (Fig. 8 *a—b*) er temmelig korte og robuste, forøvrigt af sædvanlig Bygning.

De 2 forreste Fodpar (Fig. 8 *c*) har Haanden næsten nøiagtig af samme Form som hos foregaaende Art.

6te Fodpar (se Fig. 8) er ogsaa meget overensstemmende bygget, men forholdsvis noget længere og kraftigere.

Sidste Fodpar (Fig. 8 *d*) viser derimod i Formen og Bevæbningen af Hofteleddet en meget iøinefaldende Forskjel fra alle øvrige bekjendte Arter. Dette Led er som sædvanlig pladeformigt udvidet, men den bagre Udvidning er meget skraa, saa at den overrager 3die Led, og dens Kanter er ved regelmæssige Indsnit delt i 6 triangulært tilspidsede Fortsatser eller grove Saugtakker, imellem hvilke staar frem korte Børster.

abdominal segments densely pubescent above; lateral plates on 3rd segment comparatively small, and produced posteriorly to a sharp, somewhat upward-curving corner. No eyes. Antennæ short, of the usual structure. The 2 first pairs of legs with hand of a similar form to that in *H. mucronata*. Last pair of legs having posterior margin of basal joint exceedingly arcuate, and divided into 6 triangular-acute projections, or coarse teeth. Caudal stylets and telson as in preceding species. Colour greyish. Length 6‴.

Locality, — Stat. 224.

Remarks. — The present species approximates very closely *H. plumosa* Kr., but is easily recognized by the anterior abdominal segments being densely pubescent above, and more especially by the peculiar and very conspicuous armature distinguishing the basal joint of the last pair of legs, — a character, indeed, from which the specific designation is derived.

Description of the Female. — The body (see Pl. XIII, fig. 8) is exceedingly short and thickset, with the anterior division rather inflated, and the epimera more developed than in the preceding species.

The head, too, occurs relatively larger and more prominently arched above, giving to the frontal plate a distinct appearance of being curved downwards.

The 4 anterior pairs of epimera are appreciably higher than the body itself, and furnished along the lower margin with a series of ciliated bristles.

The 3 anterior abdominal segments are closely beset above with short bristles, that give them a characteristic pubescent appearance. Their lateral plates are relatively much smaller than in the preceding forms, and those on the 3rd segment are produced posteriorly to an acute, somewhat upward-curving corner. The succeeding segments are uniformly arched above, without either keel or projection.

Of eyes, as in the preceding species, not a trace could be detected.

The antennæ (fig. 8 *a—b*) are rather short and robust, for the rest normal in structure.

The 2 anterior pairs of legs (fig. 8 *c*) have the hand of almost precisely the same form as in the preceding species.

The 6th pair of legs (see fig. 8) exhibit, too, very considerable agreement as to structure, but are relatively somewhat longer and more powerful.

The last pair of legs (fig. 8 *d*) differ, on the other hand, most conspicuously in the form and armature of the basal joint from all other known species. This articulation is, as usual, lamelliform-dilated, but the posterior dilatation is very oblique, projecting beyond the 3rd joint, and its margins are divided by regular incisions into 6 triangular-pointed projections, or coarse serratures, between which rise a number of short bristles.

I Bagkroppens Vedhæng er ingen væsentlig Afvigelse fra den sædvanlige Bygning at notere.

Farven er ensformig graaagtig, uden Pigment.

Længden af de undersøgte Exemplarer overstiger neppe 6^{mm}.

Forekomst og Udbredning. 3 Exemplarer af denne Art toges under Expeditionens 2det Togt Syd af Jan Mayen (Stat. 224) paa circa 100 Favnes Dyb. Denne Art har jeg ogsaa fra Varangerfjorden. Den er uden Tvivl at betragte som en arktisk Form.

In the abdominal appendage there is no essential deviation in structure to be recorded.

Colour a uniform greyish-white, without pigment.

Length of the specimens examined scarcely exceeding 6^{mm}.

Occurrence and Distribution. — Three examples of this species were taken on the 2nd cruise of the Expedition, south of Jan Mayen (Stat. 224); depth about 100 fathoms. The same species I have also obtained in the Varanger Fjord. It may doubtless be regarded as an Arctic form.

Gen. 3. **Urothoë**, Dana, 1852.

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44. Urothoë abbreviata, G. O. Sars, n. sp.

Pl. XIV, Fig. 1).

Urothoë abbreviata, G. O. Sars, Crustacea & Pycnogonida nova etc., No. 23.

Artscharacteristik. Legemet kort og undersætsigt, med smaa Epimerer. Hovedet stort, fortil afsmalnende, bagtil til hver Side forsynet med en udstaaende tilspidset Flig. 3die Bagkropssegments Sideplader bagtil retvinklede. Ingen Øine. 1ste Par Folere meget længere end 2det Par, med Skaftets 3 Led af ens Længde. Svøben kort, Bisvøben rudimentær. De 2 forreste Fodpar med liden Haand og stor Carpus. De 3 bagre Par særdeles robuste, med Leddene fortykkede og piggede. Sidste Par Halefødder meget smaa. Halevedhænget dybt kloftet. Farven hvidagtig. Længden 3^{mm}.

Findested. Stat. 200.

Bemærkninger. Fra de øvrige Arter af Slægten kjendes denne lille Art ved sin overordentlig korte og undersætsige Kropsform, de eiendommeligt formede 1ste Par Folere, Mangelen af Øine, og ved de korte sidste Par Halefødder.

Beskrivelse. Legemet er (se Pl. XIV, Fig. 1) ualmindelig kort og undersætsigt, bredere end høit og saaledes, uligt hvad Tilfældet pleier at være med Amphipoderne, hellere nedtrykt end sammentrykt, hvorfor det ogsaa er forbunden med adskillig Vanskelighed at faa et correct Sidevue af Dyret.

Hovedet er forholdsvis stort, omtrent af samme Længde som de 4 forreste Segmenter tilsammen. Det løber fortil noget coniskt til og har Sidekanterne skraat nedadstigende

Gen. 3. **Urothoë**, Dana, 1852.

Amer. Journ. of Science and Arts XIV.

44. Urothoë abbreviata, G. O. Sars, n. sp.

Pl. XIV, fig. 1).

Urothoë abbreviata, G. O. Sars, Crustacea & Pycnogonida nova etc., No. 23.

Specific Character. — Body short and thickset, with small epimera. Head large, tapering anteriorly, posteriorly furnished on either side with a projecting, acute lappet. Lateral plates on 3rd abdominal segment rectangular posteriorly. No eyes. First pair of antennæ much longer than 2nd, with the 3 joints of peduncle uniform in length; flagellum short, secondary flagellum rudimentary. The two anterior pairs of legs with hand small and carpus large. The three posterior pairs exceedingly robust, with the joints inspissated and spinous. Last pair of caudal stylets very small. Telson deeply cleft. Colour whitish. Length 3^{mm}.

Locality. — Stat. 200.

Remarks. — From the other species of the genus, this diminutive form is easily recognized by its remarkably short and thickset body, the peculiar form distinguishing the 1st pair of antennæ, the absence of eyes, and by the short last pair of caudal stylets.

Description. — The body (see Pl. XIV, fig. 1) remarkably short and thickset, broader than high, and thus, contrary to what, as a rule, is the case with Amphipods, rather depressed than compressed; hence, it proves a matter of no little difficulty to obtain a perfect side-view of the animal.

The head is comparatively large, about equal in length to the 4 anterior segments taken together. It runs out anteriorly in a conical form, and has the lateral margins

og bagtil endende med en fremstaaende triangulært tilspidset Flig.

Forkropssegmenterne er meget korte og brede; de til dem horende Epimerer særdeles smaa. De 4 forreste Par af disse sidste er noget skraat fortilrettede og nedad jevnt tilrundede; de 3 bagerste svagt 2-lappede.

De forreste Bagkropssegmenter er temmelig hoie og tiltager hurtigt i Storrelse, saa at 3die Segment næsten er ligesaa stort som de 2 foregaaende tilsammen; dets Sideplader ender bagtil med et omtrent retvinklet Hjorne. De 3 bagerste Segmenter er særdeles korte.

Øine synes ganske og aldeles at mangle.

1ste Par Folere er temmelig forlængede og ulige samme hos de ovrige bekjendte Arter. Skaftets 3 Led er indbyrdes omtrent af ens Længde, uden Borster og noget fortykkede paa Midten eller adskilte ved bemærkelige Indsnoringer. Svoben er neppe mere end halvt saa lang som Skaftet, sylformig tilspidset og kun bestaaende af 4 Led. Bisvoben er ganske rudimentær, 1-leddet.

2det Par Folere er rettede udad og bagtil langs Siderne af Legemet og derfor vanskelige at undersoge uden Dissection. De er betydelig kortere end 1ste Par og har Skaftets 2 sidste Led i begge Kanter besatte med stive Borster.

De 2 forreste Fodpar er indbyrdes af ens Bygning, men af noget ulige Storrelse. Næstsidste Led eller Carpus er meget stort og bredt, hvorimod selve Haanden er forholdsvis liden.

De 2 følgende Par er kraftigt udviklede og tæt børstebesatte.

5te Par er af særdeles robust Bygning, med Hofteleddet kort og bredt, de ovrige Led i Enden stærkt udvidede og besatte med knippevis ordnede Torner; Endekloen næsten lige.

De 2 bagre Par er af en lignende plump Bygning, men er noget mere forlængede, med Hofteleddet storre og af oval Form; paa 6te Fodpar er dette Led i Kanterne besat med lange og stive saugtakkede Borster.

De 2 bagre Par Halefødder er meget smaa og af ens Bygning, uden tydelige Borster eller Torner.

Halevedhænget er forholdsvis lidet og dybt kloftet.

Farven var paa det friskt indfangede Exemplar hvidagtig noget spillende i det gule.

Længden er kun 3^{mm}.

Forekomst. Et enkelt Exemplar af denne lille Art erholdtes under Expeditionens 2det Togt i Havet NV. af Finmarken (St. 200) fra et Dyb af 620 Favne. Stationen tilhører den kolde Area.

obliquely descending, and posteriorly, terminating in a prominent triangular-pointed lappet.

The thoracic segments are very short and broad, and their epimera exceedingly small. The 4 anterior pairs of the latter occur directed somewhat obliquely forward, below uniformly rounded; the 3 posterior faintly bilobular.

The anterior abdominal segments are rather high and increase rapidly in size, the 3rd segment being almost as large as the 2 preceding ones taken together; and its lateral plates terminate posteriorly in a well-nigh rectangular corner. The 3 posterior segments are exceedingly short.

Eyes would appear to be absolutely wanting.

The 1st pair of antennæ are rather elongate, and unlike those in all other known species. The 3 joints of the peduncle are about equal in length, without bristles, and somewhat inspissated in the middle, or rather separated by appreciable instrictions. The flagellum is scarcely half as long as the peduncle, awlshaped-acute, and composed of only 4 articulations. The secondary flagellum is quite rudimentary, uni-articulate.

The 2nd pair of antennæ are directed outward and backward along the sides of the body, and therefore difficult to examine without dissection. They are considerably shorter than the 1st pair, and have the 2 last joints of the peduncle beset along both margins with stiff bristles.

The 2 anterior pairs of legs are uniform in structure, but of somewhat unequal size. The penultimate joint, or carpus, is very large and broad, whereas the hand itself is comparatively small.

The 2 succeeding pairs are powerfully developed and closely beset with bristles.

The 5th pair are exceedingly robust in structure, with the basal joint short and broad, the remaining articulations greatly dilated at the extremity and armed with fascicles of spines; terminal claw almost straight.

The 2 posterior pairs are likewise clumsy in structure, but a trifle more elongate, with the basal joint larger and oval in form; on the 6th pair of legs, this articulation is beset along the margins with long and stiff serrate bristles.

The 2 posterior pairs of caudal stylets are very small, and uniform in structure, without distinct bristles or spines.

The telson is comparatively small, and deeply cleft.

Colour in the recently taken specimens whitish, bordering on yellow.

Length not more than 4^{mm}.

Occurrence. — One individual only of this diminutive species was obtained, on the second cruise of the Expedition, in the sea north-west of Finmark (Stat. 200), from a depth of 620 fathoms. This Station was located in the cold area.

Fam. 3. **Epimeridæ.**

Gen. 1. **Epimeria**, Costa. 1851.

Cat. de Crost. Ital. del Rev.

45. Epimeria loricata, G. O. Sars. n. sp.

(Pl. XIV. Fig. 2).

Epimeria loricata, G. O. Sars. Crustacea & Pycnogonida nova etc., No. 26.

Artscharacteristik. Legemet stærkt incrusteret, med meget ujevn Overflade. Hovedet gaaende ud i et langt og spids Pandehorn. Alle Forkropssegmenter og de 4 forreste Bagkropssegmenter ovenfil kjølede og forsynede med høie, sammentrykte, i Spidsen afrundede dorsale Fortsatser. Forkroppen desuden forsynet til hver Side med 2 stumpere Kjøle, der delvis fortsætter sig langs de 3 forreste Bagkropssegmenter. De forreste Epimerer smale og tilspidsede; 4de og 5te Par store og udstaaende, hint fortil forlænget i en leformigt krummet og langs Midten kjølet Fortsats, dette bagtil dolkformigt tilspidset. De bagre Sidehjørner paa de 3 forreste Bagkropssegmenter kort tilspidsede. Øinene stærkt convexe, runde, zinnoberrøde. Folerne med forlænget, mangeleddet Svøbe; 2det Par noget længere end 1ste. De 2 forreste Fodpar smaa og svage, de øvrige tynde, meget kort haarede. Hofteleddet paa de 3 bagerste Par smalt med en median Kjøl. Sidste Par Halefødder med kort Stamme og forlængede Grene. Halevedhænget lidet med udrandet Spids. Farven prægtfuld rød. Længden indtil 40^{mm}.

Findesteder. Stat. 326, 357, 363.

Bemærkninger. Fra den tidligere bekjendte Art, *E. cornigera* Fabr., er denne let kjendelig ved sin betydelige Størrelse, de usædvanlig faste Integumenter og Legemets forskjellige Bevæbning.

Beskrivelse. Legemet er (se Pl. XIV, Fig. 2) af temmelig undersætsig Form, med en særdeles ujevn og kantet Overflade. Integumenterne er ualmindelig haarde og faste, stærkt incrusterede med Kalk og derfor kun lidet gjennemsigtige.

Hovedet er forholdsvis lidet og gaar fortil mellem Roden af 1ste Par Folere ud i et langt og spidst, noget nedadkrummet Pandehorn. Sidekanterne viser umiddelbart nedenfor 1ste Par Folerøs Fæste kun et ganske kort Fremspring, men danner med den bagre Rand nedentil et temmelig stærkt udtrukket spidst Hjørne.

Alle Forkropssegmenter og de 4 forreste Bagkropssegmenter er ovenfil langs ad Midten forsynede med en høi Kjøl, som for hvert Segment gaar ud i en meget stor pladeformig sammentrykt og bagudrettet Fortsats. Disse

Fam. 3. **Epimeridæ.**

Gen. 1. **Epimeria**, Costa. 1851.

Cat. de Cross. Ital. del. Rev.

45. Epimeria loricata, G. O. Sars. n. sp.

(Pl. XIV. fig. 2).

Epimeria loricata, G. O. Sars, Crustacea & Pycnogonida nova etc., No. 26.

Specific Character. — Body thickly incrusted, with surface very uneven. Head running out into a long and acute rostrum. All thoracic segments and the 4 anterior abdominal segments keeled above, with high, compressed, at the extremity rounded, dorsal projections. Moreover, anterior division of body furnished on either side with 2 obtuser carinæ, extending partly along the 3 anterior abdominal segments. Anterior epimera slender and pointed; 4th and 5th pairs large and projecting: the former of the two jutting out as a falciform and, along the middle, carinated projection; the latter produced posteriorly as a mucroniform point. Posterior lateral corners on the 3 abdominal segments short pointed. Eyes prominently convex, round, a rich vermillion in colour. Antennæ with elongate, multi-articulate flagellum; 2nd pair somewhat longer than 1st. The two anterior pairs of legs small and feeble, rest slender, exceedingly short-haired. Basal joint on the 3 posterior pairs slender, with a median keel. Last pair of caudal stylets with trunk short and elongate branches. Telson small, with point emarginate. Colour a gorgeous red. Length reaching 40^{mm}.

Locality. — Stats. 326, 357, 363.

Remarks. — From the previously known species, *E. cornigera* Fabr., this form is easily recognized by its considerable size, remarkably firm integuments, and the deviating armature of the body.

Description. — The body (see Pl. XIV, fig. 2) is rather thickset in form, with a most uneven and rugged surface. The integuments occur remarkably hard and firm, thickly incrusted with calcareous deposit, and henceal most everywhere opaque.

The head is comparatively small, and runs out anteriorly, between the bases of the 1st pair of antennæ, as a long and acute, somewhat downward-curving rostrum. The lateral margins exhibit, however, below the attachment of the 1st pair of antennæ, but a very short projection, though forming beneath, along with the posterior margin, a rather distinctly produced acute corner.

All the thoracic segments and the 4 anterior abdominal segments are furnished above, along the medial line, with a prominent keel, which, at each segment, juts out as a very large, lamelliform-compressed and posteriorly di-

Fortsatser tiltager bagtil successivt i Størrelse indtil det 2det Bagkropssegment og viser en tungedannet i Spidsen afrundet Form. Paa 3die og 4de Bagkropssegment er disse Fortsatser noget mindre og mere triangulært tilspidsede. Langs hver Side af Legemet bemærkes endnu 2 noget mindre fremtrædende eller stumpere Kjole, hvoraf den nederste dannes af Forkropssegmenternes nedre, til Epimererne stødende Rand. Denne Kjol hæver sig for hvert Segment til et knudeformigt, længere bagtil mere tandformigt Fremspring, der ogsaa bemærkes paa de 3 forreste Bagkropssegmenters Sideplader. Den ovre Sidekjol danner ligesom den nedre for hvert Forkropssegment et knudeformigt Fremspring. Paa ethvert af de 3 forreste Bagkropssegmenter findes i Flugt med denne Kjol 3 noget uregelmæssigt grupperede Knuder.

De 3 forreste Par Epimerer er ganske smale og nedentil skarpt tilspidsede. 4de og 5te Par er særdeles store og stærkt udstaaende til Siderne samt boiede i forskjellige Retninger. 4de Par er langs ad Midten forsynet med en skarp Kjol og løber fortil ud i en stor nedadkrummet leformig Fortsats; 5te Par er noget mindre, af triangulær Form og ender bagtil i et skarpt tilspidset dolkformigt Fremspring. De 2 følgende Par er meget mindre og af afrundet Form, men paa Midten forsynede med en knudeformig Fremstaaenhed.

De nedre bagre Hjørner paa de 3 forreste Bagkropssegmenters Sideplader er kort tilspidsede.

Øinene er tydeligt udviklede, af afrundet Form, stærkt convexe og af zinnoberrød Farve.

1ste Par Følere er omtrent $^1/_3$ saa lange som Legemet. Skaftet er ganske kort, med 1ste Led betydelig længere end de 2 øvrige tilsammen. Svøben er meget boielig, stærkt afsmalnende og sammensat af talrige korte med Børster besatte Led. Bisvøbe mangler ganske.

2det Par Følere er noget længere end 1ste Par og har Svøben af et lignende Udseende.

De 2 forreste Fodpar er smaa og svage, med smal i Enden skraat afskaaret Haand.

De øvrige Fodpar er forholdsvis spinkle og besatte med korte Børsteknipper. Sidste Par er noget kortere end de 2 foregaaende og har Hofteleddet noget mere udvidet; paa alle disse 3 Par er dog dette Led forholdsvis smalt og viser langs ad Midten en stump Kjol.

Sidste Par Halvefødder har Stammen ganske kort, hvorimod begge Grene er stærkt forlængede og noget pladedannede.

Halevedhænget er forholdsvis kort, med Spidsen udrandet i Midten.

Farven er prægtfuld coralrød, noget intensere ved den bagre Rand af hvert Segment.

Længden af det største af de indsamlede Exemplarer er omtrent 40^{mm}, en for en Amphipode ganske anselig Størelse.

rected projection. These projections increase posteriorly, one after the other, in size, to the 2nd abdominal segment, exhibiting a linguiform and, at the extremity, rounded form. On the 3rd and 4th abdominal segments, these projections are somewhat smaller and more triangular-acute. On either side of the body occur, moreover, 2, a trifle less prominent, or obtuser, carinæ, the lower of which is formed by the inferior margin of the thoracic segment that adjoins the epimera. The keels rise at each segment into a knob-shaped, or, farther back, more dentiform projection, also observed on the lateral plates of the 3 anterior abdominal segments. The upper lateral carina constitutes, like the lower, at each thoracic segment, a knob-shaped projection. On each of the 3 anterior abdominal segments occur, in a line with these carinæ, 3 somewhat irregular-grouped protuberances.

The 3 anterior pairs of epimera are quite small and sharply pointed below. The 4th and 5th pairs are exceedingly large, jutting out prominently at the sides, as also bent in divers directions. The 4th pair are furnished along the medial line with a sharp keel, and run out anteriorly as a large, downward-curving, falciform projection; the 5th pair are somewhat smaller, triangular in shape, and terminate posteriorly in a sharp-pointed, mucroniform projection. The 2 succeeding pairs are much smaller and of a rounded form, but furnished in the middle with a knob-shaped prominence.

The lower posterior corners on the lateral plates of the 3 anterior abdominal segments are shortly acute.

The eyes are distinctly developed, rounded in form, prominently convex, and in colour a brilliant vermillion.

The 1st pair of antennæ are about one-third as long as the body. The peduncle is quite short, with the 1st joint considerably longer than the other two taken together. The flagellum is exceedingly flexible, rapidly tapering, and composed of numerous short, bristle-beset articulations. Secondary flagellum entirely wanting.

The 2nd pair of antennæ are somewhat longer than the 1st, and have the flagellum similar in appearance.

The 2 anterior pairs of legs are small and feeble, with the hand narrow and obliquely truncate at the extremity.

The remaining pairs of legs are comparatively fragile, and provided with short tufts of bristles. The 1st pair are somewhat shorter than the 2 preceding pairs, and have the basal joint a trifle more dilated; on all three, however, this articulation is comparatively slender, and exhibits along the medial line an obtuse carina.

The last pair of caudal stylets have the trunk quite short, whereas both branches are exceedingly elongate and somewhat lamelliform.

The telson is comparatively short, with the point emarginate in the middle.

Colour a magnificent coral-red, a trifle more vivid on the posterior margin of each segment.

Length of the largest of the specimens collected about 40^{mm} — for an Amphipod a truly imposing size.

Forekomst og Udbredning. Enkelte Exemplarer af denne smukke og anselige Art blev under Expeditionens sidste Togt taget paa 3 forskjellige Stationer, alle i Havet omkring Spitsbergen. Dybden fra 123 til 260 Favne. Ogsaa fra vor Kyst (Finmarken) har jeg nogle mindre Exemplarer. Endelig er ogsaa nylig samme Art bleven opført af Smith som forekommende ved Nordamerikas Østkyst.

Occurrence and Distribution. — A few individuals of this beautiful and imposing species were taken, on the last cruise of the Expedition, at 3 different Stations, all off the shores of Spitzbergen; depth ranging from 123 to 260 fathoms. From the coast of Norway, too (Finmark), I have several smaller specimens. Finally, the same species has been lately recorded by Smith, as occurring off the east coast of North America.

Gen. 2. **Paramphithoë**, Bruzelius, 1859.

Amphip. Gammar. K. Vet. Akad. Handl. III.

46. Paramphithoë euacantha, G. O. Sars, n. sp.

(Pl. XIV, Fig. 3, 3 *a—b*).

Pleustes euacantus, G. O. Sars, Prodromus Crust. & Pycnog. etc., No. 110.

Artscharacteristik. Legemet noget sammentrykt, med ujevn Overflade og vel udviklede Epimerer. Hovedet forsynet med et kort Pandehorn, Sidehjørnerne smalt tilrundede. Alle Forkropssegmenter og de 3 forreste Bagkropssegmenter ovenfil langs Midten kjølede og gaaende ud i høie sammentrykte og bagudrettede dorsale Fortsatser, de 3 forreste stumpt tilrundede, de 6 følgende lancetformige, den sidste triangulært tilspidset. 3die Bagkropssegments Sideplader bagtil tilspidsede. Øinene smaa, ovalt-nyredannede, rødgule. 1ste Par Følere stærkt forlængede, omtrent af Legemets Længde, med Skaftets 1ste Led længere end de 2 øvrige tilsammen. 2det Par Følere neppe mere end halvt saa lange. De 2 forreste Fodpar med Haanden næsten dobbelt saa lang som det foregaaende Led. De øvrige Fodpar kraftigt udviklede, med tætte Knipper af korte Børster. Halefodderne af ens Udseende, med stærkt forlængede lancetformige Grene. Halevedhænget lidet, i Spidsen afrundet. Længden 14^{mm}.

Findesteder. Stat. 18. 137. 336.

Bemærkninger. Nærværende Art staar meget nær *P. pulchella* Kröyer, men kjendes let derved, at alle Forkropssegmenter, ogsaa de 3 forreste, er kjølede og udgaaende i dorsale Fortsatser, medens dette hos hin Art kun er Tilfældet med de bagre. Ligeledes er Formen af de 2 forreste Fodpar noget forskjellig. Slægten *Paramphithoë* henføres af Boeck til *Oedicerinæ*. Jeg tror, at den har bedre hjemme blandt Epimeriderne. Ogsaa har jeg fundet det rigtigt at bibeholde Sp. Bates Slægt *Pleustes* for *P. panopla* Kröyer og de med denne nærmest beslægtede Arter.

Gen. 2. **Paramphithoë**, Bruzelius, 1859.

Amphip. Gammar. K. Vet. Akad. Handl. III.

46. Paramphithoë euacantha, G. O. Sars, n. sp.

(Pl. XIV, figs. 3, 3 *a—b*).

Pleustes euacantus, G. O. Sars, Prodromus Crust. & Pycnog. etc., No. 110.

Specific Character. — Body somewhat compressed, with uneven surface and well-developed epimera. Head furnished with a short rostrum, lateral corners slenderly rounded. All the thoracic segments and the 3 anterior abdominal segments keeled above along the medial line, and running out as compressed, posteriorly directed dorsal projections, — the 3 anterior ones obtusely rounded, the 6 succeeding lanceolate, the last triangular-acute. Lateral plates of 3rd abdominal segment pointed posteriorly. Eyes small, ovato-reniform, reddish-yellow in colour. First pair of antennæ exceedingly elongate, about equal to body in length, with 1st joint of peduncle longer than the other two taken together. Second pair of antennæ scarcely more than half as long. The two anterior pairs of legs with hand almost twice as long as preceding articulation. Remaining pairs of legs powerfully developed, with closely disposed tufts of short bristles. Caudal stylets uniform in appearance, with exceedingly produced lanceolate branches. Telson small, rounded at point. Length 14^{mm}.

Locality. — Stats. 18, 137, 336.

Remarks. — The present species approximates very closely *P. pulchella* Kröyer, but is easily recognized by the thoracic segments, including the 3 anterior ones, being all of them keeled and running out as dorsal projections, whereas in the former species this is the case with the posterior ones only. Moreover, the form of the 2 anterior pairs of legs differs somewhat. The genus *Paramphitoë* is referred by Boeck to the family *Oedicerinæ*. In my judgment, it should rather be classed among the Epimeridæ. Furthermore, I have seen fit to retain Sp. Bate's genus *Pleustes* for *P. panopla* Kröyer, and the species nearest related to that form.

Beskrivelse. Legemet er (se Pl. XIV. Fig. 3) noget sammentrykt fra Siderne og af mindre plump Bygning end hos de til *Sl. Pleustes* henførte Former. Ligeledes er Integumenterne meget tyndere og mere gjennemsigtige.

Hovedet er forholdsvis lidet og gaar fortil i Midten ud i et kort, men temmelig bredt, nedadkrummet Pandehorn. Sidekanterne danner mellem Fæstet af de 2 Par Følere en smalt tilrundet Lap og er bag Roden af 2det Par udtrukne i et skarpt Hjørne.

Alle Forkropssegmenter og de 3 forreste Bagkropssegmenter er oventil langs ad Midten tydeligt kjølede og forsynede med høie sammentrykte dorsale Fortsatser. Af disse sidste er de 3 forreste mindre stærkt udviklede og i Enden afrundede, de 6 følgende derimod særdeles store, lancetformige og bagudrettede; den sidste endelig, der udgaar fra 3die Bagkropssegment, er triangulært tilspidset og noget opadrettet. De følgende 3 Bagkropssegmenter er oventil jevnt hvælvede, uden Kjøl eller Fortsatser.

De 4 forreste Par Epimerer er temmelig høie, men smale og noget skjævt fortilrettede, med den bagre Rand utydeligt crenuleret. 4de Par er størst og i Midten af den bagre Kant udtrukket i et skarpt Hjørne. De 3 bagre Par Epimerer er betydelig lavere og utydeligt 2-lappede.

3die Bagkropssegments Sideplader ender bagtil i en skarp noget opadbøiet Spids.

Øinene er temmelig smaa, ovale eller noget nyreformede, med den forreste Rand svagt indbøiet. Deres Pigment er af rødgul Farve.

1ste Par Følere er meget stærkt forlængede, omtrent af hele Legemets Længde, og har Skaftets 1ste Led temmelig stort, længere end de 2 følgende Led tilsammen. Svøben er særdeles tynd og sammensat af et stort Antal korte Led.

2det Par Følere er neppe halvt saa lange og har Skaftet omtrent af samme Længde som paa 1ste Par, hvorimod Svøben er meget kortere.

De 2 forreste Fodpar (Fig. 3 *a*) er af temmelig spinkel Form, men har Haanden forholdsvis stor og betydelig længere end det foregaaende Led. Den er noget udvidet mod Enden, med Griberanden meget skjæv og foran Midten forsynet med et kort tandformigt Fremspring. Ved Enden af Griberanden staar til hver Side en temmelig lang tynd Torn.

De øvrige Fodpar er stærkt forlængede, men af forholdsvis kraftig Bygning, og besat med talrige Knipper af korte Børster. Endekloen er meget kraftig og leformigt krummet. Hofteleddet paa de 3 bagre Par er af oval Form og i den bagre Kant tæt saugtakket.

Description. — The body (see Pl. XIV. Fig. 3) somewhat compressed from the sides, and less clumsy in structure than in the forms referred to the genus *Pleustes*. The integuments, too, are much thinner and more approximately translucent.

The head is comparatively small, and runs out anteriorly in the middle as a short, but rather broad, downward-curving rostrum. The lateral margins constitute between the points of attachment of the 2nd pair of antennæ a narrowly rounded lobe, and are produced, posterior to the base of the 2nd pair, to a sharp corner.

All the thoracic segments and the 3 anterior abdominal ones, are distinctly keeled above along the median line, and furnished with high, compressed, dorsal projections. Of these projections, the 3 anterior are less fully developed, and rounded at the extremity, whereas the following 6 are very large, lanceolate, and directed posteriorly; furthermore, the last, proceeding from the 3rd abdominal segment, is triangular-acute, and turns somewhat upward. The succeeding 3 abdominal segments are uniformly arched above, without either keel or projection.

The 4 anterior pairs of epimera are rather high, but slender, and directed somewhat obliquely forward, with the posterior margin indistinctly crenulated. The 4th pair is the largest, and produced in the middle of the posterior margin to a sharp corner. The 3 posterior pairs of epimera are considerably smaller and indistinctly bilobular.

The lateral plates of the 3rd abdominal segment terminate posteriorly in a sharp, somewhat upward-bent point.

The eyes are rather small, oval, or approximately reniform, with the anterior margin slightly incurved. Their pigment is of a reddish-yellow colour.

The 1st pair of antennæ are very greatly elongated, equalling about the whole body in length, and have the 1st joint of the peduncle rather large, longer than the 2 succeeding joints taken together. The flagellum is exceedingly slender, and composed of a large number of short articulations.

The 2nd pair of antennæ are scarcely half as long as the 1st, and have the peduncle about equal in length to that of the 1st pair, whereas the flagellum is much shorter.

The 2 anterior pairs of legs (fig. 3 *a*) are rather slender in form, but have the hand comparatively large and much longer than the preceding joint. It is slightly dilated toward the extremity, with the palmar margin very oblique, and furnished, anterior to the middle, with a short, dentiform projection. At the end of the palmar margin, occurs on either side a rather long, slender spine.

The remaining pairs of legs are greatly elongated, but comparatively powerful in structure, and beset with numerous tufts of short bristles. The terminal claw is very strong, and falciform. The basal joint on each of the 3 posterior pairs is oval in form and closely serrate along the posterior margin.

Halefodderne er alle af ens Udseende og Storrelse, med forlængede lancetformige Grene, hvoraf den indre er storst.

Halevedhænget (Fig. 3 *b*) er meget lidet, udelt, med Spidsen jevnt tilrundet.

Legemet er temmelig gjennemsigtigt, med sparsomt rodligt Pigment.

Længden er 14^{mm}.

Forekomst og Udbredning. Enkelte Exemplarer af denne smukke Art er under Expeditionen tagne paa 3 forskjellige Stationer, hvoraf de 2 (St. 18 og 137) ligger i Havet udenfor Norges vestlige Kyst, medens den 3die (St. 336) ligger Syd af Spitsbergen; Dybden fra 70 til 452 Favne. Da ialfald de 2 af disse Stationer tilhorer den kolde Area og den 3die ligger langt ind i den arktiske Zone, maa Arten uden Tvivl betragtes som en ægte hoinordisk Form.

The caudal stylets are all of a uniform size and appearance, with elongate, lanceolate branches, the inner one being the larger.

The telson (fig. 3 *b*) is very small, undivided, with the point evenly rounded off.

The body is comparatively translucent, sparingly furnished with a reddish pigment.

Length 14^{mm}.

Occurrence and Distribution. — A few individuals of this beautiful species were taken on the Expedition, at 3 different Stations, two of which (Stats. 18, 137) lay off the western coast of Norway, the 3rd (Stat. 336) having been located south of Spitzbergen; depth ranging from 70 to 452 fathoms. Meanwhile, as 2 of these Stations were in the cold area, and the 3rd lay far within the limits of the Arctic zone, the species must unquestionably be regarded as a true Arctic form.

Fam. 4. Oediceridæ.

Gen. **Oediceros**, Kröyer, 1842.

Nat. Tidsskr. 1ste Række IV.

47. Oediceros macrocheir, G. O. Sars, n. sp.

(Pl. XIV. Fig. 4).

Oediceros macrocheir, G. O. Sars, Crustacea & Pycnogonida nova etc., No. 25.

Artscharacteristic. Legemet fortil opsvulmet, bagtil sammentrykt, med de bagre Segmenter skarpt afsatte. Hovedet oventil stærkt hvælvet, med meget liden og neppe opsvulmet Pandedel. De 4 forreste Par Epimerer store og brede. Ingen Øine. 1ste Par Folere meget smaa, neppe overragende næstsidste Led paa 2det Pars Skaft, med 2det Led smalt og forlænget. De 2 forreste Fodpar kraftigt udviklede og af ulige Bygning. 1ste Par storst, med Haanden enormt forlænget og noget udvidet mod Enden; Griberanden bueformigt bøiet; det foregaaende Led meget lidet, simpelt. 2det Par betydelig kortere, men med stærkt udvidet oval Haand og det foregaaende Led nedentil forsynet med en lang børstebesat Fortsats. De øvrige Fodpar af sædvanlig Bygning. Halefodderne alle af ens Udseende. Halevedhænget lidet, afrundet. Farven lyst brunlig-violet. Længden 18^{mm}.

Findested. Stat. 240.

Fam. 4. Oediceridæ.

Gen. **Oediceros**, Kröyer, 1842.

Nat. Tidsskr. 1ste Række IV.

47. Oediceros macrocheir, G. O. Sars, n. sp.

(Pl. XIV, fig. 4).

Oediceros macrocheir, G. O. Sars, Crustacea & Pycnogonida nova etc., No. 25.

Specific Character. — Body anteriorly swollen, posteriorly compressed, with hinder segments sharply defined. Head prominently arched above, with frontal portion very small and scarcely at all intumescent. The 4 anterior pairs of epimera large and broad. No eyes. First pair of antennæ very small, projecting scarcely, if at all, beyond penultimate joint of peduncle on 2nd pair, with 2nd articulation slender and elongate. The 2 anterior pairs of legs powerfully developed and deviating in structure. First pair larger than 2nd, with hand prodigiously elongate and somewhat dilated toward the extremity; palmar margin arcuate; preceding articulation very small, simple. Second pair considerably shorter than 1st, but having hand greatly dilated, oval, and with preceding joint furnished below with a long bristle-beset projection. Remaining pairs of legs exhibiting the usual structure. Caudal stylets all of a uniform appearance. Telson small, rounded. Colour a light brownish-violet. Length 18^{mm}.

Locality. Stat. 240.

Bemærkninger. Fra de øvrige bekjendte Arter er denne let kjendelig ved den ualmindelig lille og ikke fortykkede Pandefortsats. Mangelen af Øine og ved de 2 forreste Fodpars enorme Udvikling.

Beskrivelse. Legemet viser (se Pl. XIV, Fig. 4) den for Slægten characteristiske Form, idet Forkroppen er temmelig stærkt opsvulmet med bred og hvælvet Ryg, medens Bagkroppen er stærkere sammentrykt og har Segmenterne skarpt begrændsede ved bemærkelige Indsnoringer.

Integumenterne er meget tynde og gjennemsigtige, uden nogen tydelig Sculptur.

Hovedet er oventil jevnt hvælvet og gaar fortil, over Roden af 1ste Par Følere, ud i en liden, noget fladtrykt Fortsats, der svarer til den hos de øvrige Arter stærkt opsvulmede Pandedel, hvorefter Slægten har faaet Navn.

De 4 forreste Par Epimerer er meget store og brede, med de nedre Kanter bredt afrundede og tæt børstebesatte. 4de Par er noget bredere end de øvrige, men ikke saa høit. 5te Par er tydeligt 2-lappet; de 2 sidste Par meget smaa.

3die Bagkropssegments Sideplader er bagtil jevnt afrundede og nedentil tæt børstbesatte.

Øine mangler ganske og aldeles.

1ste Par Følere er særdeles smaa, kun lidet længere end Hovedet, og neppe overragende næstsidste Led paa 2det Pars Skaft. Basalleddet er tæt børstebesat, noget afsmalnende mod Enden, og rækker langt ud over Pandefortsatsen. 2det Led er omtrent af samme Længde, men meget smalere, cylindriskt; 3die Led meget lidet. Svøben er betydelig kortere end Skaftet og sammensat af omtrent 8 Led.

2det Par Følere er langt kraftigere byggede og mere end dobbelt saa lange som 1ste Par. Skaftets 2 sidste Led, og navnlig det sidste, er robuste og tæt børstebesatte. Svøben er tynd og forlænget.

De 2 forreste Fodpær er særdeles kraftigt udviklede og indbyrdes af temmelig forskjellig Form.

1ste Par er overordentlig stærkt forlænget, med Basalledet meget stort og fyldt med kraftige Muskler, de 3 følgende Led derimod meget korte og 4de Led eller Carpus simpelt, uden nogen Udvidning nedentil. Haanden er af en ganske usædvanlig Længde, mere end 4 Gange saa lang som bred og noget udvidet mod Enden. Griberanden er noget buet og bagtil begrændset af et stumpt Fremspring, hvortil er fæstet en stærk Torn.

2det Par er betydelig kortere end 1ste Par, med 4de Led nedentil gaaende ud i en smal fortilrettet og i den ene Kant børstebesat Lap. Haanden er noget bredere, men kortere end samme paa 1ste Par, med Griberanden

Remarks. — From the other known species, this form may be easily recognized by the remarkably small and non-inspissated frontal projection, the absence of eyes, and the prodigious development characterizing the 2 anterior pairs of legs.

Description. — The body (see Pl. XIV, fig. 4) exhibits the form peculiar to the genus, its anterior division being very considerably intumescent, with the back broad and arching, while the posterior is much compressed and has the segments sharply defined by distinct instrictions.

The integuments are exceedingly thin, and translucent, without any obvious sculpturing.

The head is uniformly arched above, and juts out, above the bases of the 1st pair of antennæ, as a small, somewhat depressed projection, corresponding to the prominently intumescent frontal part in the other species, from which the name of the genus is derived.

The 4 anterior pairs of epimera are very large and broad, with the lower margins broadly rounded and thickly beset with bristles. The 4th pair are somewhat broader than the rest, but not so high. The 5th pair are distinctly bilobular; the 2 last pairs exceedingly small.

The lateral plates of the 3rd abdominal segment are evenly rounded posteriorly, and below densely beset with bristles.

No trace of eyes.

The 1st pair of antennæ are exceedingly small, but very little longer than the head, and project scarcely at all beyond the penultimate articulation of the peduncle on the 2nd pair. The basal joint is densely beset with bristles, tapers somewhat toward the extremity, and extends far beyond the frontal projection. The 2nd articulation about equal in length, but much more slender, cylindric; the 3rd articulation very small. The flagellum is considerably shorter than the peduncle, and composed of about 8 articulations.

The 2nd pair of antennæ are far more powerful in structure and upwards of twice the length of the 1st pair. The 2 last joints of the peduncle, and in particular the penultimate, are robust in structure, and thickly beset with bristles. The flagellum is slender and elongate.

The 2 anterior pairs of legs are most powerfully developed, and respectively somewhat different in form.

The 1st pair are remarkably elongate, with the basal joint very large and furnished with powerful muscles, the 3 succeeding joints, on the other hand, exceedingly short, and the 4th articulation, or carpus, simple, without any dilatation below. The hand attains a truly remarkable length, being more than 4 times as long as broad, and is somewhat dilated toward the extremity. The palmar margin is slightly arcuate, and posteriorly defined by an obtuse projection, from which springs a strong spine.

The 2nd pair are considerably shorter than the 1st, with the 4th articulation running out below as a slender, anteriorly directed, and, along one of the margins, bristle-beset lobe. The hand is somewhat broader, but shorter

meget skraa, og indtagende omtrent Halvparten af Haandens Længde.

3die og 4de Fodpar er temmelig spinkle, tæt børstebesatte og forsynede med stor, leformig Endeklo.

De 3 bagre Fodpar tiltager hurtigt i Længde og har Hofteleddet noget udvidet og af oval Form. Endekloen paa sidste Par er lige, næsten børsteformig, paa de 2 øvrige Par derimod tilskjærpet og leformigt krummet. Ligeledes er Børstebesætningen noget forskjellig, idet sidste Par kun bærer korte og simple Børster, medens de 2 foregaaende Par er rigeligt besatte med lange ciliered Børster.

Halefødderne er alle af ens Udseende og aftager successivt i Længde bagtil.

Halevedhænget er meget lidet, i Enden simpelt tilrundet.

Legemet var hos de friskt indfangede Exemplarer temmelig gjennemsigtigt, men med et tydeligt fint forgrenet Pigment af lys brunlig-violet Farve.

Længden er hos begge de erholdte Individer 18^{mm}.

Forekomst. Kun 2 Exemplarer af denne meget distincte Art, begge Hunner med stor Brystpose, erholdtes under Expeditionens 2det Togt i Havet mellem Jan Mayen og Island fra det betydelige Dyb af 1004 Favne. Stationen tilhører den kolde Area.

than that on the 1st pair, with the palmar margin very oblique and occupying about one-half of the length of the hand.

The 3rd and 4th pairs of legs are rather slender, densely beset with bristles, and furnished with a large, falciform terminal claw.

The 3 posterior pairs of legs increase rapidly in length, and have the basal joint somewhat dilated and oval in form. The terminal claw on the last pair is straight — well-nigh setiform, on the 2 other pairs pointed and falciform. Moreover, the setous armature is somewhat different, the last pair having only short and simple bristles, whereas the 2 preceding pairs are abundantly furnished with long, ciliated bristles.

The caudal stylets are all uniform in appearance, and diminish successively in length posteriorly.

The telson is very small, at the extremity simple rounded.

The body in the recently taken specimens was approximately translucent, but furnished with a conspicuous, delicately ramifying pigment, brownish-violet in colour.

Length of both specimens $18^{m/m}$.

Occurrence. — Only 2 individuals of this very distinct species, both females, with large marsupia, were taken on the Expedition (second cruise), in the tract of ocean stretching between Jan Mayen and Iceland, at the considerable depth of 1004 fathoms. The Station at which the specimen was secured lay in the cold area.

Fam. 5. **Atylidæ.**

Gen. **Halirages,** Boeck, 1870.

Amphipoda arctica et borealia.

48. **Halirages qvadridentatus**, G. O. Sars, n. sp.

(Pl. XIV, Fig. 4 bis, 4 *a—f*).

Halirages qvadridentatus, G. O. Sars, Prodromus descript. Crust. etc., No. 116.

Artscharacteristik. Legemet smækkert, noget sammentrykt, med smaa, i den nedre Kant saugtakkede Epimerer. De 2 bagre Forkropssegmenter og de 2 forreste Bagkropssegmenter oventil i Midten gaaende ud i enkelte bagudrettede Torner. 3die Bagkropssegments Sideplader store, næsten retvinklede, med den bagre Rand svagt buet og fint crenuleret. Øinene meget store, hoirøde. Folerne særdeles stærkt forlængede; 2det Par overgaaende hele Legemet i Længde. De 2 forreste Fodpar svagt byggede,

Fam. 5. **Atylidæ.**

Gen. **Halirages,** Boeck, 1870.

Amphipoda arctica et borealia.

48. **Halirages qvadridentatus**, G. O. Sars, n. sp.

(Pl. XIV, figs. 4 bis, 4 *a—f*).

Halirages qvadridentatus, G. O. Sars, Prodromus descript. Crust. etc., No. 116.

Specific Character. — Body slim, somewhat compressed, with small epimera, serrate along lower margin. The 2 posterior thoracic segments and the 2 anterior abdominal ones, running out above, in the middle of the posterior margin, as simple posteriorly directed spines. Lateral plates of 3rd abdominal segment large, almost rectangular, with posterior margin slightly arched and finely crenulated. Eyes very large, bright-red. Antennæ very greatly elongate; 2nd pair exceeding whole body in

med forlænget Carpus; de øvrige særdeles tynde, det bagerste Par længst. Sidste Par Halefødder kraftigt udviklede, med forlængede, lancetformige Grene. Halevedhænget aflangt triangulært, med tretandet Spids. Farven hvidagtig, gjennemsigtig, med sparsomt rødligt Pigment. Længden indtil 24^{mm}.

Findesteder. Stat. 33, 124.

Bemærkninger. Nærværende smukke Art ligner mest *H. fulrocinctus* (M. Sars), men kjendes strax ved sin betydeligere Størrelse, det større Antal af dorsale Torner og ved den afvigende Form og Bevæbning af 3die Bagkropssegments Sideplader.

Beskrivelse. Legemet er (se Pl. XIV, Fig. 4 *bis*), som hos de øvrige til denne Slægt hørende Arter af slank og elegant Form, med meget smaa Epimerer og stærkt forlængede Lemmer.

Hovedet er fortil afstumpet, uden noget egentligt Pandehorn, og viser til hver Side mellem de 2 Par Folerøs Insertion en liden afrundet Lap: nedentil forlænger det sig i en tilspidset nedadrettet Flig.

De 4 forreste Par Epimerer er omtrent af samme Høide som selve Kroppen og simpelt afrundede samt fint saugtakkede i den nedre Kant (se Fig. 4 *d*); det 1ste Par skiller sig ikke mærkeligt i Form fra de følgende.

Af dorsale Torner findes 4, der udgaar fra den bagre Rand af de 2 sidste Forkropssegmenter og de 2 forreste Bagkropssegmenter. Disse Torner tiltager successivt noget i Størrelse bagtil og er tæt tiltrykte til Kroppen, saa at de først tydeligt træder frem, naar Ryggen er krummet.

De 3 forreste Bagkropssegmenters Sideplader er meget store, paa 1ste Segment afrundede, paa de 2 øvrige næsten retvinklede bagtil. 3die Segments Sideplader skiller sig ikke i Form fra det foregaaendes, men har den bagre, svagt buede Rand meget fint crenuleret (se Fig. 4 *e*).

Øinene er særdeles store, uregelmæssigt ovale og næsten sammenstodende oventil. Deres Pigment er hos friske Exemplarer af en smuk hoirød Farve, men forsvinder meget hurtigt efterat Exemplarerne er kastede paa Spiritus.

Begge Par Folere er særdeles stærkt forlængede, med tynde, af talrige korte Led bestaaende Svøber. 2det Par er det længste og overgaar selv hele Legemet i Længde. Skaftet er paa begge Par forholdsvis kort.

Kindbakkerne (Fig. 4 *a*) er undersætsigt byggede, med tydelig afstumpet Tyggefortsats. Palpen har sidste Led kortere end det foregaaende og stærkt krummet.

Kjæverne (Fig. 4 *b—c*) og Kjævefødderne viser intet udmærkende i sin Bygning.

De 2 forreste Fodpar (Fig. 4 *d*) er som hos Slægtens øvrige Arter svagt byggede, med forholdsvis liden, i Enden afkuttet Haand og stærkt forlænget Carpus.

length. The 2 anterior pairs of legs fragile in structure, with carpus elongate; rest exceedingly slender, hindmost pair longest. Last pair of caudal stylets powerfully developed, with elongate, lanceolate branches. Telson oblongo-triangular, with tridentate point. Colour whitish, translucent, with scattered reddish pigment. Length 24^{mm}.

Locality. — Stats. 33, 124.

Remarks. — The present beautiful species bears closest resemblance to *H. fulrocinctus* (M. Sars), but is immediately recognized by its considerable dimensions, the greater number of dorsal spines, and the deviating form and armature of the lateral plates of the 3rd abdominal segment.

Description. — The body (see Pl. XIV, fig. 4 *bis*), as in all other species belonging to this genus, has a slim and elegant form, with exceedingly small epimera and very greatly elongated appendages.

The head obtuse anteriorly, without any true rostrum, and exhibiting on either side, between the points of insertion of the 2 pairs of antennæ, a small rounded lobe; below, it is produced to an acute, downward-directed lappet.

The 4 anterior pairs of epimera are about of the same height as the body, simple rounded, and finely serrate along the lower margin (see fig. 4 *d*); in form, the 1st pair does not differ appreciably from those succeeding it.

Of dorsal spines there are 4, proceeding from the posterior margin of the 2 last thoracic segments and the 2 anterior abdominal segments. These spines increase posteriorly, to a slight extent, successively in size, and, being closely pressed against the body, cannot be distinctly observed save when the back is bent.

The lateral plates of the 3 anterior abdominal segments are very large, — on the 1st segment rounded, on the other 2 almost rectangular, posteriorly. The lateral plates of the 3rd segment do not deviate in form from those of the preceding, but have the slightly arcuate posterior margin very finely crenulated (see fig. 4 *e*).

The eyes are exceedingly large, irregular oval, and above, almost contiguous. Their pigment, in recently taken examples, is a brilliant red, which, however, speedily disappears on immersion in spirit.

Both pairs of antennæ are exceedingly elongate, with slender flagella, composed of numerous short articulations. The 2nd pair are the longer, and exceed the whole body in length. The peduncle is comparatively short in both pairs.

The mandibles (fig. 4 *a*) are thickset in structure, with a distinct, obtusely-ending molar protuberance. The palp has the last articulation shorter than the preceding, and strongly curved.

Neither the maxillæ nor the mandibles exhibit anything specially characteristic in their structure.

The 2 anterior pairs of legs (fig. 4 *d*) are feeble in structure, as in the other species of the genus, with the hand comparatively small and truncate at the extremity and the carpus very considerably produced.

De 2 følgende Fodpar (se Fig. 4) er overordentlig tynde, næsten traadformige, med korte Borster og forlænget Endeklo.

De 3 bagre Par tiltager successivt i Længde bagtil og har Hofteleddet noget udvidet ved Basis og i det nedre bagre Hjørne udtrukket til en skarp Spids.

De 2 forreste Par Halefødder har den ydre Gren betydelig kortere end den indre. Sidste Par (se Fig. 4 *f*) er kraftigt udviklet, med temmelig tyk Stamme og stærkt forlængede, lancetformige Grene, der næsten er indbyrdes af ens Længde.

Halevedhænget (*ibid.*) er aflangt triangulært og rækker ud over Stammen paa sidste Par Halefødder. Spidsen er delt i 3 smaa Tænder, hvoraf den midterste er længst.

Farven er hvidagtig, gjennemsigtig; kun hist og her bemærkes hos friske Exemplarer et rødligt Pigment, der tildels danner utydelige Tværbaand.

Længden gaar op til 24^{mm}, og nærværende Art er saaledes betydelig større end nogen af de tidligere beskrevne.

Forekomst. Et enkelt Exemplar af denne Art toges under Expeditionens 1ste Togt i Havet udenfor vor Vestkyst (Stat. 33) fra et Dyb af 525 Favne. Under 2det Togt erholdtes talrige Exemplarer af samme Art paa et nordligere Punkt i Havet udenfor Helgelandskysten (Stat. 124), Dybden 350 Favne. Begge disse Stationer tilhører den kolde Area, og Arten maa derfor utvivlsomt ansees for en arktisk Form.

The 2 succeeding pairs of legs (see fig. 4) are remarkably slender, almost filiform, with short bristles and elongate terminal claw.

The 3 posterior pairs of legs increase successively in length from before to behind, and have the basal joint somewhat dilated at the origin, as also produced at the lower posterior corner to a sharp point.

The 2 anterior pairs of caudal stylets have the outer branch considerably shorter than the inner. The last pair (see fig. 4 *f*) are powerfully developed, with a thickish stem and very elongate, lanceolate branches, almost uniform in length.

The telson (ibid.) is oblongo-triangular, and reaches beyond the stem of the last pair of caudal stylets. The point is divided into 3 small teeth, the median being the largest.

Colour whitish, translucent; here and there only, in recently taken specimens, can be detected a reddish pigment, forming a few indistinct transverse bands.

Length 24^{mm}; the present species is therefore considerably larger than any of those previously described.

Occurrence. — One individual only of this species was taken, on the first cruise of the Expedition, off the west coast of Norway (Stat. 33), at a depth of 525 fathoms. On the second cruise, numerous examples were obtained, in a more northerly locality, viz. off the coast of Helgeland (Stat. 124), depth 350 fathoms. Both of these Stations were in the cold area, and hence the species may unquestionably be considered an Arctic form.

Gen. 2. **Cleïppides,** Boeck, 1870.

Amphip. bor. et arctica.

49. Cleïppides qvadricuspis, Heller.

(Pl. XIV. Fig. 5).

Cleïppides qvadricuspis, Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Österr. Ungar. Nordpol-Exped. pg. 8, Tab. III, Fig. 1—16.

Jeg giver her en forbedret Figur af denne characteristiske af Heller paa ovenanførte Sted beskrevne Form. I levende Tilstand er Legemet af bleg gulagtig Farve, med Munddelene og Størsteparten af Lemmerne carminrøde. Øinenes Pigment er meget lyst, næsten hvidt.

De af os indsamlede Exemplarer er betydelig større end de af Heller undersøgte, idet Længden gaar op til 52^{mm}, en for en Amphipode colossal Størrelse.

Gen. 2. **Cleïppides,** Boeck, 1870.

Amphip. bor. et arctica.

49. Cleïppides qvadricuspis, Heller.

(Pl. XIV, fig. 5).

Cleïppides qvadricuspis, Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Österr.-Ungar. Nordpol-Exped., pag. 8, Pl. III, figs. 1—16.

I annex here an improved representation of this characteristic form, described in the above-cited Memoir by Heller. When living, the animal has the body of a pale, yellowish colour, the oral appendages and most of the limbs being of a rich carmine. The ocular pigment exceedingly light, well-nigh colourless.

The specimens collected on the Norwegian Expedition are considerably larger than any of those examined by Heller, their total length reaching 52^{mm} — a truly colossal size for an Amphipod.

Vi har taget denne eiendommelige og iøinefaldende *Amphipode* paa ikke mindre end 7 forskjellige Stationer (St. 124, 164, 192, 240, 286, 359, 362), alle tilhørende den kolde Area. Dybden fra 350 til 1004 Favne. Dens Udbredningsfelt i Nordhavet strækker sig herefter fra den 67de til den 80de Bredegrad og fra circa 16° O. L. til 12° V. L. Arten forekommer imidlertid ogsaa i Havet Øst af Spitsbergen, hvor de af Heller beskrevne Exemplarer blev tagne. Den er utvivlsomt at betragte som en ægte arktisk Form.

This peculiar and conspicuous *Amphipod* was met with at not less than 7 different Stations (Stats. 124, 164, 192, 240, 286, 359, 362) — all in the cold area: depth ranging from 350 to 1004 fathoms. Its distribution in the Northern Seas extends accordingly from the 67th to the 80th parallel of latitude, and from about long. 16° E. to long. 12° W. The species occurs, too, off Spitzbergen, the locality from which the examples recorded by Heller were derived. Hence the animal undoubtedly represents a true Arctic form.

Gen. 3. **Amphithopsis**, Boeck. 1860.

Forhandl. v. de Skand. Naturf. 8de Møde.

50. Amphithopsis pulchella, G. O. Sars. n. sp.

(Pl. XIV, Fig. 6, 6 *a*—*e*).

Amphithopsis pulchella, G. O. Sars, Prodromus descriptivnis Crust. etc., No. 117.

Artscharacteristik. Legemet noget sammentrykt, med temmelig store Epimerer og de bagre Segmenter oventil skarpt afsatte, men uden Kjøl eller Fortsatser. Hovedet forsynet med et meget lidet Pandehorn og tilspidsede Sidehjørner. 3die Bagkropssegments Sideplader næsten retvinklede. Øinene smalt ovale med brunligt Pigment. 1ste Par Følere forlængede, med Skaftets 1ste Led længere end de 2 øvrige tilsammen; 2det Par neppe halvt saa langt som 1ste. 1ste Fodpar svagt bygget; 2det Par derimod særdeles kraftigt udviklet, med Haanden stærkt udvidet og Griberanden noget skraa samt bevæbnet til hver Side med 4 stærke Torner. De øvrige Fodpar temmelig robuste og alle omtrent af ens Længde. Sidste Par Halefødder med den indre Gren over dobbelt saa lang som den ydre. Halevedhænget simpelt afrundet. Farven hvidgul, overalt besaaet med smaa røde Punkter. Længden 8^{mm}.

Findesteder. Stat. 31, 48, 87, 200, 338.

Bemærkninger. Af de bekjendte Arter slutter denne sig nærmest til *A. latipes* M. Sars, men skiller sig ved mindre undersætsig Kropsform, Mangelen af dorsal Kjøl, mindre robuste Gangfødder samt ved Farven. Formen af de 2 forreste Fodpar er ogsaa temmelig forskjellig.

Beskrivelse. Legemet er (se Pl. XIV, Fig. 6) noget undersætsigt, skjøndt paa langt nær ikke i den Grad som hos *A. latipes*, og temmelig stærkt sammentrykt fra Siderne.

Gen. 3. **Amphithopsis**, Boeck. 1860.

Forhandl. v. de Skand. Naturf. 8de Møde.

50. Amphithopsis pulchella, G. O. Sars, n. sp.

(Pl. XIV, figs. 6, 6 *a*—*e*).

Amphithopsis pulchella, G. O. Sars, Prodromus descriptionis Crust. etc., No. 117.

Specific Character. — Body somewhat compressed, with rather large epimera and with hindmost segments, above, sharply defined, but having neither keel nor projection. Head exhibiting a very small rostrum, and with pointed lateral corners. Lateral plates of 3rd abdominal segment of body well-nigh rectangular. Eyes narrowly oval, with a brownish pigment. First pair of antennæ elongate, with 1st joint of peduncle larger than the 2 succeeding ones taken together; 2nd pair scarcely half as long as first. First pair of legs feeble in structure; 2nd pair, on the other hand, most powerfully developed, with hand greatly dilated, and palmar margin somewhat oblique, as also armed on either side with 4 strong spines. Remaining pairs of legs rather robust, and all about equal in length. Last pair of caudal stylets with inner branch more than twice as long as outer. Caudal appendages simple rounded. Colour whitish-yellow, everywhere specked with red. Length 8^{mm}.

Locality. — Stats. 31, 48, 87, 200, 338.

Remarks. — Of the known species, this form approximates closest *A. latipes* M. Sars, but is distinguished by a less thickset body, the absence of a dorsal keel, less robust ambulatory legs, as also by its colour. Moreover, the form of the 2 anterior pairs of legs is rather different.

Description. — The body (see Pl. XIV, fig. 6) somewhat thickset, though by no means to the same extent as in *A. latipes*, and a good deal compressed from the sides.

De bagre Forkrops- og forreste Bagkropssegmenter er oventil skarpt afsatte fra hinanden, uden dog at vise nogen egentlig Kjøl eller dorsale Fortsatser.

Hovedet er forholdsvis lidet og gaar fortil ud i et ganske kort, noget boiet Pandehorn. Sidekapperne er tydeligt vinklede.

De 4 forreste Par Epimerer er temmelig store, betydelig høiere end selve Kroppen og noget skraat fortilrettede. De tiltage successivt noget i Størrelse, og 4de Par ender bagtil i et vinkelformigt Fremspring.

De 3 forreste Bagkropssegmenters Sideplader er forholdsvis store; de paa 3die Segment danner bagtil en næsten ret Vinkel.

Øinene er smalt ovale eller næsten nyreformige og beliggende nær den forreste Rand af Hovedet; deres Pigment er af brunlig Farve.

1ste Par Følere er stærkt forlængede, ikke meget kortere end hele Legemet, og har Skaftets 1ste Led længere end de 2 følgende tilsammen. Svøben er over dobbelt saa lang som Skaftet og sammensat af talrige korte Led.

2det Par Følere er neppe halvt saa lange som 1ste Par og har Svøben omtrent af Skaftets Længde.

Kindbakkerne (Fig. 6 *a*) udmærker sig ved den betydelige Størrelse af Palpen, hvis sidste Led er lige saa langt som de 2 øvrige tilsammen, sammentrykt, leformigt og i den ene Kant tæt børstebesat.

1ste Par Kjæver (Fig. 6 *b*) er meget smaa og har Basalpladen af bredt oval Form samt forsynet med 2 korte Fjærborster.

1ste Fodpar (Fig. 6 *c*) er forholdsvis lidet og svagt bygget, med Haanden temmelig smal og neppe længere end det foregaaende Led.

2det Fodpar (Fig. 6 *d*) er derimod kraftigt udviklet og har Haanden meget stor og udvidet mod Enden, med Griberanden noget skraa og bevæbnet til hver Side med 4 stærke Torner.

De øvrige Fodpar er alle omtrent af ens Længde og temmelig robuste, skjøndt paa langt nær ikke i den Grad som hos *A. latipes*. De 3 sidste Par har Hofteleddet temmelig bredt og pladeformigt, af regelmæssig oval Form.

Halefødderne aftager successivt i Længde bagtil, saa at de tilbagestrakte omtrent naar til samme Tværlinie, og har alle den ydre Green betydelig kortere end den indre. Sidste Par afviger kun fra de øvrige derved, at Basaldelen er forholdsvis kortere og tykkere (se Fig. 6 *e*).

Halevedhænget (*ibid.*) er forholdsvis lidet og simpelt tilrundet i Enden, uden Børster eller Torner.

Dyret er i levende Tilstand af gulhvid Farve og overalt tæt bestrøet med meget smaa røde Punkter.

The posterior thoracic and anterior abdominal segments are sharply defined above, one from the other, without however exhibiting any true keel or dorsal projection.

The head is comparatively small, and exhibits anteriorly a very short, somewhat curved rostrum. Lateral lobes distinctly angular.

The 4 anterior pairs of epimera rather large, exceeding considerably in height the body itself, and directed somewhat obliquely forward. They increase, to a slight extent, successively in size, and the 4th pair terminates posteriorly with an angular projection.

The 3 anterior lateral plates of the abdominal segments are comparatively large; those on the 3rd segment form posteriorly almost a right angle.

The eyes, narrowly oval, or almost reniform, are placed in close proximity to the anterior margin of the head; their pigment is of a brownish colour.

The 1st pair of antennæ are very elongate, but little shorter than the whole body, and have the 1st joint of the peduncle greater in length than the 2 succeeding ones taken together. The flagellum is more than twice as long as the peduncle, and composed of numerous short articulations.

The 2nd pair of antennæ are scarcely half as long as the 1st, and have the flagellum and peduncle about equal in length.

The mandibles (fig. 6 *a*) are characterized by the very considerable size of the palp, which has the last articulation as long as the 2 others taken together; it is compressed, falciform, and has one of the margins closely beset with bristles.

The 1st pair of maxillæ (fig. 6 *b*) are very small, and have the basal plate of a broad, oval form, as also furnished with 2 short plumous bristles.

The 1st pair of legs (fig. 6 *c*) are comparatively small and feeble in structure, with the hand rather narrow and but very little longer than the preceding articulation.

The 2nd pair of legs (fig. 6 *d*), on the other hand, are powerfully developed, and have the hand very large and dilated toward the extremity, with the palmar margin somewhat oblique and armed on either side with 4 strong spines.

The remaining pairs of legs are all about uniform in length, and rather robust, though by no means to the same extent as in *A. latipes*. The 3 posterior pairs have the basal joint rather broad, and lamelliform, as also of a regular oval shape.

The caudal stylets diminish successively in length posteriorly, and hence, when stretched backwards, reach very nearly to the same transverse line; all have the outer branch much shorter than the inner. The last pair differ from the rest merely in the basal part being comparatively shorter and thicker (see fig. 6 *e*).

The telson (ibid.) is comparatively small, and simple rounded at the extremity, without either bristles or spines.

In a living state, the animal is of a yellowish-white colour, everywhere closely specked with minute red points.

Længden synes ikke at overstige 8^{mm}.

Forekomst og Udbredning. Vi har under Expeditionen taget denne smukke Form enkeltvis paa 5 forskjellige Stationer. Af disse ligger de 2 (Stat. 31 og 87) i Havet udenfor Romsdalen, den 3die (Stat. 48) Ost af Island, den 4de (Stat. 200) NV. af Finmarken og den 5te (Stat. 338) Syd af Spitsbergen. Alle disse Stationer tilhører den kolde Area; Dybden fra 146 til 620 Favne. Arten forekommer desuden ved vore Kyster, nemlig i Varangerfjorden, hvor jeg har taget den ikke sjelden paa større Dyb.

Dens for Tiden bekjendte Udbredningsfelt er herefter temmelig betydeligt og strækker sig fra den 63de til den 76de Bredegrad og fra omtrent 31° O. L. til 10° V. L. Arten er utvivlsomt at betragte som en ægte arktisk Form.

The length would not appear to exceed 8^{mm}.

Occurrence and Distribution. — This beautiful form was taken on the Expedition — isolated specimens at 5 different Stations. Two of these (Stats. 31 and 87) were located in the open sea, off the coast of Romsdalen; the 3rd (Stat. 48) lay east of Iceland, the 4th (Stat. 200) north-west of Finmark, and the 5th (Stat. 338) south of Spitzbergen. All of the Stations were in the cold area; depth from 146 to 620 fathoms. The species occurs, too, off the shores of Norway, viz. in the Varangerfjord, where I have not infrequently taken it at a depth of about 100 fathoms.

Hence, its range of distribution, as at present known, is rather considerable, extending from the 63rd to the 76th parallel of latitude, and from long. 31° E. to long. 10° W. The species must unquestionably be ranked as a true Arctic form.

Fam. **Gammaridæ.**

Gen. 1. **Maera,** Leach. 1813.

Edinb. Encyclop. VII.

51. Maera tenera, G. O. Sars, n. sp.

(Pl. XIV. Fig. 7).

Maera tenella, G. O. Sars, Prodromus descriptionis Crust. etc., No. 119 (non Stimpson).

Artscharacteristik. Legemet særdeles smalt, med smaa Epimerer. 1ste Par størst, i Enden afrundet. Hovedets Sideplader stumpt tilrundede. 3die Bagkropssegments Sideplader næsten retvinklede. Ingen Øine. 1ste Par Følere noget kortere end Skaftet. Bisvøben 4-leddet. 2det Par Følere $^1/_3$ kortere end 1ste Par. 1ste Fodpar svagt bygget, med Haanden neppe større end det foregaaende Led; 2det Par meget robust, med bred, næsten firkantet Haand. De øvrige Fødder særdeles tynde, de 3 bageste Par længere end de 2 foregaaende, med Hofteleddet smalt, lineært. Sidste Par Halefødder omtrent af samme Størrelse som det foregaaende Par, med begge Grene lancetformige og næsten af ens Længde. Halevedhænget kort, tvelappet. Farven hvidagtig, gjennemsigtig. Længden 10^{mm}.

Findested. Stat. 31.

Fam. **Gammaridæ.**

Gen. 1. **Maera,** Leach. 1813.

Edinb. Encyclop. VII.

51. Maera tenera, G. O. Sars n. sp.

(Pl. XIV. fig. 7).

Maera tenella, G. O. Sars, Prodromus descriptionis Crust. etc., No. 119 (non Stimpson).

Specific Character. — Body exceedingly slim, with small epimera. 1st pair largest, rounded at extremity. Lateral corners of head obtusely rounded. Lateral plates of 3rd abdominal segment almost rectangular. No eyes. First pair of antennæ somewhat shorter than body; with the 2 first joints of peduncle about equal in length; flagellum shorter than peduncle, secondary flagellum four-jointed. Second pair of antennæ one-third shorter than 1st. First pair of legs feeble in structure, with hand scarcely at all larger than preceding joint; second pair exceedingly robust, with broad, well-nigh quadrate hand. Remaining legs very slender, the 3 posterior pairs longer than the 2 preceding ones, with basal joint narrow, linear. Terminal pair of caudal stylets about same size as preceding pair, with both branches lanceolate and well-nigh equal in length. Telson short, bilobular. Colour whitish, translucent. Length 10^{mm}.

Locality. — Stat. 31.

Bemærkninger. Denne nye Art kjendes ved sit overordentlig spinkle Legeme, de jevnt afrundede 1ste Par Epimerer, den fuldstændige Mangel af Øine og den lineære Form af Hofteleddet paa de 3 bagerste Fodpar. Da det af mig først anvendte Artsnavn, *tenella*, allerede er anvendt for en amerikansk Art, har jeg foretaget ovenstaaende Forandring med samme.

Beskrivelse. Legemet er (se Pl. XIV. Fig. 7) særdeles spinkelt, næsten af cylindrisk Form, med Ryggen jevnt hvælvet, uden Fortsatser eller Tænder.

Hovedet er forholdsvis stort, omtrent af samme Længde som de 2 forreste Segmenter tilsammen, og har Sidehjørnerne meget korte og stumpt tilrundede.

Epimererne er særdeles smaa, lavere end selve Kroppen og aftager successivt noget i Storrelse bagtil. 1ste Par, som er det storste, er noget skraat fortilrettet og smalt tilrundet i Enden.

De 3 forreste Bagkropssegmenters Sideplader er kun lidet udviklede og bagtil næsten retvinklede. 4de Segment er noget dybere end de foregaaende.

Af Øine findes intetsomhelst Spor.

1ste Par Folere er temmelig stærkt forlængede, men dog kortere end Legemet, og meget tynde. Skaftets 2 forste Led er omtrent indbyrdes af ens Længde og mere end 3 Gange saa lange som 3die Led. Svoben er kortere end Skaftet og sammensat af 16 Led. Bisvoben er noget længere end Skaftets sidste Led og 4-leddet.

2det Par Folere er $^1/_3$ kortere end 1ste Par og har Skaftets næstsidste Led storst. Svoben er 8-leddet og kortere end Skaftet.

Mundregionen er nedentil stærkt fremspringende og saagodtsom fuldstændig ubedækket til Siderne.

De 2 forreste Fodpar er som hos Slægtens ovrige Arter meget ulige udviklede og temmelig rigeligt borstebesatte. 1ste Par er forholdsvis svagt bygget, med Haanden meget liden, neppe storre end det foregaaende Led. 2det Par er derimod særdeles kraftigt, med den ydre Del stærkt fortykket og sammentrykt fra Siderne. Haanden er meget stor, næsten firkantet, uden Torner, men i begge Kanter tæt borstebesat. Endekloen er forholdsvis kort.

De folgende Fodpar er særdeles spinkle og kun sparsomt borstebesatte. De 3 bagerste Par er noget længere end de 2 foregaaende og udmærkede ved den smale, næsten lineære Form af Hofteleddet.

Halefødderne er alle omtrent af ens Udseende, med smalt lancetformige Grene. Sidste Par er neppe længere end det foregaaende, men har Grenene noget storre i Forhold til Stammen.

Remarks. — This new species is distinguished by its remarkably slender body, the evenly rounded 1st pair of epimera, the total absence of eyes, and the linear form of the basal joint of the 3 posterior pairs of legs. The specific name I first selected, viz. *tenella*, having, as I found, already been adopted for an American species, I saw fit to modify my appellation to that given above.

Description. — The body (see Pl. XIV, fig. 7) is exceedingly slender, almost cylindric in form, with the back uniformly arched and exhibiting neither projections nor teeth.

The head is comparatively large, about the same length as that of the 2 anterior segments taken together, and has the lateral corners very short and obtusely rounded.

The epimera are exceedingly small, less in height than the body, and diminish, backwards, successively somewhat in size. The first pair — which are the largest — directed somewhat obliquely forward and narrowly rounded at the extremity.

The 3 lateral plates of the abdominal segments are but slightly developed, and posteriorly almost rectangular. The 4th segment is somewhat deeper than those preceding it.

Of eyes no trace whatever.

The 1st pair of antennæ are considerably elongated, shorter however than the body, and very slender. The 2 first joints of the peduncle are about equal in length, and more than 3 times as long as the 3rd joint. The flagellum is shorter than the peduncle, and composed of 16 articulations. The secondary flagellum is somewhat longer than the 1st joint of the peduncle, and quadriarticulate.

The 2nd pair of antennæ are one-third shorter than the 1st, and have the penultimate articulation largest. The flagellum is eight-jointed, and shorter than the peduncle.

The buccal area juts forward considerably below, and is well-nigh entirely uncovered at the sides.

The 2 anterior pairs of legs, as in all other species of the genus, are most unequally developed, and rather profusely furnished with bristles. The 1st pair are comparatively feeble in structure, with the hand very small, scarcely at all larger than the preceding joint. The 2nd pair, on the contrary, are remarkably powerful, having the outer portion greatly incrassated, and compressed from the sides. The hand is very large, almost quadrate, without spines, but closely beset with bristles along both margins. The terminal claw comparatively short.

The succeeding pairs of legs are exceedingly slender, and but sparingly furnished with bristles. The 3 posterior pairs are somewhat longer than the preceding, and distinguished by the narrow, almost linear form of the basal joint.

The caudal stylets have all about the same appearance, with slender, lanceolate branches. The last pair are scarcely at all longer than the preceding, but have the branches somewhat larger as compared with the stem.

Halevedhænget er meget lidet og dybt indskaaret i Enden eller tvelappet.

Farven er hvidagtig, gjennemsigtig, med et svagt gulagtigt Skjær.

Længden af det undersøgte Exemplar er 10^{mm}.

Forekomst. Et enkelt Exemplar af denne Form toges under Expeditionens 1ste Togt udenfor Storeggen (Stat. 31) paa et Dyb af 417 Favne. Stationen tilhører den kolde Area.

The telson is very small, and deeply incised at the extremity, or bilobular.

Colour whitish, translucent, with a faint yellowish tinge.

Length of the specimen examined 10^{mm}.

Occurrence. — One example only of this form was taken, on the first cruise of the Expedition, off Storeggen (Stat. 31), at a depth of 417 fathoms. This Station lay in the cold area.

Gen. 2. **Melita,** Leach. 1813.

Edinb. Encyclop. Art. Crust.

52. Melita pallida, G. O. Sars, n. sp.

(Pl. XV, Fig. 1, 1 *a—l*)

Melita pallida, G. O. Sars, Crust. & Pycnogonida nova etc., No. 34

Artscharacteristik. Legemet af smal og langstrakt Form. Hovedets Sidehjørner jevnt afrundede. De 4 forreste Par Epimerer noget høiere end Kroppen, ubevæbnede. Den bagre Rand af alle Bagkropssegmenter, med Undtagelse af det sidste, gaaende oventil ud i 2 flade tiltrykte Torner, imellem hvilke endnu staar 1 - 3 betydelig mindre. 3die Segments Sideplader bagtil udtrukne i en skarp Spids. Ingen Øine. 1ste Par Følere ikke meget kortere end Legemet, med Skaftets 2 første Led smale og forlængede. Svøben længere end Skaftet, 24-leddet. Bisvøben liden, 3-leddet. 2det Par Følere neppe halvt saa lange som 1ste Par. 1ste Fodpar svagt bygget, med liden, næsten qvadratisk Haand; 2det Par særdeles kraftigt udviklet, med Haanden meget stor og i Enden skraat afskaaret, det nedre Hjørne noget fremspringende og bevæbnet med en Torn, den bagre Rand besat med Knipper af korte Børster. De 3 bagerste Fodpar temmelig stærkt forlængede, med pladeformigt udvidet Hofteled. Sidste Par Halefødder stærkt forlængede, med den indre Green rudimentær, den ydre meget stor, konisk og besat med spredte Randtorner. Halevedhænget kort, klovet til Roden. Farven ensformig hvid. Længden 26^{mm}.

Findested. Stat. 353.

Bemærkninger. Fra de øvrige Arter af Slægten er denne strax kjendelig ved den totale Mangel af Øine samt ved Bagkropssegmenternes eiendommelige Bevæbning.

Gen. 2. **Melita,** Leach. 1813.

Edinb. Encyclop. Art. Crust.

52. Melita pallida, G. O. Sars, n. sp.

(Pl. XV, figs. 1, 1 *a—l*).

Melita pallida, G. O. Sars, Crust. & Pycnogonida nova etc., No. 34.

Specific Character. — Body slender and elongate in form. Lateral corners of head evenly rounded. The 4 anterior pairs of epimera — unarmed — somewhat higher than body. Posterior margin of all abdominal segments, with exception of last, jutting out above as 2 flat, appressed spines, from between which rise two or three considerably smaller ones. Lateral plates of 3rd segment produced posteriorly to a sharp point. No eyes. First pair of antennæ not much shorter than body, with the 2 first joints of peduncle slender and elongate; flagellum longer than peduncle, composed of close upon 24 articulations, secondary flagellum small, tri-articulate. Second pair of antennæ scarcely half as long as 1st. First pair of legs feeble in structure, with a small, well-nigh quadrate hand; 2nd pair very powerfully developed, with hand exceedingly large and obliquely truncate at extremity, lower corner somewhat projecting and armed with a spine, posterior margin beset with bunches of short bristles. The 3 posterior pairs of legs considerably elongate, with basal joint lamelliform-dilated. Last pair of caudal stylets greatly elongated, with inner branch rudimentary, outer very large, conical, and beset with scattered marginal spines. Telson short, cleft to the base. Colour a uniform white. Length 26^{mm}.

Locality. — Stat. 353.

Remarks. — From the other species of the genus, this form may be readily distinguished by the total absence of eyes, as also by the peculiar armature of the abdominal segments.

Beskrivelse. Legemet er (se Pl. XV, Fig. 1) af temmelig spinkel Form og stærkt sammentrykt fra Siderne, dog med afrundet Ryg.

Hovedet er omtrent af samme Længde som de 2 forreste Segmenter tilsammen og fortil afstumpet, uden tydeligt Pandehorn, og med Sidehjørnerne jevnt afrundede.

De 4 forreste Par Epimerer er temmelig smaa, dog noget høiere end Kroppen og næsten indbyrdes af ens Størrelse og Form; deres nedre Rand jevnt buet og ganske glat, uden Sangtakker.

Paa alle Bagkropssegmenter, med Undtagelse af det sidste, gaar (se Fig. 1 *h*) den bagre Rand oventil ud i 2 flade tiltrykte Torner, imellem hvilke endnu findes et noget vexlende Antal (fra 2—4) betydelig mindre Torner eller Sangtakker. Den bagre Vinkel paa 2det og 3die Segments Sideplader er udtrukket i en skarp, noget opadkrummet Spids.

Af Øine var ikke det allermindste Spor at se paa de friskt indfangede Individer.

1ste Par Følere er af betydelig Længde, og ikke meget kortere end hele Legemet. Skaftet er stærkt forlænget og smalt, med de 2 første Led størst og indbyrdes omtrent af ens Længde; sidste Led betydelig kortere. Svøben er noget længere end Skaftet, traadformig og meget tydeligt leddet, Leddenes Antal omkring 24. Bisvøben (se Fig. 1 *a*) er meget liden og kun sammensat af 3 Led.

2det Par Følere er neppe mere end halvt saa lange som 1ste Par og har Svøben kun sammensat af 11 Led.

Kindbakkerne (Fig. 1 *b*) er undersætsigt byggede med tydeligt afsat Tyggeknude. Palpen er meget liden, næsten rudimentær, med sidste Led simpelt tilspidset og endende med 2 simple Børster.

1ste Par Kjæver (Fig. 1 *c*) har den egentlige Tyggelap bevæbnet med stærke Torner. Den indre Lap eller Basalpladen er elliptisk og langs den indre Kant forsynet med talrige Fjærborster. Palpen er meget tynd, med sidste Led smalt leformigt og i Spidsen bevæbnet med nogle tynde Torner.

2det Par Kjæver (Fig. 1 *d*) har begge Lapper af oval Form og indbyrdes omtrent af ens Størrelse.

Kjævefødderne (Fig. 1 *e*) viser den sædvanlige Bygning. Den ydre Tyggelap er temmelig stor og i den indre Kant forsynet med en Rad af korte Torner. Palpens sidste Led er noget udvidet i Enden og her tæt børstebesat; Endekloen forholdsvis kort og konisk tilspidset.

1ste Fodpar (Fig. 1 *f*) er af temmelig svag Bygning og har Haanden neppe længere end det foregaaende Led, samt i Enden tvært afskaaret, med forholdsvis kort Endeklo.

2det Fodpar (Fig. 1 *g*) er af langt kraftigere Bygning, navnlig hos Hannen, og har Haanden af meget betydelig Størrelse og oval Form, med Griberanden noget

Description. — The body (see Pl. XV, fig. 1) is rather slender in form and greatly compressed from the sides, though with the back rounded.

The head is about of the same length as the 2 anterior segments taken together, and obtuse in front, without a distinct rostrum and with the lateral corners evenly rounded.

The 4 anterior pairs of epimera are rather small, though a trifle higher than the body and well-nigh uniform in size and shape; their lower margin is evenly arched, and quite smooth — not serrate.

On all the abdominal segments, with the exception of the last, the posterior margin (see fig. *h* 1) juts out above as 2 flat, appressed spines, between which occur a somewhat variable number (from 2 to 4) of considerably smaller spines, or denticles. The posterior angle of the lateral plates of the 2nd and 3rd segments is produced to a sharp, upward-curving point.

Of eyes, not a trace could be detected in the recently taken specimens.

The 1st pair of antennæ are of considerable length, but very little shorter than the whole body. The peduncle is exceedingly elongate and slender, with the 2 first joints largest and well-nigh equal in length: last joint a good deal shorter. The flagellum is somewhat longer than the peduncle, filiform, and very distinctly articulated: number of articulations about 24. The secondary flagellum (see fig. 1 *a*) is very small, and composed of only 3 articulations.

The 2nd pair of antennæ attain scarcely half the length of the 1st, and have the flagellum composed of only 11 articulations.

The mandibles (fig. 1 *b*) are thickset in structure, with the molar protuberance distinctly defined. The palp is very small, well-nigh rudimentary, with the last articulation simple acute and terminating in 2 simple bristles.

The 1st pair of maxillæ (fig. 1 *c*) have the true masticatory lobe armed with strong spines. The inner lobe, or basal plate, is elliptic, and, along the inner margin, provided with numerous plumose bristles. The palp is very slender, with the last articulation narrowly falciform, and armed at the point with a few delicate spines.

The 2nd pair of maxillæ (fig. 1 *d*) have both lobes oval in form and nearly equal in size.

The maxillipeds (fig. 1 *e*) exhibit the usual structure. The outer masticatory lobe is rather large, and furnished along the inner margin with a series of short spines. The last articulation of the palp is somewhat dilated at the extremity, and there densely beset with bristles. Terminal claw comparatively short and conically pointed.

The 1st pair of legs (fig. 1 *f*) are comparatively feeble in structure, and have the hand scarcely at all longer than the preceding joint, as also abruptly truncate at the extremity, with terminal claw comparatively short.

The 2nd pair of legs (fig. 1 *g*) are of far more powerful structure, especially in the male, and have the hand of very considerable size and oval in form, with the palmar

skjæv og nedentil begrændset af et fremspringende, med en kort Torn bevæbnet Hjørne: bagenfor dette er den nedre Kant af Haanden besat med flere Knipper af korte Børster.

De øvrige Fødder er temmelig stærkt forlængede, kun sparsomt børstebesatte og har de 3 ydre Led omtrent af ens Længde. Hofteleddet paa de 3 bagerste Par er pladeformigt udvidet, af oval Form og bagtil utydeligt sagtakket.

Af Halefødderne er de 2 forreste Par (Fig. 1 *i*) af ens Bygning, med begge Grene vel udviklede og lancetformige. Sidste Par (Fig. 1 *k*) viser derimod et temmelig afvigende Udseende. Det er baade længere og kraftigere bygget end nogen af de foregaaende Par og har den indre Gren ganske rudimentær, medens den ydre Gren er enormt udviklet, konisk tilspidset i Enden, og langs Kanterne bevæbnet med nogle faa korte Torner.

Halevedhænget (Fig. 1 *l*) er forholdsvis lidet og klovet lige til Roden, med Sidelapperne noget skjævt afskaarne i Spidsen og her forsynede med en kort Børste.

Dyrets Farve er ensformig hvid, uden det mindste Spor af Pigmentering.

Længden af de største Exemplarer er 26^{mm}.

Forekomst. Af denne Art toges under Expeditionens sidste Togt en hel Del Exemplarer paa en enkelt Lokalitet i Havet Vest af Spitsbergen (Stat. 353). Alle de indsamlede Exemplarer fandtes indkrølne i Hulninger eller Gange (rimeligvis oprindeligt dannede af en Teredo) i et Stykke gammelt Træ, der optoges med Bundskraben fra det enorme Dyb af 1333 Favne. Stationen tilhører den kolde Area.

margin somewhat oblique, and below defined by a projecting corner, armed with a short spine; posterior to this corner, the lower margin of the hand is beset with several bunches of short bristles.

The remaining pairs of legs are considerably elongated, sparingly furnished with bristles, and have the outer 3 joints about equal in length. The basal joint of the 3 posterior pairs is lamelliform-dilated, oval in form, and behind indistinctly serrate.

Of the caudal stylets, the 2 anterior pairs (fig. 1 *i*) are uniform in structure, with both branches well developed and lanceolate. The last pair (fig. 1 *k*) exhibit, on the other hand, a rather deviating appearance. These are alike longer and more powerful in structure than any of the preceding pairs, and have the inner branch quite rudimentary, whereas the outer one is prodigiously developed, acuminate at the extremity, and beset along the margins with a few short spines.

The telson (fig. 1 *l*) is comparatively small and cleft to the base, having the lateral lobules somewhat obtusely truncate at the extremity, and furnished there with a short bristle.

Colour a uniform white, without the slightest trace of pigment.

Length of largest specimens 26^{mm}.

Occurrence. — Of this species, a number of individuals were taken, on the 1st cruise of the Expedition, in a single locality, off the west coast of Spitzbergen (Stat. 353). All the specimens collected were found within cavities or passages (originally, there is reason to believe, the work of a Teredo) in an old piece of wood that came up in the dredge from the enormous depth of 1333 fathoms. The Station lay in the cold area.

Gen. 3. **Amathillopsis,** Heller, 1875.

Crust. Pycnog. & Tunicaten d. K. K. Oster. Ung. Nordpol-Expedition.

53. Amathillopsis spinigera, Heller.

(Pl. XV, Fig. 2).

Amathillopsis spinigera, Heller: l. c. pg. 11, Tab. III. Fig. 17—22, Tab. IV. Fig. 1—8.

Jeg giver her en forbedret Tegning af denne characteristiske, under den Øster.-Ungarske Nordpolexpedition opdagede Amphipode, hvoraf talrige pragtfulde Exemplare ogsaa erholdtes under vor Nordhavsexpedition. Farven er i levende Tilstand blegt straagul, med intensivt rodfarvede Munddele og forreste Par Fødder, Øinenes Pigment gulhvidt. Længden af de største indsamlede Exemplarer gaar op til 50^{mm},

Gen. 3. **Amathillopsis,** Heller, 1875.

Crust. Pycnog. & Tunicaten d. K. K. Öster.-Ung. Nordpol-Expedition.

53. Amathillopsis spinigera, Heller.

Pl. XV, fig. 2).

Amathillopsis spinigera, Heller: l. c. p. 11, Pl. III. figs. 17—22, Pl. IV, figs. 1—8.

I give here an improved drawing of this characteristic Amphipod, first met with on the Austrio-Hungarian North Pole Expedition, of which numerous magnificent specimens were obtained on the Norwegian Expedition. Colour, in a living state, pale-straw, with oral appendages and anterior pairs of legs a vivid red; ocular pigment yellowish-white. Length of largest specimens reaching 50^{mm}, for an

en for en Amphipode aldeles colosal Størrelse. Vi har noteret den paa ikke mindre end 8 forskjellige Stationer (St. 18. 33. 54. 124. 192. 251. 333. 312), alle tilhørende den kolde Area. Dybden fra 350 til 748 Favne.

Foruden i Nordhavet, hvor Arten forekommer fra den 63de til den 76de Bredegrad, er den som anført under den Oster. Ungarske Nordpolexpedition observeret i Havet Øst af Spitsbergen og nordlig til det nyopdagede Franz-Josephs Land. Arten er saaledes utvivlsomt at betragte som en ægte arktisk Form.

Fam. **Syrrhoïdæ.**

Gen. **Bruzelia**, Boeck, 1870.

Crust. amphip. bor. & arct.

54. **Bruzelia serrata**, G. O. Sars. n. sp.

(Pl. XV, Fig. 3, 3 *a*—*k*).

Bruzelia serrata, G. O. Sars, Crust. & Pycnogonida nova etc., No. 24.

Artscharacteristik. Legemet kort og undersætsigt, med særdeles haarde Integumenter. Hovedet stort og tykt med et langt og tilspidset nedadbøiet Pandehorn; imellem dette og Hovedets Sider en dyb Indbugtning. Alle Forkropssegmenter og de 3 forreste Bagkropssegmenter ovenfil tydeligt kjølede. Kjølen paa de 4 bagre Forkropssegmenter gaaende ud i enkle sammentrykte dorsale Fortsatser, paa de forreste Bagkropssegmenter i 2 paa hinanden følgende Spidser. De 3 bagre Segmenter hvert ovenfil i Midten af den bagre Rand bevæbnet med et tandformigt opadrettet Fremspring; 4de Segment desuden med et lignende i Midten af Rygsiden. De forreste Epimerer smaa og smale; 4de Par mindre end de foregaaende og skjævt afkuttet i Enden; 5te og 6te Par med den bagre Lap forlænget nedad. 3die Bagkropssegments Sideplader bagtil i Midten noget fremspringende og grovt saugtakkede, de nedre Hjørner skarpt tilspidsede. Ingen Øine. Folerne tynde, af den for Slægten characteristiske Bygning. De 4 forreste Fodpar meget smaa og svage; de 3 bagerste derimod temmelig robuste, med pladeformigt udvidet og bagtil saugtakket Hofteled. Halevedhænget særdeles stort, triangulært, pladeformigt, med en meget smal median Fissur, der naar ud over Midten. Farven ensformig gulgraa. Længden $8^1/_2{}^{mm}$.

Findested. Stat. 124.

Amphipod a truly colossal size. We had the species from not less than 8 different Stations (Stats. 18. 33. 54. 124. 192. 251. 333. 312), all in the cold area; depth ranging from 350 to 748 fathoms.

Exclusive of the North-Atlantic, where the species ranges from the 63rd to the 76th parallel of latitude, this form, as seen from the work cited above, was observed on the Austrio-Hungarian North Pole Expedition in the sea east of Spitzbergen, and as far north as the recently discovered Franz-Josephs Land. Hence the species must unquestionably be regarded as a true Arctic form.

Fam. **Syrrhoïdæ.**

Gen. **Bruzelia**, Boeck, 1870.

Crust. amphip. bor. & arctic.

54. **Bruzelia serrata**, G. O. Sars. n. sp.

(Pl. XV, figs. 3, 3 *a*—*k*).

Bruzelia serrata, G. O. Sars, Crust. & Pycnogonida nova etc., No. 24.

Specific Character. — Body short and thickset, with exceedingly hard integuments. Head large and thick, with long and acute, downward-bent rostrum; between the latter and sides of head a deep sinus. All thoracic segments and the 3 anterior abdominal segments distinctly carinated above; keel on the 4 posterior thoracic segments jutting out as simple, compressed, dorsal projections, on the 3 anterior abdominal segments, as 2 successive points. Each of the 3 posterior segments armed above, in the middle of the posterior margin, with a dentiform, upward-turning projection; 4th segment furnished besides with a similar projection, springing from the middle of the dorsal surface. The foremost epimera small and slender; 4th pair smaller than preceding, and obtusely truncate at extremity; 5th and 6th pairs with posterior lobe prolonged downwards. Lateral plates of 3rd abdominal segment somewhat projecting in the middle posteriorly, and coarsely serrate. No eyes. Antennæ slender, exhibiting the structure characteristic of the genus. The 4 anterior pairs of legs very small and feeble; the 3 posterior, on the other hand, somewhat robust, with basal joint lamelliform-dilated and serrate posteriorly. Telson exceedingly large, triangular, lamelliform, with a very small median fissure, extending beyond the middle. Colour a uniform yellowish-grey. Length $8^1/_2{}^{mm}$.

Locality. — Stat. 124.

Bemærkninger. Fra den typiske Art, *Br. typica* Boeck, er denne strax kjendelig ved den skarpt markerede dorsale Kjøl med sine høie sammentrykte Fortsatser, samt ved de bagtil saugtakkede Sideplader paa 3die Bagkropssegment.

Beskrivelse. Legemet er (se Pl. XV, Fig. 3) forholdsvis kort og undersætsigt, samt af en noget kantet Form, idet Epimererne danner med Kropssiderne en tydelig Vinkel.

Integumenterne er ualmindelig faste og haarde, kalkagtige og viser overalt en tydelig punkteret Skulptur, der dannes af talrige smaa grubeformige Fordybninger.

Hovedet er meget stort og ligesom opsvulmet, oventil og til Siderne jevnt convext og fortil gaaende ud i et langt og spidst, nedadbøiet Pandehorn. Imellem dette og Hovedets forreste Sidekanter er en dyb og smal Indbugtning, hvori 1ste Par Folere er indleddede. Sidehjørnerne er bredt afrundede eller næsten afstumpede.

Langs ad Ryggen strækker sig en tydeligt markeret Kjøl, som paa de 4 bageste Forkropssegmenter og de 3 forreste Bagkropssegmenter hæver sig til høie, sammentrykte og bagudrettede Fortsatser. Paa Forkroppen er disse Fortsatser enkle, medens der paa de 3 forreste til Bagkroppen hørende findes fortil en tilspidset Flig, hvorved disse Fortsatser her synes ligesom tvedelte. Kjølen fortsætter sig ogsaa delvis paa de 3 bageste Segmenter, der hvert ved den bagre Rand har et tandformigt, opadrettet Fremspring; et lignende findes desuden i Midten af 4de Bagkropssegments Rygside. Af Forkropssegmenterne er de 3 forreste meget korte og til Siderne begrændsede af noget Sformigt bøiede Suturer; de 4 følgende tiltager successivt noget i Længde bagtil. De 3 forreste Bagkropssegmenter er meget store, med særdeles brede og dybe Sideplader. Paa 3die Segment er den bagre Rand af Sidepladerne i Midten noget fremspringende og delt i 5 stærke opadrettede Saugtakker (se Fig. 3 *i*); de nedre Hjørner er udtrukne i en skarp dolkformig Spids, der oventil er begrændset fra det ovenomtalte saugtakkede Fremspring ved en halvmaaneformig Indbugtning.

De 3 forreste Par Epimerer er meget smaa, tæt sammentrængte og noget divergerende med Enderne samt stillede næsten lodrette, dannende med Kropssiderne en tydelig Vinkel. 4de Par er lavere end de 2 foregaaende og i Enden skraat afskaaret, med et kort vinkelformigt Fremspring i den bagre Kant. De 2 følgende Par har den bagre Lap forlænget nedad i Form af en noget buet Fortsats.

Af Øjne findes ligesom hos den typiske Art intetsomhelst Spor.

1ste Par Folere er omtrent saa lange som Hovedet og de 5 forreste Segmenter tilsammen og af forholdsvis spinkel Bygning. Skaftet er temmelig stærkt forlænget, med 1ste Led størst, de 2 følgende indbyrdes af ens Længde.

Remarks. — From the typical species, *Br. typica* Boeck, this form may at once be distinguished by the sharply marked dorsal keel, with its high, compressed projections, as also by the posteriorly serrate lateral plates on the 3rd abdominal segment.

Description. — The body (see Pl. XV, fig. 3) is comparatively short and thickset, and of a somewhat angular form, the epimera and the sides of the body forming together a distinct angle.

The integuments are remarkably hard and firm, calcareous, exhibiting everywhere a distinct, dotted sculpture, produced by numerous minute foveal depressions.

The head is very large and, as it were, intumescent, above and at the sides evenly convex, running out in front as a long and acute, downward-bent rostrum. Between the latter and the anterior lateral margins of the head, extends a deep and narrow curved sinus. The lateral corners are broadly rounded, or almost obtuse.

Along the back stretches a well-marked keel, which, on the 4 posterior thoracic segments and the 3 anterior abdominal segments, rises to high, compressed, and backward-directed projections. On the anterior division of the body, these projections are simple, whereas on the 3 anterior ones, belonging to the abdominal division, occurs anteriorly an acute lappet, giving to the said projections a well-nigh cleft appearance. Moreover, the keel is continued in part along the 3 posterior segments, each of which, on the posterior margin, has a dentiform, upward-turning, projection; a similar projection is observed, too, springing from the middle of the dorsal side of the 4th abdominal segment. Of the thoracic segments, the 3 anterior ones are very short, and limited at the sides by sutures, bent somewhat in the form of the letter S; the 3 succeeding segments increase slightly in length backwards. The 3 anterior abdominal segments are very large, with exceedingly broad and deep lateral plates. On the 3rd segment, the posterior margin of the lateral plates projects a little, and is divided into 5 strong, upward-directed teeth (see fig. 3 *i*); the lower corners are drawn out as a sharp, mucroniform point, defined above from the serrate projection by a crescent-shaped sinus.

The 3 anterior pairs of epimera are exceedingly small, crowded together, and somewhat diverging toward the extremities, moreover placed well-nigh perpendicular, and thus forming, with the sides of the body, a distinct angle. The 4th pair are lower than the 2 preceding ones, and obliquely truncate at the extremity, with a short angular projection springing from the posterior margin. The 2 succeeding pairs have the posterior lobe prolonged downward in the form of a slightly arcuate projection.

Of eyes — as in the typical species — no trace whatever.

The 1st pair of antennæ are about equal in length to the head and the 5 anterior segments taken together, as also comparatively slender in structure. The peduncle is considerably elongated, with the 1st joint largest and

Svøben er noget kortere end Skaftet og sammensat af 8 Led. Bisvøben er liden, koniskt tilspidset og bestaaende af 2 Led, hvoraf det sidste er særdeles lidet (se Fig. 3 *a*).

2det Par Folere er noget længere end 1ste Par og af en lignende spinkel Form. Af Skaftets Led er det næstsidste længst. Svøben er neppe halvt saa lang som Skaftet og sammensat af circa 8 Led.

Overlæben (Fig. 3 *b*) er meget stor og noget hjelmformig samt stærkt incrusteret, med den nedre Del noget indknebet og i Enden næsten tvært afkuttet.

Kindbakkerne (Fig. 3 *c—d*) er af en meget eiendommelig og usædvanlig compakt Bygning. Formen er uregelmæssig qvadratisk, med Tyggeranden fuldkommen glat og ubevæbnet, skjondt en jevn Indbugtning i Midten antyder de 2 sædvanlige Partier, et forreste og et bagerste (Tyggeknuden). Fra den indre Flade af Kindbakken udgaar en smal tungeformig Fortsats, der rimeligvis tjener til Fæste for Abductormusklerne. Palpen er meget tynd, næsten borsteformig, men bestaar af de sædvanlige 3 Led.

1ste Par Kjæver (Fig. 3 *e*) har den egentlige Tyggelap indad stærkt fremspringende og paa den afkuttede Ende besat med talrige tynde Torner. Basalpladen er næsten halvcirkelformig og forsynet med 8 stærke Fjærborster. Palpen er forholdsvis tynd, med sidste Led noget buet og neppe udvidet mod Enden.

2det Par Kjæver (Fig. 3 *f*) har den indre Lap baade længere og bredere end den ydre, der kun i Spidsen er forsynet med Borster.

Kjævefodderne (Fig. 3 *g*) udmærker sig ved den usædvanlig stærke Udvikling af den indre Tyggelap, der er af oval Form, stærkt incrusteret og langs sin noget buede indre Kant bevæbnet med en Rad af 9 særdeles grove, kamformigt ordnede Tænder. Palpen er tynd og forlænget, med sidste Led næsten lineært og Endekloen ganske kort.

De 2 forreste Fodpar (Fig. 3 *h*) er indbyrdes af ens Udseende og meget svagt byggede, med Haanden usædvanlig liden, medens det foregaaende Led (Carpus) er stærkt forlænget og i sin nedre Kant besat med en dobbelt Rad af tildels ciliérede Borster.

De 2 følgende Fodpar er ligeledes usædvanlig svage. Derimod er de 3 bagerste Par forholdsvis kraftigt udviklede og ogsaa rigeligere borstebesatte. De tiltager successivt i Længde bagtil og har Hofteleddet pladeformigt udvidet og i den bagre Kant tæt saugtakket. Dette Led tiltager ligeledes i Størrelse i samme Forhold, saa at det paa sidste Par er over dobbelt saa stort som paa 5te. Af de øvrige Led er det sidste længst og meget tyndt, lineært. Endekloen er forholdsvis kort.

the 2 succeeding ones equal in length. The flagellum is somewhat shorter than the peduncle, and composed of 8 articulations. The secondary flagellum is small, conically pointed, and composed of 2 articulations, — the latter exceedingly small (see fig. 3 *a*).

The 2nd pair of antennæ are somewhat longer than the 1st, and of a similar slender form. Of the joints of the peduncle, the penultimate is longest. The flagellum attains scarcely half the length of the peduncle, and has about 8 articulations.

The labrum (fig. 3 *b*) is very large and somewhat galeate in form, as also thickly incrusted, with the lower part slightly instricted and abruptly truncate at the extremity.

The mandibles (figs. 3 *c—d*) exhibit a very peculiar and remarkably compact structure. Their form is irregular-quadrate, with the cutting edge perfectly smooth and unarmed, though a uniform emargination in the middle indicates the 2 commonly observed portions, an anterior and a posterior (the molar protuberance). From the inner surface of the mandible, juts forth a slender linguiform projection, serving probably as a means of attachment for the abductor muscles. The palp is very slender, well-nigh setiform, but as usual composed of 3 articulations.

The 1st pair of maxillæ (fig. 3 *e*) have the true masticatory lobe strongly projecting inwards, and beset at the truncate extremity with numerous slender spines. The basal plate is well-nigh semicircular in form and furnished with 8 strong plumous bristles. The palp is comparatively slender, with the last articulation somewhat arched and but very little, if at all, dilated at the extremity.

The 2nd pair of maxillæ (fig. 3 *f*) have the inner lobe both longer and broader than the outer, which at the point only is furnished with bristles.

The maxillipeds (fig. 3 *g*) are characterized by the remarkably powerful development of the inner masticatory lobe, which is oval in form, thickly incrusted, and armed along its inner, somewhat arcuate margin with a row of 9 exceedingly coarse, in arrangement pectinate, teeth. The palp is slender and elongate, with the last articulation almost linear and the terminal claw quite short.

The 2 anterior pairs of legs (fig. 3 *h*) are uniform in appearance and very feeble in structure, with the hand remarkably small, whereas the preceding articulation (carpus) is greatly elongated, and beset along the lower margin with a double series of partly ciliated bristles.

The 2 succeeding pairs of legs are likewise remarkably feeble. On the other hand, the 3 posterior pairs are comparatively powerful in development and more abundantly furnished with bristles. They increase successively in length posteriorly, and have the basal joint lamelliform-dilated, as also closely serrate along the posterior margin. This joint likewise increases in the same proportion, so that, on the last pair, it is more than twice as large as on the 5th. Of the remaining joints, the last is the longest, very slender and linear. Terminal claw comparatively short.

De 2 forreste Par Halefødder har den ydre Green betydelig kortere end den indre. Sidste Par, som ikke overrager disse, har derimod begge Grene ligeligt udviklede (se Fig. 3 *k*).

Halevedhænget (ibid.) er forholdsvis af en ganske ualmindelig Storrelse og rækker næsten til Enden af sidste Par Halefødder. Det er pladeformigt og af forlænget triangulær Form, med Sidekanterne glatte og Spidsen forsynet med 4 smaa Tænder. Ved en meget smal Fissur er det klovet indtil foran Midten.

Farven er ensformig gulgraa og kun lidet gjennemsigtig.

Længden af det storste undersøgte Exemplar er $8^1/_2{}^{mm}$.

Forekomst og Udbredning. Nogle faa Exemplarer af denne meget distincte Art erholdtes under Expeditionens 2det Togt i Havet Vest af Helgelandskysten (Stat. 124) fra et Dyb af 350 Favne. Stationen tilhører den kolde Area. Samme Art har jeg ogsaa taget ved vor Kyst, nemlig i Korsfjorden Syd for Bergen og ved Lofoten, hvor endnu en 3die ny Art af samme Slægt, *B. tuberculata*, forekommer.

The 2 anterior pairs of caudal stylets have the outer branch considerably shorter than the inner. The last pair, which do not reach beyond them, have, on the other hand, both branches equally developed (see fig. 3 *k*).

The telson (ibid.) is comparatively of quite a remarkable size, reaching almost to the extremity of the last pair of caudal stylets. It is lamelliform and elongate-triangular, with the lateral margins smooth and the point furnished with 4 small teeth. An exceedingly narrow fissure cleaves it till past the middle.

Colour a uniform yellowish-grey, and but slightly translucent.

Length of the largest specimen examined $8^1/_2{}^{mm}$.

Occurrence and Distribution. — A few individuals of this very distinct species were obtained, on the 2nd cruise of the Expedition, in the sea west of the coast of Helgeland (Stat. 124), from a depth of 350 fathoms. This Station belonged to the cold area. The same species I have also taken in the Korsfjord, south of Bergen, and at Lofoten, where a third and new species of the same genus, *B. tuberculata*, is found to occur.

Fam. **Stenothoidæ.**

Gen. 1. **Metopa**, Boeck, 1870.

Crust. amphip. bor. & arct.

55. **Metopa spectabilis**, G. O. Sars, n. sp.

(Pl. XV. Fig. 4 *a*—*n*).

Metopa spectabilis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 28.

Artscharacteristik. Legemet mindre undersætsigt end sædvanligt, noget sammentrykt. Hovedets Sidehjørner noget fremspringende og tilrundede. 4de Par Epimerer afrundet triangulære, omtrent saa store som de 2 foregaaende Par tilsammen. Øinene meget smaa, runde, med rødt Pigment. Følerne saavel hos Hun som Han meget ulige udviklede; 2det Par næsten dobbelt saa lange som, og meget kraftigere byggede end 1ste Par, næsten fodformige, med Skaftets 2 sidste Led stærkt forlængede, Svøben særdeles liden og tynd. 1ste Fodpar svagt bygget, med 3die Led nedad gaaende ud i en smalt tilrundet Lap. 2det Fodpar hos begge Kjøn kraftigt udviklet, med Haanden særdeles stor og opsvulmet. Griberanden skjæv og uregelmæssigt bugtet, med et enkelt lidet tandformigt Fremspring i Midten og nedad begrændset af en stærk tilspidset Fortsats, hos Hannen nedentil dybt indbugtet, med den nedre Fortsats særdeles stor og lancetformig. De 3 bagerste Fodpar med

Fam. **Stenothoidæ.**

Gen. 1. **Metopa**, Boeck, 1870.

Crust. amphip. bor. & arctic.

55. **Metopa spectabilis**, G. O. Sars, n. sp.

(Pl. XV, fig. 4. *a*—*n*).

Metopa spectabilis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 28.

Specific Character. — Body less thickset than usual, somewhat compressed. Lateral corners of head slightly projecting, and rounded. Fourth pair of epimera rounded triangular, about as large as the 2 preceding pairs taken together. Eyes very small, round, with red pigment. Antennæ, alike in female and male, most unequally developed; 2nd pair almost twice as long as, and much more powerful in structure than, 1st, well-nigh pediform, with the 2 last joints of peduncle greatly elongated; flagellum exceedingly small and slender. First pair of legs feeble in structure, with 3rd joint jutting out below as a narrow, rounded lobe. Second pair of legs in both sexes powerfully developed, with hand exceedingly large and swollen, palmar margin oblique and irregular-sinuous, with a single small dentiform projection in the middle, and bounded below by a strong, acute apophysis, in the male deeply incurved below, with the lower projection exceedingly large and lan-

3die Led kun lidet udvidet bagtil. Hofteleddet paa de 2 bagerste Par ovalt. Sidste Par Halefødder simple, uden laterale Torner. Halevedhænget simpelt, tilrundet. Legemet gjennemsigtigt, med kun sparsomt rødligt Pigment. Længden indtil 14^{mm}.

Findesteder. Stat. 31. 343.

Bemærkninger. Denne Art staar vistnok meget nær *M. Alderi* Sp. Bate, med hvilken jeg ogsaa først identificerede den, men viser dog, som jeg senere har overbevist mig om, tilstrækkelige Afvigelser til at maatte opfattes som en distinct Art. Foruden ved den langt betydeligere Størrelse kjendes den strax ved den særdeles ulige Udvikling af de 2 Par Følere, der forholder sig fuldkommen ens hos begge Kjøn, medens disse ialfald hos Hunnen af *M. Alderi* er omtrent af ens Længde; fremdeles ved Formen og Bevæbningen af 2det Fodpars Haand, endelig ved det bagtil mindre stærkt udvidede 3die Led paa de bagre Fodpar.

Beskrivelse. Legemet er (se Pl. XV, Fig. 4) af forholdsvis mindre undersætsig Form end hos de øvrige bekjendte Arter af Slægten og noget sammentrykt fra Siderne, med rund, buet Ryg og tynde gjennemsigtige Integumenter.

Hovedet er forholdsvis lidet og har Sidehjørnerne temmelig stærkt fremspringende mellem Roden af de 2 Par Følere, samt smalt tilrundede.

Af Epimererne er det 1ste Par som sædvanlig ganske rudimentært og fuldstændig dækket af det følgende Par. Dette er af elliptisk Form og skjævt fortilrettet. 3die Par er aflangt 4-kantet og omtrent dobbelt saa høit som Kroppen. 4de Par er omtrent saa stort som begge de 2 foregaaende tilsammen og af afrundet triangulær Form, bagtil smalt tilrundet og dækkende fuldstændig Basis af 5te Fodpar.

De 3 forreste Bagkropssegmenter har Sidepladerne forholdsvis lidet udviklede og dannende bagtil et stumpt Hjørne.

Øinene er meget smaa, runde, med Pigmentet, der er af rød Farve, kun indtagende den centrale Del.

1ste Par Følere er forholdsvis meget smaa og tynde, med Skaftets 1ste Led omtrent dobbelt saa langt som 2det, og sidste Led særdeles lidet. Svøben er omtrent af Skaftets Længde og sammensat af omkring 20 korte Led.

2det Par Følere er derimod særdeles kraftigt udviklede og næsten dobbelt saa lange som 1ste Par, med Skaftet meget stærkt, cylindriskt, hvorimod Svøben er ualmindelig liden og tynd, kun dannende et smalt snærtformigt 7-leddet Appendix til samme (se Fig. 4 *a*).

Overlæben (Fig. 4 *b*) danner en liden paatværs elliptisk og i den nedre Kant noget indbugtet bevægelig Lap.

ceolate. The 3 hindmost pairs of legs with 3rd joint but slightly dilated posteriorly, basal joint oval on the 2 posterior pairs. Last pair of caudal stylets simple, without lateral spines. Telson simple, rounded. Body translucent, and but sparingly furnished with pigment, of a reddish colour. Length reaching 14^{mm}.

Locality. — Stat. 31. 343.

Remarks. — This form approximates, it is true, very closely *M. Alderi* Sp. Bate, with which indeed I first held it to be identical; meanwhile it exhibits, as I subsequently found, sufficient deviating characteristics to warrant our regarding it as a distinct species. Let alone the far greater size, it can immediately be recognized by the very unequal development of the 2 pairs of antennæ — perfectly uniform in both sexes; whereas the antennæ (in the female of *M. Alderi* at least) are about equal in length; moreover, by the armature characterizing the hand of the 2nd pair of legs; and finally, by the 3rd joint of the hindmost pairs of legs being less dilated posteriorly.

Description. — The body (see Pl. XV, fig. 4) is comparatively less thickset in form than in any of the other known forms of the genus, and somewhat compressed from the sides, with a round, arcuate back and thin, translucent integuments.

The head is relatively small, and has the lateral corners narrowly rounded and projecting a good deal between the bases of the 2 pairs of antennæ.

Of the epimera, the 1st pair are as usual quite rudimentary, and wholly covered by the 2nd. The latter are elliptic in form and point obliquely forward. The 3rd pair are oblongo-quadrate, and well-nigh double the height of the body. The 4th pair are about as large as both the 2 preceding ones taken together, and rounded-triangular in form; posteriorly rounded narrowly off and covering the whole base of the 5th pair of legs.

The 3 anterior abdominal segments have the lateral plates comparatively slight in development, and forming posteriorly an obtuse corner.

The eyes are very small, round, with the pigment of a red colour, occupying the central part only.

The 1st pair of antennæ are comparatively very small and slender, with the 1st joint of the peduncle about twice as long as the 2nd and the last joint exceedingly small. The flagellum is nearly equal to the peduncle in length, and composed of about 20 short articulations.

The 2nd pair of antennæ, on the other hand, are most powerful in development, and well-nigh twice as long as the 1st, with the peduncle very strong and cylindric, whereas the flagellum is remarkably small and slender, forming merely a lash-like seven-jointed appendix (see fig. 4 *a*).

The labrum (fig. 4 *b*) consists of a small, transversely elliptic, and, along the lower margin, somewhat incurved, movable lobe.

Underlæben (Fig. 4 *c*) har Sidelapperne stærkt divergerende og af en noget uregelmæssig, næsten oxedannet Form.

Kindbakkerne (Fig. 4 *d*) er forholdsvis svagt udviklede og har den mod Munden rettede Ende fint tandet, men mangler tydeligt begrændset Tyggeknude. Palpen er meget liden og rudimentær, skjondt bestaaende af de 3 sædvanlige Led.

Kjæverne (Fig. 4 *e—f*) er ligeledes meget smaa og svage. 1ste Par (Fig. 4 *e*) har Tyggepladen temmelig bred, hvorimod Palpen er smal, næsten lineær; Basalpladen synes at mangle Børster. 2det Par (Fig. 4 *f*) har den indre Lap kortere end den ydre.

Kjævefodderne (Fig. 4 *g*) er, i Modsætning til de ovrige Munddele, meget store, fodformige og rager frit frem nedenunder Hovedet (se Fig. 4). De mangler ganske Tyggelap, men har en liden rudimentær Basalplade. Palpen er særdeles stærkt bygget og ender med en kraftig Klo.

1ste Fodpar (Fig. 4 *h*) er forholdsvis lidet og svagt bygget. 3die Led forlænger sig nedentil i en smalt tilrundet børstebesat Lap. Haanden er af oval Form og kun lidet større end det foregaaende Led, men har, i Modsætning til hvad Tilfældet er hos enkelte andre Arter af Slægten, en tydeligt begrændset skraa Griberand.

2det Fodpar (Fig. 4 *i—k*) er hos begge Kjon særdeles kraftigt udviklet, med 3die og 4de Led korte og brede, udvidede mod Enden og nedad forlængede i smaa børstebesatte Lapper. Haanden er meget stor og opsvulmet samt viser hos Hun og Han et temmelig forskjelligt Udseende. Hos Hunnen (Fig. 4 *i*) er den af tilnærmelsesvis oval Form, med Griberanden noget skraa og uregelmæssigt bugtet, fint cilieret, samt omtrent ved Midten forsynet med et enkelt kort tandformigt Fremspring; nedentil er Griberanden begrændset af en stærk, triangulært tilspidset Fortsats, der bagtil gaar i Flugt med den nedre Rand af Haanden. Hos Hannen (Fig. 4 *k*) viser Griberanden nedenfor den mediane Tand en særdeles dyb Indbugtning eller Indsnit, hvorved den nedenfor liggende Fortsats antager Formen af en særdeles stor lancetformig fremskydende Flig.

De ovrige Fodder er temmelig spinkle, kort børstebesatte og alle omtrent af ens Længde. 5te Par (Fig. 4 *l*) har som hos Slægtens ovrige Arter Hofteleddet meget smalt og af lineær Form, hvorimod dette Led paa de 2 følgende Par er pladeformigt udviklet og ovalt. 3die Led paa disse Fodpar gaar bagtil ud i et tilspidset Hjørne, der dog paa langt nær ikke er saa stærkt fremspringende som hos *M. Alderi*.

Sidste Par Halefodder (Fig. 4 *m*) rækker ikke ud over de 2 foregaaende Par og er som hos de ovrige til denne Familie hørende Former simple, 3-leddede, samt koniskt tilspidsede. Kanterne er ganske glatte, uden Torner eller Børster.

Halevedhænget (Fig. 4 *n*) er aflangt ovalt og i Spidsen simpelt tilrundet, uden nogensomhelst Bevæbning.

The labium (fig. 4 *c*) has the lateral lobes widely diverging, and somewhat irregular — almost securiform — in shape.

The mandibles (fig. 4 *d*) are comparatively slight in development, and have the extremity directed toward the mouth, finely dentate, but do not exhibit a distinctly defined molar protuberance. The palp is very small, and rudimentary, though consisting, as usual, of 3 articulations.

The maxillæ (fig. 4 *e—f*) are likewise very small and feeble. The 1st pair (fig. 4 *e*) have the masticatory lobe rather broad, whereas the palp is narrow, almost linear; the basal plate would seem to be wholly unprovided with bristles. The 2nd pair (fig. 4 *f*) have the inner lobe shorter than the outer.

The maxillipeds (fig. 4 *g*) — contrary to what is the case with the other oral appendages — are very large, pediform, and jut out freely from beneath the head (fig. 4). The masticatory lobe is entirely wanting, but they have a small rudimentary basal plate. The palp is remarkably strong, and terminates in a powerful claw.

The 1st pair of legs (fig. 4 *h*) are comparatively small, and feeble in structure. The 3rd joint is produced downward to a narrowly rounded lobe. The hand occurs of an oval form, but slightly exceeds the preceding joint in size; it has, however, contrary to what is the case in some species of the genus, a well-defined oblique palmar margin.

The 2nd pair of legs (fig. 4 *i—k*) are in both sexes most powerfully developed, with the 3rd and 4th joints short and broad, dilated towards the extremity and produced downward as small, bristle-bearing lobes. The hand is very large and swollen, and exhibits, both in the male and female, a somewhat different appearance. In the female (fig. 4 *i*), it has an approximately oval form, with the palmar margin somewhat oblique and irregular-sinuous, finely ciliated, and exhibiting a single short dentiform projection; below, the palmar margin is defined by a strong triangular-jointed apophysis, extending posteriorly in a line with the lower margin of the hand. In the male (fig. 4 *k*), the palmar margin exhibits below the median tooth a very deep sinus, or incision, whereby the apophysis jutting forth below it assumes the form of an exceedingly large, lanceolate, protruding lappet.

The remaining legs are comparatively slender, beset with short bristles, and all about equal in length. The 5th pair (fig. 4 *l*) have the basal joint, in common with the other species of the genus, very narrow and linear in form, whereas that joint in the 2 succeeding pairs is lamelliform-dilated and oval. The 3rd joint of these legs juts out posteriorly as a sharp-pointed corner, which, however, does not by far project to a like extent as in *M. Alderi*.

The last pair of caudal stylets (fig. 4 *m*) do not reach beyond the 2 preceding ones, and are, as in the other forms belonging to this family, simple, tri-articulate, and conically pointed. The margins are quite smooth, without either spines or bristles.

The telson (fig. 4 *n*) is oblongo-ovate and simple rounded at the point, without any armature whatever.

Dyrets Farve er hvidagtig og temmelig gjennemsigtig, med kun sparsomt rødligt Pigment, der er afsat hist og her i uregelmæssige Skatteringer.

Længden gaar op til 14^{mm}, og nærværende Art maa saaledes betragtes som en ren Kjæmpe i Sammenligning med de øvrige, fordetmeste pygmæiske Former, der sammensætter den her omhandlede Familie.

Forekomst og Udbredning. Vi har taget denne anselige Art paa 2 vidt adskilte Localiteter, den ene (St. 31) beliggende i Havet udefor Storeggen, den anden (St. 343) SV af Spitsbergen; Dybden fra 417 til 743 Favne. Begge Stationer tilhører den kolde Area. Arten forekommer imidlertid ogsaa ved vore nordlige Kyster. Fra Hammerfest har jeg nemlig et Par vel udprægede Exemplarer, der vistnok er adskilligt mindre, men forøvrigt i alt væsentligt stemmer overens med de under Nordhavsexpeditionen tagne.

The ground-colour of the animal is whitish and well-nigh translucent, with a reddish pigment sparingly disposed here and there in irregular patches.

The length reaches 14^{mm}, and the present species must, therefore, be regarded as a veritable giant in comparison with the other, as a rule pygmean, forms that constitute the family treated of here.

Occurrence and Distribution. — This large-sized species was taken in 2 widely distant localities, the one (Stat. 31) lying in the open sea off Storeggen, the other (Stat. 343) located south-west of Spitzbergen; depth from 417 to 743 fathoms. Both Stations belonged to the cold area. The species, however, also occurs off the northern shores of Norway. From Hammerfest, I have in my possession a few well-marked specimens, which are indeed a good deal smaller, but for the rest closely agree in all essential characteristics with those taken on the Norwegian North-Atlantic Expedition.

56. **Metopa æqvicornis**, G. O. Sars, n. sp.

(Pl. XV, Fig. 5).

Metopa æqvicornis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 29.

Artscharacteristik. Legemet noget mere undersætsigt end hos foregaaende Art. Hovedets Sidehjørner mindre fremspringende. 4de Par Epimerer elliptiske, større end de 2 foregaaende tilsammen. Øinene smaa, runde, med rødt Pigment. Begge Par Følere stærkt forlængede, kun lidet kortere end Legemet og indbyrdes omtrent ens udviklede; 2det Led paa 1ste Pars Skaft noget længere end 1ste Led. 2det Fodpar kraftigt udviklet, med Haanden meget stor og opsvulmet, Griberanden noget skraa og næsten lige samt grovt tandet, begrændset nedentil af en kort Fortsats. De øvrige Lemmer omtrent som hos foregaaende Art. Farven hvidagtig. Længden 7$^1/_2{}^{mm}$.

Findested. Stat. 343.

Bemærkninger. Fra foregaaende Art er denne let kjendelig ved sin ringere Størrelse og de stærkt forlængede samt ligeligt udviklede Følere. Fra *M. longicornis* Boeck, der i Følernes Udseende nærmest stemmer med vor Art, skiller den sig ved det stærkere forlængede 2det Led paa 1ste Par Følere samt ved en forskjellig Form og Bevæbning af 2det Fodpars Haand.

56. **Metopa æqvicornis**, G. O. Sars, n. sp.

(Pl. XV, fig. 5).

Metopa æqvicornis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 29.

Specific Charachter. — Body somewhat more thickset than in preceding species. Lateral corners of head less projecting. Fourth pair of epimera elliptic, larger than the 2 preceding ones taken together. Eyes small, round, with a red pigment. Both pairs of antennæ greatly elongated, but very little shorter than the body, and well-nigh uniform in development; 2nd joint of peduncle in 1st pair somewhat longer than 1st joint. Second pair of legs powerfully developed, with hand very large and tumid, palmar margin somewat oblique and well-nigh straight, as also coarsely dentate, marked off below by a short projection. The other limbs about uniform with those in preceding species. Colour whitish. Length 7$^1/_2{}^{mm}$.

Locality. — Stat. 343.

Remarks. — From the preceding species, this form may be readily distinguished by its inferior size, as also by the greatly elongated and equably developed antennæ. From *M. longicornis* Boeck, which, in the appearance of the antennæ, approximates closest the present species, it differs by the greater elongation of the 2nd joint of the 1st pair of antennæ, as also by the different form and armature of the hand of the 2nd pair of legs.

Beskrivelse. Legemet er (se Pl. XV. Fig. 5) noget mere undersætsigt end hos foregaaende Art og har Ryggen temmelig bred og hvælvet.

Hovedet har de mellem begge Par Følere fremskydende Sidelapper mindre fremspringende og jevnt tilrundede.

De forreste Epimerer er, naar undtages 1ste Par, der som sædvanlig er rudimentært, meget store, mere end dobbelt saa høie som Kroppen og dækker hinanden delvis indbyrdes. 4de Par er af elliptisk Form og kjendeligt større end de 2 foregaaende tilsammen samt bagtil stumpt tilrundet.

De 3 forreste Bagkropssegmenters Sideplader er meget smaa og har det bagre Hjørne noget udtrukket, men i Enden afrundet.

Øinene er som hos foregaaende Art meget smaa, med rødligt Pigment.

Følerne er usædvanlig stærkt forlængede, næsten af hele Legemets Længde og indbyrdes omtrent ens udviklede. 1ste Par har Skaftets 2det Led noget længere end 1ste, hvorimod 3die Led som sædvanlig er meget lidet. Svøben er noget længere end Skaftet, meget tynd og delt i talrige korte Led. 2det Par har Skaftets sidste Led størst og Svøben vel udviklet, omtrent af dettes Længde.

1ste Fodpar synes i det nærmeste at ligne samme hos foregaaende Art.

2det Fodpar er særdeles kraftigt udviklet, med Haanden meget stor og udvidet mod Enden. Griberanden er noget skraa og næsten lige samt grovt tandet i hele sin Længde; nedentil begrændses den af et kort trianguläert Fremspring, der udgaar noget foran Midten af Haandens Længde.

De øvrige Fodpar ligner idethele samme hos foregaaende Art.

Det samme gjælder ogsaa Halefødderne og Halevedhænget.

Farven er hvidagtig og gjennemsigtig, med kun yderst sparsom Pigmentering.

Længden af det undersøgte Exemplar er $7^1/_2{}^{mm}$, altsaa betydelig mindre end af foregaaende Art.

Forekomst. Et enkelt Exemplar af denne Art toges under Expeditionens sidste Togt sammen med foregaaende i Havet SV af Spitsbergen (Stat. 343) fra et Dyb af 743 Favne.

Description. — The body is (see Pl. XV. fig. 5) a trifle more thickset than in the preceding species, with the back rather broad and arcuate.

The head has the lateral lobes — projecting between both pairs of antennæ — less protruding, and evenly rounded.

The anterior epimera, saving the 1st pair, which, as usual, occur rudimentary, are very large — more than twice as high as the body — and partially overlap each other. The 4th pair are elliptic in form and appreciably larger than the 2 preceding ones taken together, as also, hindwards, obtusely rounded.

The lateral plates of the 3 anterior abdominal segments are very small, and have the posterior corner somewhat exserted, though rounded at the tip.

The eyes, as in the preceding species, are exceedingly small, and furnished with a reddish pigment.

The antennæ are remarkably elongated, — attaining well-nigh the total length of the body, and about equal in development. The 1st pair have the 2nd joint of the peduncle somewhat longer than the 1st, whereas the 3rd joint occurs, as usual, very small. The flagellum is a trifle longer than the peduncle, exceedingly slender, and divided into numerous short articulations. The 2nd pair have the last joint of the peduncle largest, and the flagellum well developed, about equal in length to the latter.

The 1st pair of legs would appear in all essential characters to resemble that pair in the preceding species.

The 2nd pair of legs are most powerfully developed, with the hand very large and dilated at the extremity. The palmar margin is somewhat oblique, almost straight, and coarsely dentate throughout the whole of its length; below, it is marked off by a short triangular projection, jutting out somewhat anteriorly to the longitudinal middle of the hand.

The remaining pairs of legs resemble upon the whole the corresponding pairs in the preceding species.

This applies also to the caudal stylets and the telson.

The colour is whitish and translucent, with but very faint pigmentation.

Length of the specimen examined $7^1/_2{}^{mm}$, and hence considerably less than that of the preceding species.

Occurrence. — A single specimen of this species was taken, along with the preceding, in the open sea south-west of Spitzbergen (Stat. 343), at a depth of 743 fathoms.

Gen. 2. **Danaia**, Sp. Bate, 1862.

Catalogue of Amphipoda in Brit. Museum.
Syn: Cressa, Boeck.

57. Danaia abyssicola, G. O. Sars, n. sp.

(Pl. XVI. Fig. 1 *a*).

Danaia abyssicola, G. O. Sars, Crust. & Pycnogonida nova etc., No. 30.

Artscharacteristik. Legemet kort og undersætsigt. Hovedet fortil afkuttet med Sidehjørnerne nedentil udtrukne i en skarp fortilrettet Spids. 1ste Par Epimerer rudimentære, de 2 følgende i det nedre bagre Hjørne bevæbnede med 2—3 skarpe Tænder; 4de Par størst, i den bagre Kant oventil udrandet og nedenfor Udrandningen skarpt-vinklet; de 2 følgede Par tydeligt udviklede, tvelappede. De 3 forreste Bagkropssegmenters Sideplader nedentil skarpt-vinklede. Ingen Øine. 1ste Par Følere stærkt forlængede og tynde, længere end Legemet, Skaftets 1ste Led størst. Svøben over dobbelt saa lang som Skaftet, traadformig. 2det Par Følere neppe halvt saa lange som 1ste Par. 2det Fodpar kraftigt udviklet, med 4de Led nedentil gaaende ud i en smal børstebesat Lap; Haanden bred og sammentrykt, med Griberanden næsten tvær, nedentil begrændset af en kort Fortsats og til hver Side bevæbnet med en Række Torner. De 3 bagerste Fodpar temmelig robuste, alle med pladeformigt udvidet, ovalt Hofteled. Halefødderne og Halevedhænget af sædvanlig Form. Farven hvidagtig. Længden 6^{mm}.

Findested. Stat. 286.

Bemærkninger. Slægten *Cressa* Boeck er utvivlsomt identisk med Sp. Bates Slægt *Danaia*, hvilket sidste Navn har Prioriteten, og den ene af de af Boeck opstillede Arter, *Cr. Schödtei*, er, hvad der tydeligt nok fremgaar af Mr. Stebbings Undersøgelser, identisk med den typiske Art, *Danaia dubia* Sp. Bate. Den her omhandlede Art skiller sig fra de 2 tidligere bekjendte, *D. dubia* Sp. Bate og *D. minuta* Boeck, ved den fuldstændige Mangel af Øine, ved de overordentlig stærkt forlængede 1ste Par Følere samt ved 1ste Fodpars Form.

Beskrivelse. Legemet er (se Pl. XVI, Fig. 1) kort og undersætsigt samt temmelig høit og sammentrykt fra Siderne.

Hovedet er forholdsvis lidet og smalt, i Enden næsten tvært afkuttet, med Sidehjørnerne nedentil udtrukne i en skarp horizontalt fortilrettet Torn.

1ste Par Epimerer er som hos foregaaende Slægt ganske rudimentære og ikke synlige udvendigt. De 3 følgende Par er derimod meget store, næsten dobbelt saa høie som Kroppen. 2det og 3die Par har det nedre bagre Hjørne bevæbnet med 2—3 skarpe Saugtakker, der vender

Gen. 2. **Danaia**, Sp. Bate, 1862.

Catalogue of Amphipoda in Brit. Museum.
Syn: Cressa, Boeck.

57. Danaia abyssicola, G. O. Sars, n. sp.

(Pl. XVI. fig. 1 *a*).

Danaia abyssicola, G. O. Sars, Crust. & Pycnogonida nova etc., No. 30.

Specific Character. — Body short and thickset. Head truncate anteriorly, with lateral corners produced below to a sharp, forward-directed point. First pair of epimera rudimentary, the 2 succeeding pairs armed in the lower posterior corner with 2 or 3 acute teeth; 4th pair largest, emarginate above along the posterior border and acute-angled below the emargination; the 2 succeeding pairs distinctly developed, bilobular. Lateral plates of the 3 anterior abdominal segments acute-angled below. No eyes. First pair of antennæ greatly produced and slender, exceeding body in length. 1st joint of peduncle largest, flagellum more than twice as long as peduncle, filiform. Second pair of antennæ scarcely half the length of 1st. Second pair of legs powerfully developed, with 4th joint jutting out below as a narrow, bristle-bearing lobe; hand broad and compressed, with palmar margin well-nigh transverse, bounded below by a short prolation and armed on either side with a row of spines. The 3 posterior pairs of legs rather robust, each having an oval, lamelliform-dilated basal joint. Caudal stylets and telson of usual form. Colour whitish. Length 6^{mm}.

Locality. — Stat. 286.

Remarks. — The genus *Cressa* Boeck is unquestionably identical with Sp. Bates genus *Danaia*, the latter of the 2 names however being entitled to priority; and one of the species established by Boeck, viz. *Cr. Schödtei*, is plainly identical — a fact sufficiently evident from the result of Mr. Stebbing's investigations — with the type-species, *Danaia dubia* Sp. Bate. The species here treated of differs from the 2 previously known, *D. dubia* Sp. Bate and *D. minuta* Boeck, by the total want of eyes, the remarkably elongated 1st pair of antennæ, and by the form of the 1st pair of legs.

Description. — The body (see Pl. XVI. fig. 1) is short and thickset, as also rather high and compressed from the sides.

The head is comparatively small and narrow, well-nigh transversely truncate at the extremity, with the lateral corners produced below to a sharp, horizontal, anterior-directed spine.

The 1st pair of epimera are, as in the preceding genus, quite rudimentary and not visible externally. The 3 succeeding pairs, on the contrary, are very large, well-nigh twice as deep as the body. The 2nd and 3rd pairs have the lower posterior angle armed with 2 or 3 sharp teeth,

fortil og hvoraf den forreste er storst. 4de Par er derimod nedentil ubevæbnet, men i den bagre Kant ovenfor Midten udtrukket i et skarpt Hjørne; ovenfor dette viser det en halvmaaneformig Udrandning, som lader det følgende Par ganske frit. Dette ligesom det følgende Par er forholdsvis temmelig stort, tvelappet, med den bagre Lap nedentil noget udtrukket. Sidste Par er betydelig mindre.

De 3 forreste Bagkropssegmenter har Sidepladerne nedentil udtrukne i et skarpt-vinklet Hjørne. Paa 3die Segment viser den bagre Rand til hver Side et dybt vinkelformigt Indsnit.

Af Øine kunde intetsomhelst Spor bemærkes hos det nyligt indfangede Dyr.

1ste Par Følere er af en ganske ualmindelig Længde og selv adskilligt længere end hele Legemet. Af Skaftets 3 Led er det 1ste storst, det 3die meget lidet. Svøben er særdeles tynd, traadformig og over dobbelt saa lang som Skaftet.

2det Par Følere er nepp halvt saa lange som 1ste Par og har Skaftets næstsidste Led storst og Svøben omtrent af Skaftets Længde.

Munddelene og 1ste Fodpar kunde ikke nøiere undersøges paa det eneste foreliggende Exemplar.

2det Fodpar (Fig. 1 *a*) er temmelig kraftigt bygget, med 4de Led nedad forlænget i en smal tungeformig og børstebesat Lap. Haanden er meget stor, stærkt sammentrykt fra Siderne og betydeligt udvidet mod Enden, som er næsten tvært afkuttet. Griberanden er næsten lige og til hver Side bevæbnet med en regelmæssig Rad af 8 Torner; nedentil begrændses den af et ganske kort tandformigt Fremspring.

De følgende Fodpar er alle omtrent af ens Længde og besatte med korte Børster. De 3 bagerste Par er noget mere robuste end de 2 foregaaende og har alle Hofteleddet pladeformigt udvidet og af regelmæssig oval Form.

Bagkroppens Vedhæng synes ikke i nogen væsentlig Grad at skille sig fra samme hos foregaaende Slægt.

Dyrets Farve er hvidagtig, uden tydelig Pigmentering.

Længden af det undersøgte Exemplar er omtrent 6^{mm}, en Størrelse, som ingen af de 2 hidtil bekjendte Arter paa langt nær opnaar.

Forekomst. Et enkelt Exemplar af denne Form toges under Expeditionens sidste Togt i Havet mellem Finmarken og Beeren Eiland (Stat. 286) paa et Dyb af 447 Favne. Stationen tilhører den kolde Area.

directed forward, and of which the anterior is largest. The 4th pair, on the other hand, are unarmed below, but drawn out posteriorly, above the middle, to a sharp corner; immediately above the latter, occurs a lunate emargination, which leaves the following pair quite free. Both this pair and the next are comparatively rather large, bilobular, with the posterior lobe somewhat produced below. The last pair are considerably smaller than any of the preceding ones.

The 3 anterior abdominal segments have the lateral plates produced below to an acute-angled corner. On the 3rd segment, the posterior margin exhibits on either side a deep, angular incision.

Of eyes, no trace could be detected in the recently taken animal.

The 1st pair of antennæ attain a truly remarkable length, considerably exceeding even that of the body itself. Of the 3 joints of the peduncle, the 1st is the largest, the 3rd very small. The flagellum is exceedingly slender, filiform, and more than twice as long as the peduncle.

The 2nd pair of antennæ attain scarcely half the length of the 1st, have the penultimate joint of the peduncle largest, and the flagellum about as long as the peduncle.

The oral appendages and the 1st pair of legs could not be closely examined in the only specimen before us.

The 2nd pair of legs are rather powerful in structure (fig. 1 *a*), with the 4th joint produced below to a narrow, linguiform, bristle-bearing lobe. The hand is very large, greatly compressed from the sides, and considerably dilated towards the extremity — well-nigh transversely truncate. The palmar margin is almost straight, and on either side armed with a regular series of 8 spines; below, it is marked off by an exceedingly short dentiform projection.

The succeeding pairs of legs are all about equal in length, and beset with short bristles. The 3 posterior pairs are a trifle more robust than the 2 preceding ones, and have all the basal joint lamelliform-dilated and of a regular oval form.

The abdominal appendages would not appear to deviate essentially from those in the preceding genus.

Colour of the animal whitish, without distinct pigmentation.

Length of the specimen examined about 6^{mm}, a size far outreaching that attained by either of the 2 species as yet known.

Occurrence. — One specimen only of this form was taken on the Expedition (last cruise), in the open sea, between Finmark and Beeren Eiland (Stat. 286), at a depth of 447 fathoms. This Station belonged to the cold area.

Fam. **Leucothoidæ.**

Gen. 1. **Lilljeborgia**, Sp. Bate. 1862.

Catal. of Amphip. Brit. Mus.

58. Lilljeborgia æqvicornis, G. O. Sars, n. sp.

(Pl. XVI. Fig. 2. *a*).

Lilljeborgia æqvicornis, G. O. Sars, Prodromus descript. Crust. & Pycnog. etc., No. 103.

Artscharacteristik. Legemet sammentrykt, men ikke kjølet, med en enkelt meget liden dorsal Torn paa 2det Bagkropssegment. De 4 forreste Par Epimerer temmelig store. 1ste Par nedentil udvidet og bredt afrundet. 3die Bagkropssegments Sideplader bagtil udtrukne i et skarpt Hjørne. Ingen tydelige Øine. Følerne korte, omtrent indbyrdes af ens Længde; 1ste Par med Skaftets 1ste Led længere end de 2 øvrige tilsammen. Svøben af Skaftets Længde. Bisvøben halvt saa lang. De 2 forreste Fodpar kraftigt udviklede, med store sammentrykte Hænder; 1ste Par hos Hunnen af samme Bygning som 2det Par, hos Hannen derimod meget forskjelligt, med Haanden enormt udviklet. Griberanden dybt udrandet og bagtil begrændset af en trianguleert tilspidset Flig. De 3 bageste Fodpar kraftigere end de 2 foregaaende, tiltagende noget i Længde bagtil, med Hofteleddet pladeformigt, sidste Led koniskt tilspidset og Endekløen meget liden. Sidste Par Halefødder med begge Grene af ens Længde. Halevedhænget dybt kloftet, med Endeligene besatte med stærke Torner. Farven hvidgul. Længden 6^{mm}.

Findesteder. Stat. 31. 224. 273.

Bemærkninger. Denne Art er strax kjendelig fra de 2 øvrige bekjendte ved Mangelen af tydelige Øine, ved at kun en enkelt dorsal Torn er tilstede, ved Følernes ligelige Udvikling, endelig ved 1ste Fodpars eiendommelige Bygning hos Hannen.

Beskrivelse. Legemet er (se Pl. XVI. Fig. 2) temmelig stærkt sammentrykt fra Siderne, men med rund, ikke kjølet Ryg.

Hovedet er forholdsvis lidet, og dets Sidedele dækkes for en stor Del af 1ste Par Epimerer.

Af Segmenterne forlænger kun et, nemlig 2det Bagkropssegment, sig i en liden dorsal Torn; alle de øvrige er ubevæbnede.

De 4 forreste Par Epimerer er forholdsvis store, næsten dobbelt saa høie som Kroppen. 1ste Par er nedentil stærkt udvidet og bredt afrundet, dækkende en Del af Hovedets Sider tilligemed Mundlemene. 4de Par er kun lidet større end 1ste og viser oventil i den bagre Kant en svag Udrandning.

Fam. **Leucothoidæ.**

Gen. 1. **Lilljeborgia**, Sp. Bate. 1862.

Catal. of Amphip. Brit. Mus.

58. Lilljeborgia æqvicornis, G. O. Sars, n. sp.

(Pl. XVI. fig. 2. *a*).

Lilljeborgia æqvicornis, G. O. Sars, Prodromus descript. Crust. & Pycnog. etc., No. 103.

Specific Character. — Body compressed, but not keeled, with a single, exceedingly small dorsal spine on 2nd abdominal segment. The 4 anterior pairs of epimera rather large, 1st pair dilated below and broadly rounded. Lateral plates of 3rd abdominal segment drawn out posteriorly to a sharp corner. No distinct eyes. Antennæ short, about equal in length; 1st pair with 1st joint of peduncle longer than both the others taken together; flagellum uniform in length with peduncle, secondary flagellum half as long. The 2 anterior pairs of legs powerfully developed, with large, compressed hands; 1st pair, in female, as regards structure, similar to 2nd, in male widely different, the hand being enormously developed, with palmar margin deeply emarginate and posteriorly defined by a triangular-acute lappet. The 3 hindmost pairs of legs more powerfully developed than the 2 preceding ones, increasing somewhat in length posteriorly, with basal joint lamelliform, last joint conic-acute, and terminal claw exceedingly small. Last pair of caudal stylets with the 2 branches equal in length. Telson deeply cleft, with terminal lappets bearing strong spines. Colour whitish-yellow. Length 6^{mm}.

Locality. — Stats. 31, 224, 272.

Remarks. — This animal differs conspicuously from the 2 other known species by its want of distinctly developed eyes, by the presence of only one dorsal spine, by the uniform development of the antennæ, and finally by the peculiar structure of the 1st pair of legs in the male.

Description. — The body (see Pl. XVI. fig. 2) rather strongly compressed from the sides, but with round, not carinated back.

The head comparatively small, and its lateral parts to a great extent overlapped by the 1st pair of epimera.

Of the segments, only one, viz. the 2nd abdominal segment, is produced to a small dorsal spine; the others are all unarmed.

The 4 anterior pairs of epimera are comparatively large, almost twice as high as the body. The 1st pair are greatly expanded below, and broadly rounded, overlapping part of the sides of the head, along with the oral appendages. The 4th pair are but very little larger than the 1st, and exhibit above on the posterior margin a slight emargination.

3die Bagkropssegments Sideplader er temmelig brede og bagtil udtrukne i et noget opadkrummet tandformigt Fremspring.

Tydelige Øine findes ikke; men paa friskt indfangede Exemplarer bemærkes dog paa hver Side indenfor Hovedets Bedækning en uregelmæssig opak hvid Pigmentansamling, der synes at svare til Øienpigmentet.

Folerne er forholdsvis korte og indbyrdes omtrent af ens Storrelse. 1ste Par har Skaftets 1ste Led størst og længere end de 2 øvrige tilsammen. Svøben er omtrent af Skaftets Længde og sammensat af omkring 12 Led. Bisvøben er omtrent halvt saa lang og 5-leddet. 2det Par har Skaftets 2 sidste Led omtrent af ens Længde og Svøben saa lang som disse tilsammen samt bestaaende af 8 Led.

De 2 forreste Fodpar er særdeles store og hos Hunnen af ens Udseende og Storrelse, med Haanden stærkt udviklet og sammentrykt fra Siderne og Griberanden noget skraa samt nedentil kun begrændset af et stumpt Hjørne.

Hos Hannen er 1ste Par (se Fig. 2 *a*) eiendommeligt modificeret og betydelig større end 2det Par. Navnlig er Haanden enormt udviklet og af en meget paafaldende Form, idet Griberanden her er dybt udrandet, hvorved det nedre Parti af Haanden springer frem i Form af en tilspidset triangulær Flig, medens det øverste og forreste Parti bliver smalt udtrukket. Den særdeles store og kraftige Endeklo er stærkt leformigt krummet og kan med Spidsen bøies ind mod den ovenomtalte tilspidsede Flig.

De 2 følgende Fodpar er forholdsvis tynde og svagt byggede. Derimod er de 3 bageste Par temmelig robuste og tiltager noget i Længde bagtil. Deres Hofteled er pladeformigt udvidet og i den bagre Rand crenuleret; sidste Led er koniskt tilspidset og bærer en ganske liden Endeklo.

Af Halefødderne er det 2det Par meget lidet, neppe halvt saa langt som det 1ste. Sidste Par er baade længere og stærkere end 2det og har begge Grene lancetformige og af ens Længde.

Halevedhænget rækker adskilligt ud over sidste Par Halefødders Stamme og er i Midten dybt kloftet samt bevæbnet med flere stærke Torner.

Farven er ensformig gulhvid, uden nogen tydelig Pigmentering; Længden omtrent 6^{mm}.

Forekomst og Udbredning. Vi har taget denne meget distincte Art paa 3 vidt adskilte Localiteter. Af disse ligger den ene (Stat. 31) i Havet udenfor Storeggen, den anden (Stat. 224) Syd af Jan Mayen, den 3die i Osthavet mellem Beeren Eiland og Novaja Semlja: Dybden fra 95 til 417 Favne. Den forekommer imidlertid endnu paa en 4de Localitet, nemlig i Varangerfjorden, hvorfra

The lateral plates of the 3rd abdominal segment are rather broad, and posteriorly produced to a somewhat upward-curving, dentiform process.

Eyes in a strict sense, do not occur; but in fresh specimens may be observed on either side, within the covering of the head, an irregular patch of whitish-opaque pigment, that apparently corresponds to the ocular pigmentary substance.

The antennæ are comparatively short, and about equal in size. The 1st pair have the 1st joint of the peduncle largest, and longer than the 2 others taken together. The flagellum has about the same length as the peduncle, and consists of close upon 12 articulations. The secondary flagellum is nearabout half as long, and five-jointed. The 2nd pair have the 2 terminal joints well-nigh equal in length, and the flagellum — as long as both taken together — composed of 8 articulations.

The 2 anterior pairs of legs are exceedingly large, and in the female of uniform size and appearance, with the hand greatly expanded and compressed from the sides, and the palmar margin somewhat obtuse, as also defined below merely by an obtuse-angled corner.

In the male, the 1st pair (see fig. 2 *a*) is very peculiarly modified, and also much larger than the 2nd. Thus, in particular, the hand occurs prodigiously developed, and has a very striking form, the palmar margin being deeply emarginate, in such manner that the lower part of the hand juts forth as an acute, triangular lappet, while the upper and foremost part is narrowly drawn out. The very large and powerful terminal claw exhibits a prominent falciform curve, and admits of being bent in with the point towards the aforesaid acute lappet.

The 2 succeeding pairs of legs are comparatively slender, and feeble in structure. On the other hand, the 3 posterior pairs are rather robust, increasing somewhat in length backwards. The basal joint is lamelliform-dilated, and, along the posterior margin, crenellated; the last joint is conic-acute, and has a very small terminal claw.

Of the caudal stylets, the 2nd pair is very small, scarcely half as long as the 1st. The last pair are both longer and more powerful than the 2nd, and have the two branches lanceolate and equal in length.

The telson reaches considerably beyond the stem of the last pair of caudal stylets, and in the middle, is deeply cleft, as also armed with several strong spines.

Colour a uniform yellowish-white, without distinct pigmentation; length about 6^{mm}.

Occurrence and Distribution. — This very distinct species was taken on the Expedition in 3 widely distant localities. One of these (Stat. 30) lay off Storeggen, the 2nd (Stat. 224) south of Jan Mayen, the 3rd in the Barents' Sea, between Beeren Eiland and Novaja Zemlja: depth ranging from 95 to 417 fathoms. The animal in question has however been met with in a fourth locality,

jeg har flere Exempler, saavel Hanner som Hunner. Arten er utvivlsomt at betragte som en ægte arktisk Form, skjøndt egentlig kun 2 af de ovennævnte Stationer tilhører den kolde Area.

viz. the Varanger Fjord, whence I have several specimens, both male and female. The species must unquestionably be regarded as a true Arctic form, though but 2 of the Stations strictly belonged to the cold area.

Gen. 2. **Tritropis**, Boeck, 1870.

Crust. amphip. bor. & arct.

59. Tritropis appendiculata, G. O. Sars, n. sp.

Pl. XVI. Fig. 3, *a*).

Tritropis appendiculata, G. O. Sars, Crust. & Pycnogonida nova etc., No. 27.

Artscharacteristik. Forkroppen stærkt opsvulmet, med bred Ryg, Bagkroppen sammentrykt og oventil svagt kjølet, men uden dorsale Fortsatser. Hovedet meget lidet, med et kort Pandehorn og afrundede Sidehjørner. Epimererne smaa og jevnt tilrundede. De 3 forreste Bagkropssegmenters Sideplader store, med de nedre bagre Hjørner tilspidsede og den bagre Rand glat. Øinene smaa, ovale, hvide, beliggende langt nede paa Hovedets Sider. 1ste Par Følere usædvanlig robuste, med Skaftets 2 første Led store og noget opsvulmede, 3die meget lidet; Svøben noget længere end Skaftet, cylindrisk, bagtil forsynet med stærkt udviklede Calceoler. 2det Par Følere noget kortere og tyndere end 1ste Par, ligeledes med Calceoler i den forreste Rand af Svøben og Skaftets sidste Led. De 2 forreste Fodpar med store ovale Gribehænder; de 2 følgende Par særdeles spinkle; de 3 bagerste stærkt forlængede, omtrent ens udviklede, med Hofteleddet ovalt, Endekloen særdeles lang. Halefødderne bagtil successivt aftagende i Længde, med Grenene af ens Størrelse. Halevedhænget? Farven hvidagtig, gjennemsigtig. Længden $13^1/_2{}^{mm}$.

Findested. Stat. 205.

Bemærkninger. Den her omhandlede Form afviger i enkelte Henseender temmelig meget fra de øvrige til Slægten *Tritropis* henførte Arter og kan maaske vise sig at danne Typen for en egen Slægt. Da imidlertid kun et enkelt Exemplar foreligger, og jeg paa dette ikke har kunnet noiere undersøge Munddelene og Halevedhænget, tror jeg indtil videre at burde henføre den til ovennævnte Slægt, hvortil den ialfald nærmest synes at slutte sig. Artsbenævnelsen er hentet fra de usædvanlig stærkt udviklede Calceoler, hvormed begge Par Følere er forsynede.

Gen. 2. **Tritropis**, Boeck, 1870.

Crust. amphip. bor. & arct.

59. Tritropis appendiculata, G. O. Sars, n. sp.

Pl. XVI, fig. 3 *a*).

Tritropis appendiculata, G. O. Sars, Crust. & Pycnogonida nova etc., No. 27.

Specific Character. — Anterior division of body greatly swollen, with back broad, posterior division compressed, and, above, faintly keeled, but without dorsal projections. Head very small, with rostrum short and rounded lateral corners. Epimera small, and evenly rounded off. Lateral plates on the 3 anterior abdominal segments comparatively large, with lower, posterior corners acute and posterior margin smooth. Eyes small, oval, white, placed far down sides of head. First pair of antennæ unusually robust, with the 2 first joints of peduncle large and somewhat swollen, 3rd exceedingly small; flagellum a trifle longer than peduncle, cylindric, posteriorly furnished with prominently developed calceolæ. Second pair of antennæ somewhat shorter and more slender than 1st pair, having likewise calceolæ along anterior margin of flagellum and on last joint of peduncle. The 2 anterior pairs of legs with oval hands; the 2 succeeding pairs remarkably slender; the posterior 3 greatly produced, about uniform in development, with basal joint oval, terminal claw exceedingly long. Caudal stylets diminishing backwards successively in length, with branches of equal size. Telson —? Colour whitish, translucent. Length $13^1/_2{}^{mm}$.

Locality. — Stat. 205.

Remarks. — The form treated of here exhibits in some respects a rather striking deviation from the other species referred to the genus *Tritropis*, and may possibly be found to constitute a separate genus. Meanwhile, as one specimen only was secured, and therefore not having had opportunity of submitting the oral parts and caudal appendages to a thorough examination, I have seen fit, for the present, to refer the animal in question to the aforesaid genus, which at least it would appear to approximate closest. The specific designation is derived from the remarkably developed calceolæ, occurring on both pairs of antennæ.

Beskrivelse. Legemet er (se Pl. XVI. Fig. 3) temmelig undersætsigt, med stærkt opsvulmet Forkrop og bred Ryg. Bagkroppen bliver derimod hurtigt mere sammentrykt og viser oventil en tydeligt markeret, skjøndt lav Kjøl langs ad de 3 forreste Segmenter. Af nogen dorsale Fortsatser er imidlertid intet Spor, heller ikke bemærkes nogen lateral Kjøl, saaledes som Tilfældet er hos de tidligere bekjendte Arter af Slægten.

Integumenterne er meget tynde og gjennemsigtige, det hele Dyr derfor temmelig fragilt.

Hovedet er forholdsvis usædvanlig lidet, neppe længere end det 1ste frie Segment, og gaar fortil i Midten ud i et ganske kort, noget buet Pandehorn. Sidehjørnerne er noget udtrukne og smalt tilrundede.

De 4 forreste Par Epimerer er forholdsvis smaa, neppe høiere end selve Kroppen og alle omtrent af ens Størrelse, samt nedentil jevnt afrundede. 4de Par er bagtil noget udrandet til Optagelse af det følgende Par, der er af sædvanligt Udseende.

De 3 forreste Bagkropssegmenters Sideplader er store og brede samt ender alle med et skarpt Hjørne. Paa 3die Segment er deres bagre Rand ganske glat, uden Spor af Saugtakker, men er oventil ved et dybt, vinkelformigt Indsnit begrændset fra det tilstødende dorsale Parti.

Øinene er meget smaa, af oval Form og forsynede med lyst, hvidagtigt Pigment. Deres Beliggenhed er noget anomal, idet de er rykkede usædvanlig langt ned paa Hovedets Sider, nær ind mod Sidehjørnerne.

1ste Par Følere er af usædvanlig robust Bygning og omtrent saa lange som Forkroppen og 1ste Bagkropssegment tilsammen. Skaftets 2 første Led er meget store og muskulose samt noget fortykkede paa Midten. Derimod er 3die Led særdeles lidet og ved en meget bevægelig Articulation forbundet med 2det, hvorved det mere synes at høre til selve Svøben. Denne sidste er noget længere end Skaftet og næsten overalt af ens Tykkelse, cylindrisk samt udmærket ved de usædvanlig store, skaalformige Vedhæng (de saakaldte Calceoler), hvormed de enkelte Led bagtil er forsynede. Disse Vedhæng synes (se Fig. 3 *a*) at danne en 3-dobbelt Rad og mangler kun paa den allerydderste Del af Svøben.

2det Par Følere er noget kortere og tyndere end 1ste Par og er ligeledes forsynede med Calceoler, som dog her er mindre og fæstede langs den forreste Rand af Svøben og af Skaftets sidste Led.

Mundregionen er til Siderne fuldstændig dækket af 1ste Par Epimerer, saa at Munddelenes Bygning paa det eneste foreliggende Exemplar er utilgjængelig for en nærmere Undersøgelse.

De 2 forreste Fodpar er som hos Slægtens øvrige Arter kraftigt udviklede, med store ovale Gribehænder, 1ste Par er noget mindre end 2det og udmærker sig desuden

Description. The body (see Pl. XVI. fig. 3) is rather thickset, with the anterior division greatly swollen and the back broad. The posterior division, on the other hand, becomes rapidly compressed, exhibiting above, along the 3 anterior segments, a distinctly marked though low keel. Of any dorsal projections, however, not the slightest trace can be detected, nor is a lateral keel to be observed, similar to that in the previously known species of the genus.

The integuments are very thin and translucent; hence, the animal is altogether somewhat fragile.

The head is remarkably small, scarcely at all larger than the 1st free segment, and juts out in the middle, anteriorly, as an exceedingly short, somewhat curved rostrum. The lateral corners are slightly produced and narrowly rounded.

The 4 anterior pairs of epimera are comparatively small, scarcely higher than the body, and all about equal in size, as also evenly rounded off below. The 4th pair are somewhat emarginate posteriorly, to receive the succeeding pair, which have the usual appearance.

The lateral plates of the 3 anterior abdominal segments are large and broad, all terminating in a sharp corner. On the 3rd segment, their posterior margin occurs quite smooth, without a trace of denticles, but above is marked off, by a deep angular incision, from the adjoining dorsal part.

The eyes are very small, oval in form, and furnished with a light, whitish pigment. Their position is somewhat anomalous, occurring, as they do, unusually far down the sides of the head, in close proximity to the lateral corners.

The 1st pair of antennæ are remarkably robust in structure, and about as long as the anterior division and the 1st abdominal segment taken together. The first 2 joints of the peduncle are very large and muscular, as also somewhat incrassated in the middle. On the other hand, the 3rd joint is exceedingly small, and connected by a very movable articulation with the 2nd, thus giving it the appearance of belonging rather to the flagellum. The latter is somewhat longer than the peduncle, and throughout well-nigh uniform in thickness, as also characterized by the remarkably large calyx-shaped appendices (the so-called calceolæ), with which the several joints are furnished behind. These appendices (see fig. 3 *a*) would appear to constitute a triple series, and are nowhere absent save on the extreme outermost part of the flagellum.

The 2nd pair of antennæ are a trifle shorter and more slender than the 1st, and also furnished with calceolæ, which, however, are somewhat smaller, and attached to the anterior margin of the flagellum and the last joint of the peduncle.

The buccal region is entirely covered on both sides by the 1st pair of epimera: and hence the structure of the oral appendages in the only specimen before us could not be submitted to a close examination.

The 2 anterior pairs of legs exhibit, as in the other species of the genus, a most powerful development, with large, oval hands. The 1st pair are somewhat smaller than the

derved, at 4de Led nedad løber ud i en tungeformig børstebesat Lap, som mangler, eller ialfald er betydelig kortere paa 2det Par.

Af de egentlige Gangfødder er de 2 forreste Par overordentlig tynde, de 3 bagerste noget robustere, men endnu temmelig spinkle og omtrent indbyrdes af ens Længde. Deres Hofteled er regelmæssigt ovalt, sidste Led meget smalt, lineært, og Endekloen særdeles lang og tilspidset.

De 3 Par Halefødder er indbyrdes af ens Bygning og aftager successivt i Længde, saa at de tilbagestrakte omtrent naar til samme Tværlinie. Grenene er paa alle lancetformige og lige lange, uden tydelige Torner eller Børster.

Halevedhænget manglede paa det undersøgte Exemplar.

Farven er hvidagtig, gjennemsigtig, uden tydelig Pigmentering.

Længden af det undersøgte Exemplar er $13^1/_2{}^{mm}$.

Forekomst. Et enkelt Exemplar af denne anomale Form toges under Expeditionens 2det Togt i Havet NV af Finmarken (Stat. 205) paa det betydelige Dyb af 1287 Favne. Stationen tilhører den kolde Area.

2nd, and also distinguished by the 4th joint jutting out below as a linguiform, bristle-bearing lobule, absent, or at least much shorter, on the 2nd pair.

Of the true ambulatory legs, the 2 anterior pairs are remarkably feeble, the 3 posterior by comparison somewhat robust, though rather slender, and, as regards length, about equal. The basal joint has a regular oval form, the last articulation is very slender, linear, and the terminal claw exceedingly long and pointed.

The 3 pairs of caudal stylets are uniform in structure, and diminish successively in length; hence, they reach, when stretched backward, to about the same transverse line. The branches on all are lanceolate and uniform in length, without distinct spines or bristles.

The telson wanting in the specimen examined.

Colour whitish, translucent, without distinct pigmentation.

Length of the specimen examined $13^1/_2{}^{mm}$.

Occurrence. — One individual only was taken of this anomalous form, on the 2nd cruise of the Expedition, in the sea north-west of Finmark (Stat. 205), at the great depth of 1287 fathoms. The Station was located in the cold area.

Fam. **Ampeliscidæ.**

Gen. **Ampelisca,** Kröyer, 1842.

Naturh. Tidsskr. 1 R. IV.

60. **Ampelisca odontoplax,** G. O. Sars, n. sp.

(Pl. XVI, Fig. 4).

Ampelisca odontoplax, G. O. Sars, Crust. & Pycnogonida nova etc., No. 31.

Artscharacteristik. Legemet stærkt sammentrykt, men med rund Ryg. Hovedet oventil tydeligt kjølet, med Pandedelen noget fremspringende og stumpt tilrundet. Den nedre bagre Vinkel paa de 3 forreste Par Epimerer udtrukket til et tandformigt Fremspring. 3die Bagkropssegments Sideplader næsten retvinklede. Ingen Øine. 1ste Par Følere omtrent af Legemets halve Længde, med Skaftets 2det Led smalt og forlænget. Svøben dobbelt saa lang som Skaftet; 2det Par næsten af hele Legemets Længde, med Skaftets næstsidste Led størst. 3die ragende frem foran Hovedets Spids. Endekloen paa 3die og 4de Fodpar længere end de 2 sidste Led tilsammen. Sidste Fodpars Hofteled bagtil udvidet til en bred, i Enden afkuttet og næsten til Enden af 3die Led naaende Lob; sidste Led længere og smalere

Fam. **Ampeliscidæ.**

Gen. **Ampelisca,** Kröyer, 1842.

Naturh. Tidsskr. 1 R. IV.

60. **Ampelisca odontoplax,** G. O. Sars, n. sp.

(Pl. XVI, fig. 4).

Ampelisca odontoplax, G. O. Sars, Crust. & Pycnogonida nova etc., No. 31.

Specific Character. — Body greatly compressed, but with back round. Head, above, distinctly keeled, with frontal part somewhat projecting and obtusely rounded. Lower posterior angle on the 3 anterior pairs of epimera drawn out as a dentiform projection. Lateral plates of 3rd abdominal segment almost rectangular. No eyes. First pair of antennæ about half the length of body, with 2nd joint of peduncle slender and elongate, flagellum twice as long as peduncle; 2nd pair almost equal to whole body in length, with penultimate joint of peduncle largest; 3rd projecting beyond extremity of head. Terminal claw on 3rd and 4th pairs of legs longer than the 2 last joints taken together. Basal joint of last pair of legs expanded posteriorly to a broad lobe, truncate at extremity, and

end det foregaaende. Endekloen kort, lancetformig. Sidste Par Halefødder med stærkt forlængede lancetformige og tæt børstebesatte Grene. Halevedhænget smalt, klovet til Roden. Farven hvidagtig. Længden 23^{mm}.

Findested. Stat. 147.

Bemærkninger. Denne Art er let kjendelig fra de øvrige bekjendte ved den totale Mangel af Øine og ved det eiendommelige tandformige Fremspring paa de 3 forreste Par Epimerer, hvilket har givet Anledning til Artsbenævnelsen. Den hører til de større Arter af Slægten og ligner i sin ydre Habitus mest *A. spinipes* Boeck.

Beskrivelse. Legemet er (se Pl. XVI, Fig. 4) stærkt sammentrykt fra Siderne og temmelig høit, dog med rund Ryg og uden dorsale Fortsatser.

Hovedet er omtrent saa langt som de 3 forreste Segmenter tilsammen og viser ovenfra en tydelig skarp Kjøl, der lidt efter lidt taber sig mod den bagre Rand. Pandedelen er noget fremspringende og stumpt tilrundet, uden tydelige laterale Hjørner.

De 3 forreste Par Epimerer er smale og skraat fortilrettede samt udmærkede derved, at deres nedre bagre Hjørne er udtrukket i et lidet, men tydeligt tandformigt Fremspring. 4de Par er betydelig større end de foregaaende, nedentil smalt tilrundet uden tandformigt Fremspring, men med et skarpt Hjørne bagtil ovenfor Midten. Alle 4 er i den nedre Kant tæt besatte med ciliérede Børster. De 3 bagre Par er meget smaa og utydeligt tvelappede.

3die Bagkropssegments Sideplader ender bagtil i et næsten retvinklet Hjørne. Det følgende Segment er ovenfra stærkt hvælvet, dog uden nogen egentlig Pukkel.

Af Øine var intetsomhelst Spor at opdage hos de friskt indfangede Exemplarer.

Følerne er tynde og spinkle samt ulige udviklede. 1ste Par er ikke fuldt af Legemets halve Længde og har Skaftets 1ste Led temmelig kort, hvorimod 2det Led er stærkt forlænget og smalt. 3die Led er som sædvanlig meget lidet og fast forbundet med Svøben. Denne sidste er omtrent dobbelt saa lang som Skaftet og sammensat af omkring 20 Led. 2det Par er betydelig større end 1ste og næsten af hele Legemets Længde. Af Skaftets Led er kun de 3 yderste udvendigt synlige. Det 1ste af disse rager fortil ud over Hovedets Spids; næstsidste Led er stærkt forlænget og af smal cylindrisk Form; sidste Led noget kortere; Svøben forlænget, traadformig, med lange Børster i begge Kanter.

reaching almost to end of 3rd joint; last joint longer and more slender than preceding, terminal claw short, lanceolate. Last pair of caudal stylets with greatly produced, lanceolate, and densely bristle-beset branches. Telson narrow, cleft to base. Colour whitish. Length 24^{mm}.

Locality. — Stat. 147.

Remarks. — This animal may readily be distinguished from the other known forms by its total want of eyes and the peculiar dentiform projection on each of the 3 anterior pairs of epimera, a character that suggested the specific designation. It ranks among the larger species of the genus, presenting in its outer habitus closest resemblance to *A. spinipes* Boeck.

Description. — The body (see Pl. XVI, fig. 4) is greatly compressed from the sides, and rather high, though with a round back and no dorsal projections.

The head about equals in length the 3 anterior segments taken together, and exhibits above a distinct, sharply defined keel, that gradually disappears towards the posterior margin. The frontal portion projects to a slight extent, and is obtusely rounded, without distinct lateral corners.

The 3 anterior pairs of epimera are slender, and directed obliquely forward, as also distinguished by their lower posterior corner being drawn out to a small, but distinct, dentiform projection. The 4th pair are considerably larger than the preceding pairs, slenderly rounded off below without any dentiform projection, but having posteriorly, above the middle, a sharp corner. The 4 pairs are all, along the lower margin, densely beset with ciliated bristles. The 3 posterior pairs are very small and indistinctly bilobular.

The lateral plates of the 3rd abdominal segment terminate posteriorly in a well-nigh rectangular corner. The succeeding segment is very prominently arched above, though without, in a strict sense, exhibiting any hunched protuberance.

Of eyes, not a trace could be detected in the recently taken specimens.

The antennæ are thin and slender, and unequally developed. The 1st pair do not attain quite half the length of the body, and have the 1st joint of the peduncle rather short, whereas the 2nd joint occurs exceedingly elongate and slender; the 3rd is, as usual, very small, and firmly connected with the flagellum; the latter about equals the peduncle in length, and has close upon 20 articulations. The 2nd pair are considerably larger than the 1st, and attain well-nigh the whole length of the body. Of the joints of the peduncle, only the outermost 3 are visible externally. The first of these juts out beyond the point of the head; the penultimate joint is very considerably elongate and slender-cylindric in form, the last a trifle shorter; the flagellum — filiform — is produced, with long bristles on both margins.

Fodderne viser den for Slægten characteristiske Bygning. De 2 forreste Par er meget spinkle, med forholdsvis liden og smal Haand. De 2 følgende Par har 3die Led meget stort, næsten tendannet og i begge Kanter besat med lange Fjærborster. 4de Led er særdeles lidet. Endekloen lang og spids, længere end de 2 sidste Led tilsammen. 5te Fodpar, der som sædvanlig er rettet mere eller mindre stærkt bagtil, har Hofteleddet særdeles bredt og muskulost, næsten cirkelformigt. 6te Fodpar ligner dette i Form, men har Hofteleddet noget mindre. Sidste Par endelig er som hos Slægtens øvrige Arter kortere og robustere end de øvrige, med Hofteleddet særdeles stort og bagtil udvidet til en bred, i Enden næsten tvært afkuttet borstebesat Lap, der naar næsten til Enden af 3die Led; sidste Led paa dette Fodpar er ikke udvidet, men smalere end de foregaaende og bærer paa sin Spids en kort, lancetformig Endeklo.

Sidste Par Halefodder er betydelig større end de øvrige og forsynede med forlængede, lancetformige Grene, der i begge Kanter er tæt borstebesatte.

Halevedhænget rækker noget udover sidste Par Halefodders Stamme og er af temmelig smal Form samt klovet lige til Roden.

Dyrets Farve er hvidagtig, gjennemsigtig, med kun meget sparsomt, diffust rødligt Pigment.

Længden gaar op til 23^{mm}.

Forekomst. 2 Exemplarer af denne Art toges under Expeditionens 1ste Togt udenfor Helgelandskysten (Stat. 147) paa et Dyb af 142 Favne. Da Stationen tilhører den tempererede Area, er Arten neppe at betragte som en egentlig arktisk Form, omend Findestedet ligger noget nordenom Polarcirkelen.

The legs exhibit the structure characteristic of the genus. The 2 anterior pairs are very slender, with the hand comparatively small and narrow. The 2 succeeding pairs have the 3rd joint very large, and almost fusiform, with both margins bearing long plumous bristles. The 4th joint is exceedingly small, the terminal claw long and acute, longer than the last 2 joints taken together. The 5th pair of legs, which, as usual, are directed more or less straight backward, have the basal joint exceedingly broad and muscular, in form almost circular. The 6th pair resemble the latter in appearance, but have the basal joint somewhat smaller. Finally, the last pair, as in the other species of the genus, are the shortest and most robust, with the basal joint remarkably large, and, posteriorly, expanded to a broad, at the extremity almost vertically truncate, bristle-beset lobe, reaching well-nigh to the end of the 3rd joint; the last joint on this pair of legs is not expanded, but, on the contrary, more slender than the preceding, and bears on its point a short, lanceolate terminal claw.

The last pair of caudal stylets are considerably larger than the others, and furnished with produced, lanceolate branches, densely bristle-beset along both margins.

The telson extends a trifle beyond the stem of the last pair of caudal stylets, and in form is rather slender, as also cleft to the base.

The colour of the animal is whitish, translucent, faintly tinged however with a reddish, diffuse pigment.

The length reaches 23^{mm}.

Occurrence. — Of this species 2 individuals were taken, on the 1st cruise of the Expedition, off the coast of Helgeland (Stat. 147), at a depth of 142 fathoms. The Station having belonged to the temperate area, the form can scarcely be regarded as a true Arctic species, though the locality lies a little to the north of the Polar Circle.

61. **Ampelisca minuticornis**, G. O. Sars, n. sp.

(Pl. XVI. Fig. 5, *a*—*o*).

Ampelisca minuticornis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 32.

Artscharacteristik. Legemet uden dorsal Kjøl eller Fortsatser. Hovedet ovenfra hvælvet, fortil afsmalnende og i Enden skraat afskaaret. De 4 forreste Par Epimerer forholdsvis smaa, uden tandformigt Fremspring. 3die Bagkropssegments Sideplader bagtil udtrukne i en smalt tilrundet Lap. Ingen tydelige Øine. Følerne usædvanlig smaa; 1ste Par neppe længere end Hovedet og de 2 forreste Segmenter tilsammen, med Skaftets 2det Led meget smalt. Svøben kun lidet længere end Skaftet, 7-leddet; 2det Par over dobbelt saa langt som 1ste, men neppe opnaaende

61. **Ampelisca minuticornis**, G. O. Sars, n. sp.

(Pl. XVI. fig. 5, *a*—*o*).

Ampelisca minuticornis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 32.

Specific Character. — Body without dorsal carina or projections. Head arched above, tapering anteriorly, and obtusely truncate at extremity. The 4 anterior pairs of epimera comparatively small, without dentiform projections. Lateral plates of 3rd abdominal segment drawn out posteriorly to a slender, rounded lobe. No perceptible eyes. Antennæ remarkably small; 1st pair scarcely longer than head and the 2 anterior segments taken together, with 2nd joint of peduncle exceedingly slender, flagellum but little longer than peduncle, seven-jointed; 2nd pair more

Legemets halve Længde. Skaftets 3die Led ragende frem foran Hovedets Spids. Svøben kortere end Skaftet. 10-leddet. De 2 forreste Fodpar smaa og svage, af sædvanlig Bygning. De 2 følgende Par med de 2 sidste Led indbyrdes omtrent af ens Længde. Endekloen betydelig kortere end disse tilsammen. 6te Fodpars Hofteled med en afrundet Lap paa den indre Side ved Basis. Sidste Fodpar kort og undersætsigt, med Hofteleddets bagre Udvidning særdeles stor og naaende ud over 3die Led, sidste Led meget smalt, lineært. 2det Par Halefødder ualmindelig smaa; sidste Par med forholdsvis korte og næsten nøgne Grene. Halevedhænget temmelig lidet, i Enden afstumpet og klovet til foran Midten. Farven hvidagtig. Længden 8^{mm}.

Findesteder. Stat. 31. 124. 137. 200. 251. 362.

Bemærkninger. Denne lille Art kjendes fra de tidligere bekjendte ved de usædvanlig smaa Følere. Mangelen af Øine samt ved den betydelige Størrelse af den Udvidning, som sidste Fodpars Hofteled danner bagtil.

Beskrivelse. Legemet er (se Pl. XVI. Fig. 5) ligesom hos foregaaende Art noget sammentrykt, og uden nogen tydelig dorsal Kjøl, idet Ryggen overalt, ogsaa fortil, er jevnt hvælvet.

Hovedet er omtrent saa langt som de 3 forreste Segmenter tilsammen og afsmalnes noget mod Enden, som er lidt skraat afskaaret. Det er oventil jevnt hvælvet, uden Spor af nogen Kjøl.

De 4 forreste Par Epimerer er forholdsvis mindre end hos foregaaende Art og mangler det tandformige Fremspring. 1ste Par er noget udvidet nedad og her jevnt afrundet; de 2 følgende Par er derimod afstumpet i Enden; 4de Par danner bagtil et skarpt fremspringende Hjørne.

3die Bagkropssegments Sideplader er ikke vinklet bagtil som hos foregaaende Art, men uddraget i en smalt tilrundet, tungedannet Lap. Det følgende Segment er oventil jevnt hvælvet.

Øine synes ganske at mangle, ligesom hos foregaaende Art.

1ste Par Følere (Fig. 5 *a*) er meget smaa, neppe længere end Hovedet og de 2 forreste Segmenter tilsammen. Skaftets 1ste Led er kort, men temmelig tykt; 2det derimod pludselig betydelig smalere og længere; 3die som sædvanlig lidet og ikke skarpt adskilt fra Svøben. Denne er omtrent af Skaftets Længde og kun sammensat af 7 Led.

2det Par Følere (se Fig. 5) er mere end dobbelt saa lange som 1ste Par, uden dog at opnaa Legemets halve Længde. Af Skaftets Led er de 2 første, som hos foregaaende Art ganske skjulte; 3die rækker noget frem foran

than twice as long as 1st, yet attaining scarcely half the length of body, 3rd joint of peduncle projecting beyond point of head; flagellum shorter than peduncle, ten-jointed. The 2 anterior pairs of legs — exhibiting usual structure, small and feeble. The 2 succeeding pairs have the 2 last joints about equal in length, terminal claw considerably shorter than both of these taken together. Basal joint of 6th pair of legs with rounded lobe on inner side of base. Last pair of legs short and thickset, with posterior expansion of basal joint exceedingly large and reaching beyond 3rd joint; terminal joint very slender, linear. Second pair of caudal stylets remarkably small, last pair with comparatively short and almost naked branches. Telson rather small, obtuse at extremity, and cleft beyond the middle. Colour whitish. Length 8^{mm}.

Locality. — Stats. 31. 124. 137. 200. 251. 362.

Remarks. — This comparatively diminutive species may be recognized from all previously known forms by the unusually small antennæ, its want of eyes, as also the considerable size of the expansion distinguishing the basal joint of the last pair of legs posteriorly.

Description. — The body (see Pl. XVI, fig. 5), is somewhat compressed, as in the preceding species, and without any distinct dorsal keel, the back being everywhere — also the fore part — uniformly arcuate.

The head about equals in length the 3 anterior segments, tapering a little toward the extremity, which is somewhat obliquely truncate. Above, it is uniformly arcuate, without the slightest trace of a keel.

The 4 anterior pairs of epimera are comparatively smaller than in the preceding species, and have no dentiform projection. The 1st pair are somewhat expanded below, and evenly rounded off; the 2 succeeding pairs, on the other hand, are obtuse at the extremity; the 4th pair form posteriorly a sharp, projecting corner.

The lateral plates of the 3rd abdominal segment are not angular posteriorly, like those in the preceding species, but drawn out to a narrow, rounded, linguiform lobule. The succeeding segment is evenly arched above.

Eyes, it would appear, entirely absent, as in the preceding species.

The 1st pair of antennæ (fig. 5 *a*) are very small, scarcely at all longer than the head and the 2 anterior segments taken together. The 1st joint of the peduncle is short, but rather stout; the 2nd, on the other hand, becomes abruptly much longer and more slender; the 3rd, as usual, small, and not distinctly separated from the flagellum. The latter has about the length of the peduncle, and consists of 7 articulations.

The 2nd pair of antennæ (see fig. 5) are more than twice as long as the 1st, without however attaining half the length of the body. Of the joints of the peduncle, the 2 first, as in the preceding species, are entirely concealed;

Hovedets Spids; sidste er noget kortere end det foregaaende. Svoben er omtrent saa lang som Skaftets 2 sidste Led tilsammen og bestaar af circa 12 Led.

Kindbakkerne (Fig. 5 *b*) er kraftigt udviklede, med bred og tydeligt begrændset Tyggeknude. Palpen er derimod forholdsvis kort, tæt borstebesat, med sidste Led meget lidet.

Underlæben (Fig. 5 *c*) er temmelig stor, med Sidelapperne oxeformigt udvidede i Enden og ciliérede i den indre Kant.

1ste Par Kjæver (Fig. 5 *d*) har Tyggelappen stærkt indadrettet og paa Enden besat med lange, boiede Torner. Basalpladen er liden og forsynet med 2 korte Borster i Spidsen. Palpen, der er rettet lige fortil, har sidste Led stort, sammentrykt og noget udvidet mod Enden, der er bevæbnet med en Del fine Torner.

2det Par Kjæver (Fig. 5 *e*) har den ydre Lap noget større end den indre og besat med lange, boiede Borster.

Kjævefødderne (Fig. 5 *f*) er især udmærkede ved den stærke Udvikling af Tyggelappen, der er af halvelliptisk Form og rækker selv til Enden af Palpen; langs dens indre, lige Rand findes en Rad af stærke, kamformigt ordnede Tænder, og fra det øvre Hjørne udspringer nogle lange og tynde, boiede Borster.

De 2 forreste Fodpar (Fig. 5 *g*, *h*) er af den sædvanlige spinkle Bygning og tæt borstebesatte i begge Kanter. 2det Par er lidt længere end 1ste; forøvrigt er begge Par af ens Udseende, med Haanden meget liden og ufuldstændigt subcheliform.

De 2 følgende Fodpar (Fig. 5 *i*) har 3die Led stærkt forlænget og navnlig paa 4de Par tæt besat med lange Fjærborster i den indre Kant. De 2 sidste Led er indbyrdes næsten af ens Længde, Endekloen betydelig kortere end disse tilsammen.

5te og 6te Fodpar (se Fig. 5) er temmelig ens byggede, alene med den Forskjel, at Hofteleddet paa 6te Par har ved Basis paa den indre Side en afrundet secundær Lap (se Fig. 5 *k*).

Sidste Fodpar (Fig. 5 *l*) er som sædvanlig af kort og undersætsig Bygning, med Hofteleddet meget stort samt bagtil udvidet til en bred skraat nedadrettet Lap, der er afstumpet i Enden og her tæt borstebesat. Lappen rækker kjendeligt ud over 3die Led. Sidste Led er pludselig meget smalere end de øvrige, lineært og bærer en sylformigt tilspidset Endeklo.

Af Halefødderne er 2det Par (Fig. 5 *n*) ualmindelig lidet, neppe mere end halvt saa langt som 1ste Par (Fig. 5 *m*). Sidste Par (se Fig. 5, *o*) er omtrent af samme Længde som 2det, men noget tykkere, med kortere og plumpere Basaldel og simpelt lancetformige, næsten nøgne Grene.

the 3rd extends a little beyond the point of the head; the last is somewhat shorter than the penultimate. The flagellum attains about half the length of the last 2 joints of the peduncle taken together, and has close upon 12 articulations.

The mandibles (fig. 5 *b*) are powerfully developed, with a broad and distinctly marked molar protuberance. The palp, on the other hand, is comparatively short, densely bristle-beset, and has the terminal articulation very small.

The labium (fig. 5 *c*) is rather large, with the lateral lobules securiform-expanded at the extremity, and ciliate along the inner margin.

The 1st pair of maxillæ (fig. 5 *d*) have the masticatory lobe directed prominently inward, and beset at the extremity with long, curving spines. The basal plate is small, and furnished at the point with 2 short bristles. The palp, directed straight forward, has the terminal articulation large, compressed, and somewhat dilated toward the extremity, which is armed with a number of delicate spines.

The 2nd pair of maxillæ (fig. 5 *e*) have the outer lobe somewhat larger than the inner, and beset with long, curving bristles.

The maxillipeds (fig. 5 *f*) are specially characterized by the powerful development of the masticatory lobe, semielliptic in form, and reaching as far even as the end of the palp; along its straight inner margin occurs a row of strong teeth, exhibiting a pectinate arrangement, and from the upper corner spring a few long and slender, curving bristles.

The 2 anterior pairs (fig. 5 *g*, *h*) have the usual slender structure, with both margins densely bristle-beset. The 2nd pair are a trifle longer than the 1st; for the rest, they present a similar appearance, each having the hand very small and imperfectly subcheliform.

The 2 succeeding pairs (fig. 5 *i*) have the 3rd joint greatly produced, and — in particular as regards the 4th pair — densely beset with long plumous bristles on the inner margin. The 2 last joints are almost uniform in length; the terminal claw is considerably shorter than both taken together.

The 5th and 6th pairs of legs approximate closely in structure, the sole difference consisting in the basal joint of the 6th pair having at the origin on the inner side a rounded secondary lobe (see fig. 5 *k*).

The last pair of legs (fig. 5 *l*) are, as usual, short, and thickset in structure, with the basal joint very large, and, posteriorly, expanded to a broad lobe, pointing obliquely downward, and truncate at the extremity, where it is densely beset with bristles. This lobe projects appreciably beyond the 3rd joint. The last joint becomes abruptly much shorter than the others, is linear in form, and bears an awl-shaped terminal claw.

Of the caudal stylets, the 2nd pair (fig. 5 *n*) are remarkably small, scarcely more than half as long as the 1st pair (fig. 5 *m*). The last pair (fig. 5 *o*) are about equal in length to the 2nd, but somewhat stouter, with a shorter and more clumsy basal part, and simple lanceolate, well-nigh naked branches.

Halevedhænget (se Fig. 5 *o*) er forholdsvis lidet og afstumpet i Spidsen samt klovet til foran Midten.

Farven er hvidagtig, gjennemsigtig, uden tydelig Pigmentering.

Længden synes ikke at overskride 8^{mm}.

Forekomst og Udbredning. Vi har taget denne Art paa ikke mindre end 6 forskjellige Stationer, alle tilhørende den kolde Area. Af disse ligger de 5 (St. 31, 124, 137, 200, 251) i Havet udenfor Norges vestlige og nordlige Kyst, den 6te (St. 362) NV af Spitsbergen; Dybden fra 350 til 633 Favne.

Artens for Tiden bekjendte Udbredningsfelt er herefter det østlige Afhold mod Nordhavets store Dyb fra den 62de til den 80de Bredegrad.

The telson (fig. 5 *o*) is comparatively small, and obtuse at the point, as also cleft beyond the middle.

Colour whitish, translucent, without distinct pigmentation.

Length apparently not exceeding 8^{mm}.

Occurrence and Distribution. — This species was taken on the Expedition at as many as 6 different Stations, all belonging to the cold area. Five (Stats. 31, 124, 137, 200, 251) were located off the western and northern shores of Norway, the sixth (Stat. 362) lay north-west of Spitzbergen; depth ranging from 350 to 634 fathoms.

Hence, the tract throughout which the species is at present known to be distributed, comprises the eastern slope of the sea-bed, where it shelves toward the great depths of the Northern Ocean, — from the 62nd to the 80th parallel of latitude.

Gen. 2. **Byblis**, Boeck. 1870.

Crust. amphip. boreal. & arct.

62. Byblis abyssi, G. O. Sars, n. sp.

(Pl. XVI, Fig. 6).

Byblis abyssi, G. O. Sars, Crust. & Pycnogonida nova etc., No. 33.

Artscharacteristik. Legemet smalt og forlænget, med rund Ryg og forholdsvis smaa, afrundede Epimerer. Hovedet ikke meget forlænget, i Spidsen skraat afstumpet, med Sidehjørnerne tilrundede. 3die Bagkropssegments Sideplader bagtil jevnt afrundede; 4de og sidste Segment ovenfil med en sammentrykt Pukkel. Ingen Øine. 1ste Par Følere omtrent af Legemets halve Længde, med Skaftets 1ste Led kort og tykt, 2det Led betydelig længere og smalere, Svøben over dobbelt saa lang som Skaftet; 2det Par af hele Legemets Længde, med alle Skaftets Led synlige udvendigt, 3die Led ragende fortil langt ud over Hovedets Spids, de 2 sidste omtrent af ens Længde, Svøben længere end Skaftet og besat med lange tynde Børster. Fødderne af sædvanlig Bygning. Hofteleddet paa sidste Fodpar bagtil udvidet til en bred børstebesat Lap, der rager ud over 3die Led; sidste Led smalt, lineært. Halefødderne alle af ens Udseende, successivt aftagende i Længde bagtil. Halevedhænget lidet, i Enden afstumpet og forsynet med et kort Indsnit. Farven hvidagtig. Længden 12^{mm}.

Findesteder. Stat. 31. 124. 200.

Gen. 2. **Byblis**, Boeck. 1870.

Crust. amphip. boreal. & arct.

62. Byblis abyssi, G. O. Sars, n. sp.

(Pl. XVI, fig. 6).

Byblis abyssi, G. O. Sars, Crust. & Pycnogonida nova etc., No. 33.

Specific Character. — Body slender and elongate, with back arched and comparatively small, rounded epimera. Head not very elongate, at extremity obliquely truncate, with lateral corners rounded off. Lateral plates of 3rd abdominal segment evenly rounded posteriorly; 4th and last segments having above a compressed hump. No eyes. First pair of antennæ about equalling half the body in length, with 1st joint of peduncle short and thick, 2nd considerably longer and more slender, flagellum more than twice as long as peduncle; 2nd pair equalling whole length of body, with all the joints of peduncle visible externally, 3rd joint projecting anteriorly far beyond point of head, the 2 last about uniform in length. — flagellum larger than peduncle, and beset with long, delicate bristles. Legs exhibiting usual structure. Basal joint on last pair expanded posteriorly to a broad bristle-beset lobe, jutting out beyond 3rd joint; last joint slender, linear. Caudal stylets uniform in appearance, and diminishing in length posteriorly. Telson small, truncate at extremity, and with a short incision. Colour whitish. Length 12^{mm}.

Locality. — Stats. 31, 124, 200.

Bemærkninger. — Denne Form hører aabenbart til Slægten *Byblis*, saaledes som denne af Boeck er characteriseret. Den skiller sig fra den typiske Art, *B. Gaimardii* Kröyer strax ved den fuldstændige Mangel af Øine og ved det mindre stærkt forlængede Hoved. Mere ligner den, den af Metzger fra Pommerania's Expedition beskrevne *B. crassicornis*, fra hvilke Art den dog kjendes ved en noget forskjellig Bygning af Følerne og Halefødderne.

Beskrivelse. Legemet er (se Pl. XVI, Fig. 6) smalt og forlænget, kun lidet sammentrykt fra Siderne og med jevnt hvælvet Ryg.

Hovedet er neppe længere end de 2 forreste Segmenter tilsammen og i Enden skraat afskaaret, med Sidehjørnerne afrundede.

De 4 forreste Par Epimerer er forholdsvis smaa, kun lidet høiere end selve Kroppen og nedentil jevnt afrundede samt tæt børstebesatte; 4de Par er noget større end de øvrige og ender bagtil med et skarpt Hjørne.

3die Bagkropssegments Sideplader er bagtil stumpt afrundede, uden Vinkel. 4de Segment har oventil en pukkelformig, sammentrykt Forhøining, og en lignende, skjøndt mindre, bemærkes ogsaa paa sidste Segment.

Øine mangler ganske og aldeles, i Modsætning til hvad Tilfældet er hos den typiske Art, hvor de netop udmærker sig ved sin Tydelighed og sit mørke Pigment.

Fødderne er idethele temmelig lige samme hos den typiske Art. De 2 forreste Par er omtrent af samme Udseende som hos foregaaende Slægt. De 2 følgende Par har næstsidste Led neppe halvt saa langt som sidste, medens Endekloen omtrent er saa lang som begge tilsammen. 5te og 6te Fodpar er indbyrdes omtrent af ens Bygning, med bredt ovalt Hofteled og særdeles smalt sidste Led. Sidste Fodpar har Hofteleddets bagre Udvidning særdeles stor og selv naaende kjendeligt udover 3die Led, samt stumpt afrundet i Enden og her besat med tætte Fjærborster; sidste Led er smalt, lineært, og Endekloen ganske kort.

Halefødderne er alle af ens Bygning, med simpelt lancetformige og nogne Grene. De aftager successivt i Længde bagtil, saa at de tilbagestrakte omtrent naar til samme Tværlinie.

Halevedhænget er forholdsvis lidet, afstumpet i Enden og her forsynet med et kort Indsnit.

Dyrets Farve er hvidagtig, gjennemsigtig, uden tydelig Pigmentering.

Længden af det største undersøgte Exemplar er 12^{mm}.

Forekomst og Udbredning. Enkelte Exemplarer af denne Art er tagne paa 3 forskjellige Stationer, alle tilhørende den kolde Area. Af disse ligger den ene (St. 31)

Remarks. — This form belongs obviously to the genus *Byblis*, as the latter is characterized by Boeck. It differs from the typical species, *B. Gaimardii* Kröyer, by the total want of eyes and the much less elongate head. Greater resemblance apparently it presents to *B. crassicornis*, taken on the "Pommerania" Expedition, and described by Metzger, from which species, however, it may be recognized by the somewhat different structure of the antennæ and the caudal stylets.

Description. — The body (see Pl. XVI, fig. 6) is slender and elongate, little compressed from the sides, and with evenly arching back.

The head is scarcely at all longer than the 2 anterior segments taken together, and obliquely truncate at the extremity, with the lateral corners rounded off.

The 4 anterior pairs of epimera are comparatively small, but little higher than the body, and, below, uniformly rounded, as also densely bristle-beset; the 4th pair are somewhat larger than the others, terminating posteriorly in a sharp corner.

The lateral plates of the 3rd abdominal segment are hindwards obtusely rounded, without any angle. The 4th segment has above, a humped, compressed prominence, and a similar though smaller one occurs on the last segment.

Eyes totally wanting, contrary to what is the case in the typical species, which has them of a specially distinct development and a dark pigment.

The legs are upon the whole rather similar to those in the type-species. The 2 anterior pairs have about the same appearance as those in the preceding genus. The 2 succeeding pairs occur with the penultimate joint scarcely half as long as the last, while the terminal claw attains about the same length as both taken together. The 5th and 6th pairs of legs exhibit a well-nigh uniform structure, with the basal joint broadly oval and the last joint exceedingly slender. The last pair of legs have the posterior dilatation of the basal joint remarkably large, and reaching appreciably beyond the 3rd joint, as also obtusely rounded at the extremity, and there densely beset with plumous bristles; the last joint is slender, linear, and the terminal claw quite short.

The caudal stylets are all uniform in structure, with simple lanceolate and naked branches. They diminish successively in length backwards, and reach therefore, when stretched back, to about the same transverse line.

The telson is comparatively small, obtuse at the extremity, and exhibits there a short incision.

Colour of animal whitish, translucent, without distinct pigmentation.

Length of the largest specimen examined 12^{mm}.

Occurrence and Distribution. — A few individuals of this species were taken on the Expedition, at 3 different Stations, all belonging to the cold area. One of these

i Havet udenfor Storeggen; den 2den (St. 124) Vest af Helgelandskysten, og den 3die (St. 200) NV af Finmarken; Dybden 350 til 620.

Artens for Tiden bekjendte Udbredningsfelt er herefter det østlige Afheld mod Nordhavets store Dyb fra den 63de til omtrent den 72de Bredegrad. Den er utvivlsomt at betragte som en arktisk Form.

(Stat. 31) lay off the Storeggen Bank, the 2nd (Stat. 124) west of the coast of Helgeland, and the 3rd (Stat. 200) north-west of Finmark; depth ranging from 350 to 620 fathoms.

Thus, the tract in which the species is at present known to occur, comprises the eastern slope of the sea-bed, where it shelves toward the great depths of the Northern Ocean, from the 63rd to nearabout the 72nd parallel of latitude. The animal should unquestionably be regarded as a true Arctic form.

Fam. **Microdeutopidæ.**

Gen. **Autonoë**, Bruzel. 1859.

Skandin. Amphip. Gammarina.

63. **Autonoë megacheir**, G. O. Sars, n. sp.

(Pl. XVI, Fig. 7).

Autonoë megacheir, G. O. Sars, Crust. & Pycnogoina nova etc., No. 35.

Artscharacteristik. Legemet smalt, med smaa Epimerer. Hovedet ikke meget opsvulmet, fortil afkuttet, med smalt uddragne Sidehjørner. 1ste Par Epimerer dannende en horizontal fortilrettet tilspidset Flig. 3die Bagkropssegments Sideplader bagtil afrundede. Ingen Øine. 1ste Par Foleres Basalled længere end Hovedet; 2det Par omtrent halvt saa langt som Legemet med kort 8-leddet Svøbe. 1ste Fodpar hos Hannen særdeles stort og robust, med den ydre Del stærkt fortykket, men kun sparsomt børstebesat; Haanden oval, noget længere end det foregaaende Led og ved Enden af Griberanden forsynet med en smal og dyb Indbugtning, bagtil begrændset af et tilspidset tandformigt Fremspring; 2det Par meget svagere bygget, med korte Børster og smal ubevæbnet Haand. 3die og 4de Fodpar med sidste Led smalt og forlænget, Endekloen kort. De 3 bagerste Par tiltagende i Længde bagtil, med kun svagt udvidet Hofteled. Sidste Par Halefødder meget smaa, med Grenene af ens Længde. Halevedhænget kort og tykt, rørformigt. Farven gulagtig med mørke Smaapletter. Længden 6^{mm}.

Findested. Stat. 195.

Bemærkninger. Denne Art er let kjendelig fra de 2 øvrige norske Arter ved den fuldstændige Mangel af Øine, ved det stærkt forlængede Basalled paa 1ste Par Folere og ved 1ste og tildels ogsaa 3die og 4de Fodpars Bygning og mindre rigelige Børstebesætning.

Fam. **Microdeutopidæ.**

Gen. **Autonoë**, Bruzel. 1859.

Skandin. Amphip. Gammarina.

63. **Autonoë megacheir**, G. O. Sars, n. sp.

(Pl. XVI, fig. 7).

Autonoë megacheir, G. O. Sars, Crust. & Pycnogonida nova etc., No. 35.

Specific Character. — Body slender, with small epimera. Head not much swollen, truncate anteriorly, lateral corners slenderly produced. First pair of epimera forming a horizontal, anteriorly directed, acute lappet. Lateral plates on 3rd abdominal segment rounded off posteriorly. No eyes. Basal joint of 1st pair of antennæ longer than head; 2nd pair about half as long as body, with short, eight-jointed flagellum. First pair of legs in male exceedingly large and robust, having outer part greatly incrassated, though very sparingly beset with bristles; hand oval, somewhat longer than preceding joint, and exhibiting at extremity of palmar margin a narrow and deep sinus, bounded posteriorly by an acute, dentiform prolation; 2nd pair much feebler in structure, with short bristles and a narrow, unarmed hand. Third and 4th pairs of legs with last joint slender and elongate, terminal claw short. The 3 hindmost pairs increasing in length posteriorly, with basal joint but slightly dilated. Last pair of caudal stylets very small, with branches uniform in length. Telson short and thick, tubular. Colour yellowish, relieved with dark specks. Length 6^{mm}.

Locality. — Stat. 195.

Remarks. — This form may easily be distinguished from the other 2 Norwegian species by its total want of eyes, the greatly elongated basal joint of the 1st pair of antennæ, and the structure characterizing the 1st, and in part too, the 3rd and 4th pairs of legs, as also by their far less dense armature of bristles.

Beskrivelse. Legemet er (se Pl. XVI, Fig. 7) smalt og forlænget, næsten cylindriskt, med rund Ryg og meget smaa Epimerer.

Hovedet er noget mindre opsvulmet end hos de ovrige bekjendte Arter og fortil afkuttet, med Sidehjørnerne smalt udtrukne.

1ste Par Epimerer forlænger sig fortil til en skarpt tilspidset horizontal Flig. De 3 følgende Par er derimod nedentil jevnt tilrundede og aftager hurtigt i Størrelse bagtil. Ingen af dem opnaar selve Kroppens Høide.

3die Bagkropssegments Sideplader danner ikke bagtil nogen Vinkel, men er her smalt tilrundede.

Af Øine er intetsomhelst Spor at opdage.

1ste Par Folere var paa det eneste foreliggende Exemplar defecte, idet kun Basalleddet er i Behold. Dette er forholdsvis større end hos de ovrige Arter og overgaar selv kjendeligt Hovedet i Længde.

2det Par Folere er omtrent halvt saa lange som Legemet og har Skaftets 2 sidste Led smalt cylindriske og næsten af ens Længde. Svøben er forholdsvis kort, 8-leddet.

Mundregionen er nedentil stærkt fremspringende og forstorstedelen ubedækket til Siderne.

1ste Fodpar er særdeles kraftigt udviklet, med den ydre Del (Haanden og Carpus) stærkt fortrykket. Basalleddet er derimod forholdsvis smalere end hos de ovrige Arter og ligesom den øvrige Del af Foden kun sparsomt børstebesat. Haanden er temmelig opblæst, af oval Form, noget længere end det foregaaende Led og lidt afsmalnende mod Enden, der er næsten tvært afkuttet, med forholdsvis kort Griberand; ved Enden af denne sidste findes en dyb og smal Bugt eller Indsnit, der bagtil er begrændset af et tilspidset tandformigt Fremspring.

2det Fodpar er betydelig svagere bygget og har Haanden meget smal og neppe længere end det foregaaende Led. De paa dette Fodpar fæstede Borster er ganske korte.

3die og 4de Fodpar har sidste Led stærkt forlænget og smalt, hvorimod Endekloen er meget liden.

De 3 bagerste Fodpar tiltager hurtigt i Længde bagtil og har Hofteleddet kun lidet udvidet.

Halefodderne aftager i Størrelse bagtil. Paa de 2 forreste Par forlænger Stammen sig i Enden foran Grenene til en stærk dolkformig Fortsats; paa sidste Par er Stammen derimod simpel. Grenene er paa alle simpelt lancetformige, uden tydelige Torner eller Borster.

Halevedhænget er ganske kort, men tykt, rørformigt og uden Indsnit.

Dyrets Farve er gulagtig, med mørkere Smaapletter.

Længden af det undersøgte Exemplar er 6^{mm}.

Description. The body (see Pl. XVI, fig. 7) is slender and elongate, well-nigh cylindric, with the back round and very small epimera.

The head occurs a trifle less swollen than in the other known species, as also truncate anteriorly, with the lateral corners slenderly produced.

The 1st pair of epimera are prolonged anteriorly to an acute, horizontal lappet. The 3 succeeding pairs, on the other hand, are evenly rounded off below, and diminish rapidly in size posteriorly. Not one of them attains the height of the body.

The lateral plates of the 3rd abdominal segment do not form posteriorly an angle, but are slenderly rounded off.

Of eyes, not the slighest trace can be detected.

The 1st pair of antennæ in the only specimen taken, were defective, the basal joint only remaining. This was comparatively larger than the corresponding articulation in the other species, and exceeded even appreciably the head in length.

The 2nd pair of antennæ are about half as long as the body, and have the last 2 joints of the peduncle slender-cylindric, and well-nigh equal in length. The flagellum is comparatively short, and eight-jointed.

The buccal region juts out prominently below, in greater part uncovered at the sides.

The 1st pair of legs are most powerfully developed, with the outer part (hand and carpus) greatly inspissated. The basal joint, on the other hand, is comparatively more slender than in the other species, and, like the remaining portion of the leg, but sparingly furnished with bristles. The hand appears rather tumid, has an oval form, is a trifle longer than the preceding joint, and tapers a little toward the extremity, which is almost vertically truncate, with comparatively a short palmar margin; at the end of the latter, occurs a deep and narrow sinus, posteriorly defined by an acute, dentiform projection.

The 2nd pair of legs are much feebler in structure, and have the hand very narrow, as also scarcely longer than the preceding joint. The bristles attached to this pair of legs are exceedingly short.

The 3rd and 4th pair of legs have the last joint greatly elongated, and slender, whereas the terminal claw is very small.

The 3 posterior pairs of legs increase rapidly in length hindwards, and have the basal joint but little expanded.

The caudal stylets diminish in size posteriorly. On the 2 foremost pairs, the stem is prolonged at the extremity, anterior to the branches, as a strong, mucroniform process; on the last pair, however, it is simple. The branches on all are simple, without distinct spines or bristles.

The telson is quite short, but thick, tubular, and without any incision.

Colour of animal yellowish, relieved with darkish specks.

Length of the specimen examined 6^{mm}.

Forekomst. Et enkelt Exemplar, en fuldt udviklet Han, af denne Art toges under Expeditionens 2det Togt i Havet NV. af Finmarken (Stat. 195) paa et Dyb af 107 Favne. Stationen tilhører den tempererede Area, og Arten kan derfor, trods Findestedets nordlige Beliggenhed, heller ikke med Sikkerhed erklæres for en arktisk Form.

Occurrence. — Only one example of this species, a fully developed male, was taken on the Expedition (2nd cruise), north-west of Finmark (Stat. 195), at a depth of 107 fathoms. The Station was located in the temperate area; and the species cannot therefore, notwithstanding the northern locality in which it occurred, with certainty be regarded as an Arctic form.

Fam. Podoceridæ.

Gen. 1. **Podocerus**, Leach, 1815.

Linn. Transact. XI.

64. Podocerus assimilis, G. O. Sars, n. sp.

(Pl. XVII, Fig. 1, *a*—*c*).

Podocerus assimilis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 36.

Artscharacteristik. — Legemet noget forlænget, med de forreste Epimerer omtrent af Kroppens Høide. Hovedets Sidehjørner tilspidsede. 3die Bagkropssegments Sideplader bagtil stumpt tilrundede. Øinene smaa, ovale, med mørkt Pigment. Følerne kraftigt udviklede, over halvt saa lange som Legemet, og bagtil forsynede med lange, kamformigt ordnede Børster: 1ste Par med Skaftets 1ste Led af Hovedets Længde, de 2 følgende indbyrdes lige lange, Bisvøben meget liden, neppe mere end $^1/_3$ saa lang som Svøbens 1ste Led, samt 1-leddet; 2det Par med Svøben noget længere end Skaftets sidste Led, 8-leddet. 2det Fodpar hos Hannen meget stort, med stærkt opsvulmet, aflang oval Haand uden tydeligt begrændset Griberand, men bagtil tæt besat med tildels cilierede Børster. De øvrige Fødder af sædvanlig Bygning. Sidste Par Halefødder med forlænget cylindrisk Stamme. Farven hvidagtig, med mørkere Skatteringer. Længden 8^{mm}.

Findesteder. Stat. 137, 280.

Bemærkninger. Denne Art staar nærmest *P. megacheir* Boeck, men skiller sig ved en noget robustere Kropsform, større Epimerer, den rudimentære Beskaffenhed af 1ste Par Følleres Bisvøbe, samt derved, at 3die Bagkropssegments Sideplader ikke er vinklede, men stumpt afrundede bagtil.

Beskrivelse. Legemet er (se Pl. XVII, Fig. 1) noget langstrakt, skjøndt idethele adskilligt robustere end hos dens nærmeste Forvante *P. megacheir* Boeck.

Fam. Podoceridæ.

Gen. 1. **Podocerus**, Leach, 1815.

Linn. Transact. XI.

64. Podocerus assimilis, G. O. Sars, n. sp.

(Pl. XVII, fig. 1, *a*—*c*).

Podocerus assimilis, G. O. Sars, Crust. & Pycnogonida nova etc., No. 36.

Specific Character. — Body somewhat elongate, with anterior epimera about equal in height to body. Lateral corners of head pointed. Lateral plates of 3rd abdominal segment obtusely rounded posteriorly. Eyes small, oval, with a dark pigment. Antennæ powerfully developed, more than half the length of body, and posteriorly furnished with long bristles in pectinate arrangement; 1st pair with 1st joint of peduncle as long as head, the 2 succeeding joints of equal length, secondary flagellum very small, scarcely more than one-third as long as 1st joint of flagellum, and uni-articulate; 2nd pair with flagellum somewhat longer than last joint of peduncle, eight-jointed. Second pair of legs in male very large, with greatly swollen oblongo-ovate hand, not exhibiting a distinctly defined palmar margin, posteriorly however furnished with a dense armature of in part ciliate bristles. Remaining legs of usual structure. Last pair of caudal stylets with elongate, cylindric stem. Colour whitish, with dark shadings. Length 8^{mm}.

Locality. — Stats. 137, 280.

Remarks. — This species approximates closest *P. megacheir* Boeck, but differs from that animal in having a somewhat robuster form of body, larger epimera, the rudimentary character distinguishing the secondary flagellum of its 1st pair of antennæ, as also in the lateral plates of the 3rd abdominal segment not being angular, but obtusely rounded posteriorly.

Description. — The body (see Pl. XVII, fig. 1) is somewhat elongate, though on the whole a trifle more robust than in its nearest related congener, *P. megacheir* Boeck.

Hovedet er omtrent saa langt som de 2 forreste Segmenter tilsammen og stærkt afsmalnende fortil, med en bred Udrandning til hver Side over Basis af 2det Par Folere. De mellem begge Par Folere fremskydende Sidelapper er i Enden tilspidsede.

De 4 forreste Par Epimerer er omtrent af Kroppens Høide og tiltager noget i Storrelse bagtil. Deres nedre Rand er jevnt tilrundet. 5te Par er som hos Slægtens ovrige Arter betydelig storre end de 2 bagerste og har den forreste Lap mest udviklet.

3die Bagkropssegments Sideplader er ikke som hos *P. megacheir* bagtil vinklede, men stumpt tilrundede.

Øinene er forholdsvis smaa, men tydeligt udviklede, af oval Form og beliggende nær Hovedets forreste Sidehjorner. Deres Pigment er af mork brunlig Farve.

Folerne er kraftigt udviklede og indbyrdes omtrent af samme Storrelse, overgaaende kjendeligt Legemets halve Længde. Den bagre Rand er paa begge Par forsynet med lange og tynde bagudkrummede Borster. 1ste Par har Skaftets 1ste Led saa langt som Hovedet, de 2 følgende indbyrdes af ens Længde; Svoben er omtrent halvt saa lang som Skaftet og sammensat af 9 Led; Bisvoben (se Fig. 1 *a*) er særdeles liden og rudimentær, 1-leddet og neppe mere end $^1/_3$ saa lang som Svobens 1ste Led. 2det Par har Skaftets 2 ydre Led stærkt forlængede og Svoben omtrent saa lang som Skaftets sidste Led, meget tynd og 8-leddet.

1ste Fodpar (Fig. 1 *a*) har Haanden af oval Form og omtrent saa lang som de 3 foregaaende Led tilsammen, med Griberanden kun ufuldstændigt begrændset nedad og ubevæbnet.

2det Fodpar er navnlig hos Hannen (Fig. 1 *b*) særdeles kraftigt udviklet, med Haanden stor og opsvulmet, ligesaa lang som alle de ovrige Led tilsammen og af aflang oval Form, uden nogen tydeligt begrændset Griberand, men bagtil besat med flere Rækker af tildels ciliérede Borster. Endekloen er særdeles stærk, leformig og kan slaaes ind mod den indre Side af Haanden.

3die og 4de Fodpar er af den sædvanlige Bygning.

De 3 bagerste Fodpar tiltager hurtigt i Længde bagtil og er temmelig robuste, med pladeformigt udvidet Hofteled og kraftig Endeklo.

Halefødderne viser den for Slægten characteristiske Bygning. Sidste Par har Stammen temmelig stærkt forlænget, hvorimod Grenene er yderst smaa og rudimentære.

Halevedhænget er kort, men tykt, rørformigt, uden Indsnit.

Dyrets Farve er hvidagtig, med mere eller mindre tydelige brune Pletter og Shatteringer.

Længden af de største Individer er 8^{mm}.

The head has about the length of the 2 foremost segments taken together, and tapers rapidly forward, with a broad emargination on either side, over the base of the 2nd pair of antennæ. The lateral lobules, projecting between both pairs of antennæ, are pointed at the extremity.

The 4 anterior pairs of epimera attain about the height of the body, diminishing somewhat in size posteriorly. Their lower margin is evenly rounded. The 5th pair, as in the other species of the genus, is considerably larger than the 2 posterior ones, with the foremost lobe exhibiting greatest development.

The lateral plates of the 3rd abdominal segment are not, as in *P. megacheir*, angular posteriorly, but obtusely rounded.

The eyes are comparatively small, but well developed, oval in form, and placed near the antero-lateral corners of the head. Their pigment is a dark-brown.

The antennæ are powerfully developed, and well-nigh equal in size, appreciably exceeding half the body in length. The posterior margin in both pairs is furnished with long and slender, backward-curving bristles. The 1st pair have the 1st joint of the peduncle as long as the head, the 2 succeeding ones are equal in length; the flagellum is about half as long as the peduncle, and composed of 9 articulations; the secondary flagellum (see fig. 1 *a*) occurs exceedingly small and rudimentary, uni-articulate and scarcely more than one-third as long as the 1st joint of the flagellum. The 2nd pair have the 2 outer joints of the peduncle greatly elongated, and the flagellum equal in length to the last joint of the peduncle, very slender, and composed of 8 articulations.

The 1st pair of legs (fig. 1 *a*) have the hand oval in form, and about as long as the 3 preceding joints taken together, with the palmar margin but incompletely defined from below, and wholly unarmed.

The 2nd pair of legs, more especially in the male (fig. 1 *b*), exhibit a most powerful development, with the hand very large and tumid, equalling in length all the other joints taken together, and oblongo-ovate in form, without any distinctly marked palmar margin, but having posteriorly several rows of in part ciliate bristles. The terminal claw is strong, falciform, and admits of being bent in toward the inner surface of the hand.

The 3rd and 4th pair of legs exhibit the usual structure.

The 3 hindmost pairs of legs increase rapidly in length posteriorly, and are somewhat robust, with the basal joint lamelliform-dilated, and have a powerful terminal claw.

The caudal stylets exhibit the structure characteristic of the genus. The stem of the last pair is rather elongate, whereas the branches are remarkably small, and rudimentary.

The telson is short but thick, tubular, without any incision.

Colour of animal whitish, with more or less distinct brown spots and shadings.

Length of the largest individuals reaching 8^{mm}.

Forekomst. Af nærværende Art er Exemplarer tagne paa 2 temmelig vidt adskilte Stationer, hvoraf den ene (St. 137) er beliggende i Havet Vest af Helgelandskysten, Dybden 452 Favne, den anden (St. 280) strax sondenom Beeren Eiland. Dybden 35 Favne. Da den første af disse Stationer tilhører den kolde Areas Dyb og den anden ligger høit mod Nord, er Arten vistnok at betragte som en ægte arktisk Form.

Occurrence. — Of the present species, individuals were taken at 2 comparatively distant Stations, one of which (Stat. 137) lay in the sea west of the coast of Helgeland, depth 452 fathoms, — the other (Stat. 280) immediately south of Beeren Eiland, depth 35 fathoms. The first of these Stations having belonged to the deeps of the cold area, and the other been located in a high northern latitude, the animal must unquestionably be regarded as a true Arctic form.

65. Podocerus brevicornis, G. O. Sars, n. sp.

(Pl. XVII, Fig. 2, *a*—*c*).

Podocerus brevicornis, G. O. Sars, Crust. & Pycnog. nova etc., No. 37.

Artscharacteristik. Legemet temmelig undersætsigt, med forholdsvis vel udviklede Epimerer. Hovedets Sidehjørner tilspidsede. 3die Bagkropssegments Sideplader bagtil næsten retvinklede. Ingen Øine. Folerne korte og robuste, ikke opnaaende Legemets halve Længde og kun sparsomt besatte med korte Børsteknipper; 1ste Par med Skaftets 1ste Led kortere end Hovedet, 2det Led længere end sidste, Bisvøben 1-leddet, næsten saa lang som Svøbens 1ste Led; 2det Par med Svøben kortere end Skaftets sidste Led, 6-leddet. De 2 forreste Fodpar undersætsigt byggede, med bred sammentrykt Haand. Griberanden tydeligt begrændset, paa 1ste Par bevæbnet med 3 Torner, paa 2det Par endende med et tydeligt stumpt Fremspring; 2det Par navnlig hos Hannen betydelig stærkere end 1ste. De øvrige Fødder af sædvanlig Bygning. Sidste Par Halefødder forholdsvis korte. Farven hvidagtig. Længden $6^1/_2{}^{mm}$.

Findesteder. Stat. 31, 283, 338, 362, 363.

Bemærkninger. Denne Art ligner noget *P. latipes* Kröyer, med hvilken jeg tidligere ogsaa har forvexlet den, men skiller sig ved nærmere Undersøgelse bestemt ved Mangelen af Øine, ved de tilspidsede Sidehjørner paa Hovedet, ved kortere og mindre rigeligt børstebesatte Folere samt ved en noget forskjellig Form af de 2 forreste Fodpar.

Beskrivelse. Legemet er (se Pl. XVII, Fig. 2) af betydelig kortere og mere undersætsig Form end hos foregaaende Art og ligner i denne Henseende mest *P. latipes* Kröyer.

Hovedet har en lignende Form som hos foregaaende Art, og Sidehjørnerne er ogsaa her, uligt hvad Tilfældet er hos *P. latipes*, tilspidsede, skjøndt noget mindre udtrukne end hos *P. assimilis*.

65. Podocerus brevicornis, G. O. Sars, n. sp.

(Pl. XVII, 2. *a*—*c*).

Podocerus brevicornis, G. O. Sars, Crust. Pycnog. nova etc., No. 37.

Specific Character. — Body rather thickset, with comparatively well-developed epimera. Lateral corners of head pointed. Lateral plates of 3rd abdominal segment well-nigh rectangular posteriorly. No eyes. Antennæ short and robust, not attaining half the length of body, and furnished with a few short fascicles of bristles. First pair with 1st joint of peduncle shorter than head, 2nd joint longer than last, secondary flagellum uni-articulate, almost as long as 1st joint of flagellum; 2nd pair with flagellum shorter than last joint of peduncle, six-jointed. The 2 foremost pairs of legs thickset in structure, with broad, compressed hand, palmar margin distinctly defined, on 1st pair armed with 3 spines, on 2nd terminating in a distinct, obtuse projection: 2nd pair — more especially in male — much stronger than 1st. Remaining legs exhibiting usual structure. Last pair of caudal stylets comparatively short. Colour whitish. Length $6^1/_2{}^{mm}$.

Locality. — Stats. 31, 283, 338, 362, 363.

Remarks. — This species somewhat resembles *P. latipes* Kröyer, with which indeed I had formerly confounded it, but differs distinctly, on closer examination, — in its want of eyes, the pointed lateral corners of the head, the shorter and less abundantly bristle-beset antennæ, as also in a somewhat deviating form distinguishing the 2 foremost pairs of legs.

Description. — The body (see Pl. XVII, fig. 2) is considerably shorter and more thickset than with that of the preceding species, and, so far, presents greatest resemblance to *P. latipes* Kr.

The head has a similar form to that of the preceding species; and the lateral corners, unlike what occurs in *P. latipes*, are acutely pointed, though somewhat less produced than in *P. assimilis*.

De 4 forreste Par Epimerer er vel udviklede, kjendeligt hoiere end selve Kroppen, og tiltager noget i Storrelse bagtil. 3die Bagkropssegments Sideplader ender bagtil med et tydeligt, næsten retvinklet Hjorne.

Af Øine er paa de opbevarede Exemplarer intetsomhelst Spor at se.

Folerne er forholdsvis usædvanlig korte og robuste, paa langt nær ikke opnaaende Legemets halve Længde, og er kun sparsomt besatte med ganske korte Borsteknipper i den bagre Kant. 1ste Par har Skaftets 1ste Led kortere end Hovedet, det følgende betydelig længere, sidste noget kortere end 2det. Svøben er lidt mere end halvt saa lang som Skaftet og sammensat af 7 Led. Bisvøben (se Fig 2 *a*) bestaar ogsaa her kun af 1 Led, men er dog mindre rudimentær end hos foregaaende Art og næsten saa lang som Svøbens 1ste Led. 2det Par Folere har Svøben kortere end Skaftets sidste Led og bestaaende af 6 Led.

De 2 forreste Fodpar (Fig. 2 *b*, *c*) er af undersætsig Bygning og som sædvanlig noget ulige udviklede, idet 2det Par navnlig hos Hannen er betydelig større end 1ste. Haanden er paa begge Par temmelig bred og sammentrykt, med tydeligt begrændset Griberand; paa 1ste Par (Fig. 2 *b*) er den bagtil bevæbnet med 3 stærke Torner; paa 2det Par (Fig. 3 *c*) ender den med et tydeligt vinkelformigt Fremspring, der ligeledes fortil har 1 eller 2 smaa Torner.

De følgende Fodpar ligner i det nærmeste samme hos foregaaende Art, dog med den Forskjel, at Hofteleddet paa de 3 bagerste Par er noget bredere.

Halefødderne er forholdsvis kortere end hos *P. assimilis*; navnlig er dette tydeligt med sidste Par.

Dyrets Farve er hvidagtig, uden tydelig Pigmentering.

Længden af de største erholdte Exemplarer overstiger ikke $6^1/_2{}^{mm}$.

Forekomst. Vi har taget denne Art paa ikke mindre end 5 forskjellige Stationer, hvoraf ialfald de 4 tilhører den kolde Area. Af disse ligger en (St. 31) udenfor Storeggen; de øvrige i Havet omkring Beeren Eiland og Spitsbergen: Dybden fra 146 til 767 Favne. Arten er herefter utvivlsomt at betragte som en ægte arktisk Form.

The 4 anterior pairs of epimera are well developed, appreciably higher than the body, and increase a little in size posteriorly. The lateral plates of the 3rd abdominal segment terminate posteriorly with a distinct, almost rectangular corner.

Of eyes in the specimens preserved no trace whatever.

The antennæ are by comparison unusually short and robust, not attaining by far half the length of the body, and furnished, though sparingly, with very short bunches of bristles on the posterior margin. The 1st pair have the 1st joint of the peduncle shorter than the head, the succeeding one considerably longer, and the last somewhat shorter than the 2nd. The flagellum is a little more than half as long as the peduncle, and composed of 7 articulations. The secondary flagellum in this form too, is uni-articulate, less rudimentary however than in the preceding species, and well-nigh as long as the 1st joint of the flagellum. The 2nd pair of antennæ have the flagellum shorter than the last joint of the peduncle, and composed of 6 articulations.

The 2 foremost pairs of legs (fig. 2 *b*, *c*) are thickset in structure, and as usual somewhat unequally developed, the 2nd pair, more particularly in the male, much larger than the 1st. The hand in both pairs is rather broad and compressed, with a distinctly defined palmar margin; on the 1st pair (fig. 2 *b*) it is armed posteriorly with 3 powerful spines; on the 2nd (fig. 2 *c*) it terminates with a distinct angular projection, which, anteriorly, has likewise one or two small spines.

The succeeding pairs of legs closely resemble those in the preceding species, but with this difference, that the basal joint on the 3 posterior pairs is somewhat broader.

The caudal stylets are comparatively shorter than in *P. assimilis*; this is particularly appreciable as regards the first pair.

Colour of animal whitish, without distinct pigmentation.

Length of the largest specimens taken not exceeding $6^1/_2{}^{mm}$.

Occurrence. — We took this species at as many as 5 different Stations, of which 4 at least belonged to the cold area. One of these (Stat. 31) lay off the Storeggen Bank, the others in the open sea round Beeren Eiland and Spitzbergen; depth ranging from 146 to 767 fathoms. Hence, the species must unquestionably be regarded as a true Arctic form.

66. Podocerus tenuicorn s, G. O. Sars, n. sp.

(Pl. XVII. Fig. 3).

Podocerus longicornis, G. O. Sars, Crust. & Pycnog. nova etc., No. 38 (non Heller).

Artscharacteristik. Legemet mindre undersætsigt, noget sammentrykt, med vel udviklede Epimerer. Hovedets Sidehjørner stærkt udtrukne og tilspidsede. 3die Bagkropssegments Sideplader bagtil spidsvinklede. Folerne tynde og stærkt forlængede, næsten af hele Legemets Længde og i den bagre Kant forsynede med lange og tynde Børster; 1ste Par med Skaftets 1ste Led længere end Hovedet; Bisvøben 1-leddet, halvt saa lang som Svøbens 1ste Led; selve Svøben paa begge Par af ens Udseende, 5-leddet og stærkt afsmalnende. De 2 forreste Fodpar ikke meget kraftigt udviklede, med ovale, ubevæbnede Hænder. De 3 bagre Fodpar indbyrdes næsten af ens Længde. Halefødderne smale. Farven ensformig hvid. Længden 3^{mm}.

Findested. Stat. 295.

Bemærkninger. Denne lille Art kjendes let fra de 2 foregaaende ved sine ualmindelig stærkt forlængede og tynde, bagtil med lange Børsteknipper besatte Folere, de stærkt uddragne Sidehjørner paa Hovedet og de forholdsvis svagt byggede forreste Fodpar. Da Artsbenævnelsen "longicornis" allerede har været anvendt af Heller for en middelhavsk Art, har jeg her ombyttet den med en anden, ligeledes hentet fra Folernes Bygning.

Beskrivelse. Legemet er (se Pl. XVII, Fig. 3) temmelig slankt og noget sammentrykt fra Siderne, med jevnt buet Ryg og forholdsvis høie Epimerer.

Hovedet er kortere end de 2 forreste Segmenter tilsammen og har Sidehjørnerne stærkt udtrukne og skarpt tilspidsede.

Af Epimererne er 1ste Par forholdsvis lidet og delvis dækket af det følgende; de 3 næste Par er derimod temmelig store og kjendeligt høiere end selve Kroppen. 3die Bagkropssegments Sideplader er bagtil uddragne til et spidsvinklet Hjørne.

Øine mangler ganske og aldeles, og intet Spor af Pigment var at se paa Øinenes Plads hos det netop indfangede Dyr.

Folerne er ualmindelig stærkt forlængede og tynde, næsten af hele Legemets Længde og i den bagre Kant forsynede med lange og tynde bøiede Børster. 1ste Par har Skaftets 1ste Led kjendeligt længere end Hovedet, de 2 følgende endnu mere forlængede og cylindriske. Bisvøben er ligesom hos de 2 foregaaende Arter 1-leddet og omtrent halvt saa lang som Svøbens 1ste Led. Selve Svøben er

66. Podocerus tenuicornis, G. O. Sars, n. sp.

(Pl. XVII, fig. 3).

Podocerus longicornis, G. O. Sars, Crust. & Pycnog. nova etc., No. 38 (non Heller).

Specific Character. — Body less thickset, somewhat compressed, with well-developed epimera. Lateral corners of head greatly produced, and pointed. Lateral plates of 3rd abdominal segment acute-angled posteriorly. Antennæ slender and exceedingly elongate, well-nigh equalling whole body in length, and furnished on posterior margin with long and delicate bristles; 1st pair with 1st joint of peduncle longer than head; secondary flagellum uni-articulate, half as long as 1st joint of flagellum; true flagella uniform in appearance, five-jointed, and rapidly tapering. The 2 anterior pairs of legs not very powerfully developed, with oval, unarmed hands; the 3 posterior al most equal in length. Caudal stylets slender. Colour uniform white. Length 3^{mm}.

Locality. — Stat. 295.

Remarks. — This diminutive species is easily distinguished from the 2 preceding ones by its remarkably elongate and slender antennæ, furnished posteriorly with long fascicles of bristles, — by the greatly produced lateral corners of the head, and also by the comparatively feeble structure characterizing the foremost pair of legs. The specific designation "longicornis" having already been adopted by Heller for a Mediterranean species, I selected another, likewise derived from the structure of the antennæ.

Description. — The body (see Pl. XVII, fig. 3) occurs rather slender, and somewhat compressed from the sides, with the back evenly arched and relatively high epimera.

The head is shorter than both of the 2 formost segments taken together, and has the lateral corners greatly produced and acutely pointed.

Of the epimera, the 1st pair are comparatively small, and in part covered by the 2nd; the 3 succeeding pairs, on the other hand, are rather large, and appreciably higher than the body. The lateral plates ot the 3rd abdominal segment are drawn out posteriorly to an acute-angled corner.

Eyes entirely wanting; and no trace of pigment could be anywhere detected within the ocular area in the recently taken specimen.

The antennæ are remarkably elongate and slender, well-nigh equalling the whole body in length, and furnished on the posterior margin with long, delicately curving bristles. The 1st pair have the 1st joint of the peduncle appreciably longer than the head, the 2 succeeding joints still more produced and cylindric in form. As in the 2 preceding species, the secondary flagellum is uni-articulate,

paa begge Par af ens Udseende og Længde, stærkt afsmalnende mod Spidsen og bestaaende af 5 langstrakte Led.

De 2 forreste Fodpar er mindre kraftigt udviklede end hos de 2 foregaaende Arter, med simpelt ovale Hænder uden Torner, men besatte alene med fine Borster. De 3 bagerste Par er indbyrdes næsten af ens Længde og har Hofteleddet temmelig bredt.

Halefodderne og Halevedhænget viser den sædvanlige Bygning.

Dyrets Farve er overalt ensformig hvid, uden Spor af nogen Pigmentering.

Længden af det undersøgte Individ er kun 3^{mm}.

Forekomst. Et enkelt Exemplar af nærværende Art, en efter Udseendet fuldt udviklet Hun, blev under Expeditionens sidste Togt taget i Havet NV af Finmarken (St. 295) fra det betydelige Dyb af 1110 Favne. Stationen tilhører den kolde Area.

and nearabout half as long as the 1st joint of the flagellum. The flagellum itself is on both pairs uniform in length and appearance, tapers rapidly toward the extremity, and consists of 5 elongated joints.

The 2 foremost pairs of legs are less powerfully developed than in the 2 preceding species, having simple, oval hands, without spines, merely furnished with delicate bristles. The 3 posterior pairs are almost equal in length, and have the basal joint rather broad.

The caudal stylets and the telson exhibit the usual structure.

The colour of the animal is everywhere a uniform white, without the slightest trace of pigmentation.

Length of the specimen examined only 3^{mm}.

Occurrence. — One individual only of the present species — to judge from its appearance a fully developed female — was brought up, on the last cruise of the Expedition, north-west of Finmark (Stat. 295), from the considerable depth of 1110 fathoms. The Station lay in the cold area.

Gen. 2. **Erichthonius**, Edw., 1850.

Ann. d. sciences naturelles XX.
Syn: *Cerapus*, auctorum (non Say).

67. Erichthonius megalops, (G. O. Sars), n. sp.

(Pl. XVII, Fig. 4, *a—b*).

Cerapus megalops, G. O. Sars, Crust. & Pycnog. nova etc., No. 39.

Artscharacteristik. Legemet smalt, nedtrykt, med særdeles smaa Epimerer. Hovedets Sidelober brede, stumpvinklede. De 3 forreste Bagkropssegmenters Sideplader meget smaa. Øinene store, afrundet ovale, med mørkt Pigment. Folerne omtrent af ens Størrelse, mere end halvt saa lange som Legemet, bagtil med tætte Borsteknipper; Svoben paa 1ste Par saa lang som Skaftets 2 sidste Led tilsammen, 12-leddet. 1ste Fodpar meget lidet og svagt bygget, med liden, næsten qvadratisk Haand; 2det Par betydelig stærkere udviklet, hos Hannen overordentlig stort, med 4de Led (carpus) stærkt opsvulmet og næsten dobbelt saa langt som bredt samt gaaende nedad ud i en fortilrettet dolkformig Fortsats, der naar til Enden af Haaden; dennes nedre Rand crenuleret. De følgende Fodpar alle med pladeformigt udvidet Hofteled; sidste Led paa de bagerste Par stærkt forlænget. Sidste Par Halefodder korte, med en enkelt liden hageformig Gren. Halevedhænget lidet, rørformigt. Farven hvidagtig med sparsomt brunligt Pigment. Længden 7^{mm}.

Gen. 2. **Erichthonius**, Edw., 1850.

Ann. des sciences naturelles XX.
Syn: *Cerapus*, auctorum (non Say).

67. Erichthonius megalops, (G. O. Sars), n. sp.

(Pl. XVII, fig. 4, *a—b*).

Cerapus megalops, G. O. Sars, Crust. & Pycnog. nova etc., No. 39.

Specific Character. — Body slender, depressed, with exceedingly small epimera. Lateral lobes of head broad, obtuse-angled. Lateral plates of the 3 anterior abdominal segments very small. Eyes large, rounded oval, with dark pigment. Antennæ about equal in size, more than half as long as body, furnished posteriorly with dense fascicles of bristles; flagellum on 1st pair twelve-jointed, and as long as the last 2 joints of the peduncle taken together. First pair of legs very small and feeble in structure, with hand diminutive, well-nigh quadrate; 2nd pair much more powerfully developed, in male remarkably large, with 4th joint (carpus) greatly swollen, almost twice as long as broad, and jutting down in the form of a forward-directed, mucroniform projection, attaining the extremity of the hand, which has the lower margin crenellated. Succeeding pairs of legs all with basal joint lamelliform-dilated; last joint on hindmost pair exceedingly elongate. Last pair of caudal stylets short, with a small unguiform branch. Telson small, tubular. Colour whitish, with scattered brownish pigment. Length 7^{mm}.

Findesteder. Stat. 200. 223.

Bemærkninger. Nærværende Art skiller sig fra de øvrige bekjendte ved sine usædvanlig store mørkfarvede Øine, de stærkt forlængede Følere og Formen af 2det Fodpar hos Hannen.

Slægten *Cerapus* Say, for hvilken *C. tubularis* er Typen, er, som nylig af Sidn. Smith paavist, væsentlig forskjellig fra *Sl. Erichthonius* Edw. og hører til *Corophiidernes* Familie. Den eneste nordiske Art af denne Slægt er *C. crassicornis* (Siphonœcetes) Sp. Bate, der ogsaa forekommer ved vore Kyster.

Beskrivelse. Legemet er (se Pl. XVII. Fig. 4) som hos Slægtens øvrige Arter meget smalt, ikke sammentrykt fra Siderne, men hellere noget nedtrykt, med særdeles smaa Epimerer.

Hovedet er omtrent saa langt som de 2 forreste Segmenter tilsammen og viser en lignende Form som hos Arterne af foregaaende Slægt. De mellem begge Par Følere udskydende Sidelapper er brede og danner fortil en stump Vinkel. Den nedre Rand af Hovedet er ved Basis af 2det Par Følere jevnt udrandet og danner bag deres Fæste en fremspringende Vinkel.

De 4 forreste Par Epimerer er neppe halvt saa høie som selve Kroppen og skjævt afrundede. 5te Par er noget større, med den forreste Lap temmelig dyb; de 2 bagre Par betydelig mindre. De 3 forreste Bagkropssegmenters Sideplader er forholdsvis meget smaa og ender med et tydeligt Hjørne eller Vinkel.

Øinene er i Sammenligning med samme hos de øvrige bekjendte Arter usædvanlig store, af afrundet oval Form og beliggende nær ind til Hovedets Sidelapper. Deres Pigment er af dyb sortbrun Farve.

Følerne er stærkt forlængede, kjendeligt overgaaende Legemets halve Længde, og ligesom hos Arterne af foregaaende Slægt i den bagre Kant besatte med lange Børsteknipper. 1ste Par er lidt længere end 2det og mangler Bisvøbe, hvorimod Svøben er vel udviklet og sammensat af circa 12 Led. 2det Par har Svøben kortere og kun 6-leddet.

1ste Fodpar (Fig. 4 *a*) er meget lidet og svagt bygget, med 4de Led stærkt udvidet, Haanden kortere end dette og næsten qvadratisk.

2det Fodpar er betydelig kraftigere udviklet og af forskjelligt Udseende hos begge Kjøn. Hos Hunnen (se Fig. 4) er 4de Led eller Haandroden kort og nedentil forlænget i en smalt tungeformig fortilrettet Flig, medens selve Haanden er stærkt udvidet og af oval Form. Hos Hannen er dette Fodpar (Fig. 4 *b*) ganske enormt udviklet, idet Haandroden her er overordentlig stor og opsvulmet samt fortil forlænget i en skarpt tilspidset dolkformig Fortsats, der strækker sig nedenunder Haanden, næsten til dennes Ende og danner ligesom en Tommel, hvorimod Endekloen

Locality, — Stat. 200. 233.

Remarks. — The present species is distinguished from every other known form of the genus by its unusually large and dark-coloured eyes, greatly elongated antennæ, and the form of the 2nd pair of legs in the male.

The genus *Cerapus* Say, of which *C. tubularis* is the type, differs essentially, as shown by Sidney Smith, from the genus *Erichthonius* Edw., belonging, as it does, to the family *Corophiidæ*. The only Northern species of this genus is *C. crassicornis* (Siphonœcetes) Sp. Bate, also met with on the coasts of Norway.

Description. — The body (see Pl. XVII. fig. 4) is very slender, as in the other species of the genus, not compressed from the sides, but rather somewhat depressed, with exceedingly small epimera.

The head has about the length of the 2 foremost segments taken together, and exhibits a form similar to that observed in the species of the preceding genus. The lateral lobes jutting out between both pairs of antennæ, are broad, and form anteriorly an obtuse angle. The lower margin of the head at the base of the 2nd pair of antennæ, is evenly emarginate, forming, posterior to their points of attachment, an angular projection.

The 4 anterior pairs of epimera attain scarcely half the height of the body, and are obliquely rounded. The 5th pair are somewhat larger, with the foremost lobe rather deep, — the 2 posterior pairs considerably smaller. The lateral plates of the 3 anterior abdominal segments are comparatively very small, and terminate as a distinct corner or angle.

The eyes, as compared with those in the other known species, are remarkably large, of a rounded oval form, and placed in close proximity to the lateral lobes of the head. Their pigment is a dark-brown.

The antennæ are greatly produced, appreciably exceeding half the body in length, and furnished, as in the species of the preceding genus, along the posterior margin with long fascicles of bristles. The 1st pair is a trifle longer than the 2nd, and without any secondary flagellum; however, the flagellum occurs well developed, and composed of close upon 12 articulations. The 2nd pair have the flagellum shorter, and only six-jointed.

The 1st pair of legs (fig. 4 *a*) are very small and feeble in structure, with the 4th joint greatly expanded, the hand shorter than the latter, and almost quadrate.

The 2nd pair of legs exhibit a much stronger development and a different appearance in the two sexes. The female (see fig. 4) has the 4th joint, or carpus, short, and below, produced to a narrow, linguiform, forward-directed lappet, whereas the hand itself is greatly expanded, and oval in form. In the male, this pair of legs (fig. 4 *b*) are prodigiously developed, the carpus being remarkably large and swollen, as also prolonged anteriorly to an acute-pointed, mucroniform process, extending down under the hand, well-nigh to its extremity, and forming, as it were, a thumb.

kan indboies. Selve Haanden er betydelig kortere og smalere, uden tydeligt begrændset Griberand, men nedentil forsynet med flere knudeformige Fremspring.

De 2 følgende Fodpar udmærker sig derved, at deres Hofteled ligesom paa de 3 bageste Par er pladeformigt udvidet og af oval eller skivedannet Form. 5te Fodpar er betydelig mindre end baade det foregaaende og efterfølgende og ialmindelighed boiet opad. Sidste Led paa de 2 bagre Par er stærkt forlænget og bærer en kraftig krummet Endeklo.

Sidste Par Halefødder er kortere end de foregaaende Par og kun forsynede med en enkelt kort hageformig opadkrummet Gren.

Halevedhænget er lidet, rørformigt og ved Spidsen bevæbnet med en Del stærke Torner.

Dyrets Farve er hvidagtig, mere eller mindre spraglet med brunt Pigment.

Længden er omtrent 7^{mm}.

Forekomst. Flere Exemplarer, saavel Hanner som Hunner, af denne Art toges under Expeditionens 2det Togt paa en enkelt Lokalitet (St. 200) i Havet NV af Finmaken fra et Dyb af 620 Favne. Et enkelt Exemplar erholdtes desuden S af Jan Mayen (St. 224) paa betydelig ringere Dyb, nemlig 95 Favne. Da begge Stationer tilhører den kolde Area, er Arten utvivlsomt at betragte som en ægte arktisk Form.

against which the terminal claw admits of being bent in. The hand itself is considerably shorter and narrower, without any well-defined palmar margin, but furnished below with several tuberculiform projections.

The 2 succeeding pairs of legs are characterized by the basal joint occurring, as in the 3 posterior pairs, lamelliform-dilated, and of an oval or discoid form. The 5th pair are considerably smaller than either the preceding or the succeeding, and, as a rule, upturned. The last joint of the 2 posterior pairs is greatly produced, and bears a powerful curving terminal claw.

The last pair of caudal stylets are shorter than the preceding, and furnished merely with a single short unguiform upward-curving branch.

The telson is small, tubular, and armed at the point with a number of strong spines.

Colour of animal whitish, more or less variegated with brownish pigment.

Length about 7^{mm}.

Occurrence. — Several examples of this species — both male and female — were brought up on the 2nd cruise of the Expedition, in a single locality (Stat. 200), north-west of Finmark, from a depth of 620 fathoms. A single specimen was also taken south of Jan Mayen (Stat. 224), at a much less considerable depth, viz. 95 fathoms. Both Stations having belonged to the cold area, the species must unquestionably be regarded as a true Arctic form.

Fam. **Corophiidæ.**

Gen. **Unciola,** Say, 1818.

Journ. Acad. Nat. Sci. Philadelphia I.
Syn: Glauconome, Kröyer, 1845.

68. Unciola petalocera, (G. O. Sars), n. sp.

(Pl. XVII, Fig. 5, *a—l*).

Glauconoma petalocera, G. O. Sars, Crust. & Pycnog. nova etc., No. 40.

Artscharakteristik. Legemet smalt og forlænget, noget nedtrykt, med meget smaa Epimerer. Hovedet fortil afstumpet, med tilspidsede Sidehjørner. 1ste Par Epimerer gaaende fortil ud i en tilspidset Flig. De 3 forreste Bagkropssegmenters Sideplader med det nedre bagre Hjørne udtrukket i en skarp Spids. Ingen Øine. 1ste Par Folere tynde og forlængede, med Skaftets sidste Led neppe $^1/_3$ saa langt som 2det. Svøben omtrent af Skaftets Længde. Bisvøben meget liden, 2-leddet. 2det Par Folere betydelig kortere end 1ste Par, hos Hannen kraftigere udviklede,

Fam. **Corophiidæ.**

Gen. **Unciola,** Say, 1818.

Journ. Acad. Nat. Sci. Philadelphia I.
Syn: Glauconome, Kröyer, 1845

68. Unciola petalocera, (G. O. Sars), n. sp.

(Pl. XVII, fig. 5, *a—l*).

Glauconome petalocera, G. O. Sars, Crust. & Pycnog. nova etc., No. 40.

Specific Character. — Body slender and elongate, somewhat depressed, with very small epimera. Head truncate anteriorly, with acute lateral corners. First pair of epimera jutting out anteriorly as a pointed lappet. Lateral plates of 3 foremost abdominal segments having lower posterior corner drawn out to a sharp point. No eyes. First pair of antennæ slender and elongate, with last joint of peduncle scarcely one-third as long as 2nd. flagellum and peduncle about equal in length, secondary flagellum very small, two-jointed. Second pair of antennæ

med Skaftets 3die og 4de Led pladeformigt udvidede og indbyrdes meget bevægeligt articulerede. 1ste Fodpar stærkt bygget, med Haanden hos Hunnen af normalt Udseende, hos Hannen stærkt udvidet og sammentrykt, med 2 dybe Indbugtninger i den nedre Kant og Endekloen ualmindelig lang og leformig. 2det Fodpar meget svagere, med Haanden smal og noget længere end det foregaaende Led samt tvært afkuttet i Enden. De øvrige Fødder tynde og forlængede, alle med smalt, lineært Hofteled; de 2 bagre Par betydelig længere end de øvrige. Sidste Par Halefødder meget smaa, med Basaldelen pladeformig og indad udskydende i en tilspidset Flig; Endeleddet meget lidet, ovalt. Halevedhænget halvelliptiskt, uden Indsnit. Farven hvidagtig. Længden 10^{mm}.

Findesteder. Stat. 18, 31, 124, 137, 200, 290, 312.

Bemærkninger. Nærværende Art ligner mest *U. planipes* Norman, men er let kjendelig ved betydeligere Størrelse og den eiendommelige pladedannede Form af 3die og 4de Led paa Hannens 2det Par Folere, ligesom ogsaa ved 1ste Fodpars Bygning hos Hannen. 2det Fodpar skiller sig hos begge Kjøn fra samme hos *H. planipes* derved, at Haanden er tvært afkuttet i Enden, med tydeligt begrændset Griberand.

Beskrivelse. Legemet er (se Pl. XVII, Fig. 5 og 5 *x*), som hos Slægtens øvrige Arter, smalt og noget nedtrykt, med meget smaa Epimerer.

Hovedet er fortil afkuttet, uden noget tydeligt fremtrædende Pandehorn. Sidehjørnerne er skarpt tilspidsede, og bag dem danner Hovedets nedre Kanter en jevn Udrandning over Basis af 2det Par Folere.

Af Epimererne er de 4 forreste Par kun lidet større end de 3 bagerste og danner fortil et skarpt Hjørne, der paa 1ste Par er udtrukket til en fortilrettet dolkformig Fortsats. De 3 forreste Bagkropssegmenters Sideplader danner bagtil et tilspidset Hjørne, der navnlig paa 3die Segment er temmelig stærkt udtrukket.

Af Øine var intetsomhelst Spor at opdage paa de friskt indfangede Exemplarer.

1ste Par Folere er tynde og stærkt forlængede, betydeligt overgaaende den halve Kropslængde. Af Skaftets Led er det 2det længst; 3die derimod meget kort, neppe $^1/_3$ saa langt som 2det. Svøben er omtrent af Skaftets Længde og sammensat af omkring 20 Led. Bisvøben (se Fig. 5 *a*) er meget liden, neppe mere end halvt saa lang som Skaftets sidste Led og 2-leddet.

2det Par Folere er betydelig kortere end 1ste Par, men forholdsvis kraftigere byggede, med ganske kort 9-leddet Svøbe. Hos Hunnen (Fig. 5 *x*) er Skaftets Led af

considerably shorter than 1st, in male more powerfully developed, having 3rd and 4th joints of peduncle lamelliform-dilated with exceedingly mobile articulations. First pair of legs powerful in structure, having hand, in female, of normal appearance, in male greatly expanded and compressed, with 2 deep incurvations on lower margin and terminal claw remarkably long and falciform. Second pair of legs much feebler, with hand narrow and somewhat longer than preceding joint, as also vertically truncate at extremity. Remaining legs slender and elongate, all with a narrow, linear basal joint; the 2 posterior pairs considerably longer than the rest. Last pair of caudal stylets very small, with basal part lamelliform, jutting inward as an acute-pointed lappet; terminal joint very small, oval. Telson semi-elliptic, without incision. Colour whitish. Length 10^{mm}.

Locality. — Stats. 18, 31, 124, 137, 200, 290, 312.

Remarks. — The present species bears closest resemblance to *U. planipes* Norman, but is easily recognized by its greater size and the peculiar lamellar form of the 3rd and 4th joints of the 2nd pair of antennæ in the male, as also by the structure of the 1st pair of legs. The 2nd pair of legs differs in the two sexes from those of *U. planipes*, the hand occurring vertically truncate at the extremity and with a well-defined palmar margin.

Description. — The body (see Pl. XVII, figs. 5, 5 *x*) is slender and somewhat depressed, as in the other species of the genus, with very small epimera.

The head occurs truncate anteriorly, without exhibiting any distinctly prominent rostrum. The lateral corners are sharply pointed, and, behind them, the lower borders of the head constitute an even emargination above the bases of the 2nd pair of antennæ.

Of the epimera, the 4 anterior pairs are but little larger than the 3 posterior, and form anteriorly a sharp corner, which, on the 1st pair, is drawn out to a forward-directed, mucroniform process. The lateral plates of the 3 anterior abdominal segments form posteriorly an acute-pointed corner, which, more particularly on the 3rd segment, is very considerably produced.

Of eyes, no trace could be detected in the recently taken specimens.

The 1st pair of antennæ are slender and elongate, considerably exceeding half the body in length. Of the joints of the peduncle, the 2nd is longest, the 3rd, on the other hand, being remarkably short, scarce one-third the length of the 2nd. The flagellum and peduncle are well-nigh equally long, and composed of close upon 20 articulations. The secondary flagellum (see fig. 5 *a*) is very small, scarcely more than half the length of the last articulation of the peduncle, — and two-jointed.

The 2nd pair of antennæ are considerably shorter than the 1st, but relatively more powerful in structure, with rather a short nine-jointed flagellum. In the female

sædvanligt Udseende og simpelt cylindriske. Hos Hannen (Fig. 5 og 5 *b*) udmærker derimod 3die og 4de Led sig i høi Grad ved sin eiendommelige Udvikling. Begge disse Led er her stærkt sammentrykte fra Siderne og pladeformigt udvidede, samt forbundne med hinanden ved en særdeles bevægelig Articulation. 3die Led løber nedad ud i en tungeformig Lap, som, naar 4de Led bøies ind, glider henad dettes Yderflade.

Mundregionen er nedad stærkt fremspringende og saagodtsom ganske ubedækket til Siderne (se Fig. 5 og 5 *a*).

Kindbakkerne (Fig. 5 *c*) er kraftigt udviklede, med tydeligt begrændset bred Tyggeknude. Palpen er af betydelig Længde og har sidste Led af oval lancetdannet Form samt besat med meget lange og tynde Børster.

De 2 Par Kjæver (Fig. 5 *d*—*e*) viser intet udmærkende i sin Bygning.

Kjævefødderne (Fig. 5 *f*) har den indre Tyggelap temmelig stor og i den indre Kant bevæbnet med en Rad af Torner. Palpen er forlænget, med de 2 sidste Led rigeligt børstebesatte og Endekloen skarpt tilspidset.

1ste Fodpar er betydelig baade længere og kraftigere bygget end 2det Par. Haanden er stor og bred, men af temmelig forskjellig Form hos de 2 Kjøn. Hos Hunnen (Fig. 5 *h*) er den omvendt pæreformig og temmelig opsvulmet ved Basis, med Griberanden kun ganske svagt indbøiet i Midten og utydeligt begrændset bagtil, hvor der til hver Side er fæstet 3 Torner; Endekloen er betydelig kortere end Haanden og af sædvanligt Udseende. Hos Hannen er Haanden paa dette Fodpar (Fig. 5 *g*) særdeles bred og stærkt sammentrykt, med Griberanden bagtil tydeligt begrændset og forsynet med 2 dybe Indbøininger; Endekloen er overordentlig stærkt forlænget, leformig, og rager, naar den indbøies, med Spidsen langt ud over Haandens Basis eller omtrent til 3die Led.

2det Fodpar (Fig. 5 *i*) er fuldkommen ens formet hos begge Kjøn. Det er af forholdsvis svag Bygning og temmelig rigeligt børstebesat, med Haanden meget smal, noget længere end det foregaaende Led og i Enden næsten tvært afkuttet. Endekloen er meget liden.

De 2 følgende Fodpar er forholdsvis spinkle og kun sparsomt børstebesatte, med de 3 yderste Led indbyrdes omtrent af ens Længde og Endekloen ganske kort.

De 3 bagerste Fodpar har alle Hofteleddet smalt lineært, ikke som sædvanlig pladeformigt udvidet. Det forreste af disse Par er omtrent saa langt som de 2 foregaaende Par, medens de 2 sidste er betydelig stærkere forlængede.

Af Halefødderne er det forreste Par (Fig. 5 *k*) temmelig kraftigt udviklet, med tyk, noget kantet Stamme og forholdsvis korte Grene. Det 2det Par er af samme Bygning, men neppe halvt saa stort.

(fig. 5 *a*), the joints of the peduncle exhibit the usual appearance and a simple cylindric form. In the male (figs. 5, 5 *b*), on the other hand, the 3rd and 4th joints are eminently characterized by their peculiar development. Both of those joints are strongly compressed from the sides and lamelliform-expanded, as also connected by an exceedingly mobile articulation. The 3rd joint juts out below as a lingniform lobe, which, on bending in the 4th joint, slides along the surface of the latter.

The buccal area projects prominently below, and is well-nigh wholly uncovered at the sides (see figs. 5, 5 *a*).

The mandibles (fig. 5 *c*) are powerfully developed, with a broad, distinctly defined molar protuberance. The palp is of considerable length, and has the last joint oval-lanceolate in form, as also beset with very long and delicate bristles.

The 2 pairs of maxillæ (fig. 5 *d*—*e*) exhibit nothing characteristic in their structure.

The maxillipeds (fig. 5 *f*) have the inner masticatory lobe rather large, and armed on the inner margin with a row of spines. The palp is elongate, with the last 2 joints profusely furnished with bristles and the terminal claw sharply pointed.

The 1st pair of legs are at once considerably longer and more powerful in structure than the 2nd pair. The hand is large and broad, but of somewhat deviating form in the two sexes. In the female, it is inverted-pyriform and rather swollen at the base, with the palmar margin but faintly incurved in the middle and indistinctly defined posteriorly, where, on either side, occur 3 spines; the terminal claw is considerably shorter than the hand, and exhibits the usual appearance. In the male, the hand on this pair of legs (fig. 5 *g*) is very broad and strongly compressed, with the palmar margin well defined posteriorly and exhibiting 2 deep incurvations; the terminal claw is remarkably elongate, falciform, and extends, with the point, when bent in, far beyond the base of the hand, or nearabout to the 3rd joint.

The 2nd pair of legs (fig. 5 *i*) occur precisely of a similar form in both sexes. These are comparatively feeble in structure, and rather abundantly bristle-beset, with the hand very narrow, somewhat longer than the preceding joint, and well-nigh vertically truncate at the extremity; the terminal claw is very small.

The 2 succeeding pairs of legs are comparatively slender, and but sparingly furnished with bristles, the outermost 3 joints occurring about equal in length, with the terminal claw quite short.

The hindmost 3 pairs of legs have each the basal joint narrowly linear, not, as is usually the case, lamelliform-expanded. The anterior of these pairs are about as long as the 2 preceding ones, the 2 latter occurring much more elongate.

Of the caudal stylets, the foremost pair (fig. 5 *k*) are rather powerfully developed, having a thick, somewhat angular stem and comparatively short branches. The 2nd pair exhibit a similar structure, but attain scarcely half the size.

Sidste Par endelig (Fig. 5 *l*) er særdeles lidet, simpelt og bestaaende af 2 Led, hvoraf det 1ste (Stammen) er kort og bredt, gaaende indad ud i en med en enkelt Torn bevæbnet tilspidset Flig. Endeleddet er af oval Form og i Kanterne besat med tynde Børster.

Halevedhænget (se Fig. 5 *k*) danner en temmelig stor halvelliptisk Plade, der ved Enden er forsynet med 2 korte Børster.

Dyrets Farve er hvidagtig, uden nogen tydelig Pigmentering.

Længden gaar op til 10^{mm}. Ialmindelighed er Hannerne noget større end Hunnerne.

Forekomst og Udbredning. Nærværende Art er under Expeditionen observeret paa ikke mindre end 7 forskjellige Stationer, alle tilhørende den kolde Area. Af disse ligger 2 (Stat. 18 og 31) i Havet udenfor vor Vestkyst, 2 (Stat. 124 og 137) udenfor Helgelandskysten, 1 (Stat. 200) NV af Finmarken og 1 (Stat. 312) V af Beeren Eiland. Dybden fra 350 til 658 Favne.

Artens for Tiden bekjendte Udbredningsfelt er herefter det østlige Afhæld mod Nordhavets store Dyb fra den 63de til den 75de Bredegrad. Den er utvivlsomt at betragte som en ægte arktisk Form.

Finally, the last pair (fig. 5 *l*) are exceedingly small, simple, and composed of 2 joints, of which the 1st (the stem) is short and broad, protending inward as a pointed lappet bearing a single spine. The terminal joint is oval in form, and fringed along the edges with delicate bristles.

The telson (see fig. 5 *k*) constitutes a rather large, semi-elliptic plate, furnished at the extremity with 2 short bristles.

Colour of animal whitish, without any distinct pigmentation.

Length reaching 10^{mm}. As a rule, the males are somewhat larger than the females.

Occurrence and Distribution. — The present species was observed on the Expedition at as many as 7 different Stations, all belonging to the cold area. Of these, 2 (Stats. 18 and 31) lay off the West Coast of Norway, 2 (Stats. 124 and 137) off the coast of Helgeland, 1 (Stat. 200) north-west of Finmark, and 1 (Stat. 312) west of Beeren Eiland. Depth ranging from 350 to 658 fathoms.

Hence, the tract throughout which the species is at present known to be distributed, comprises the eastern slope of the sea-bed where it shelves toward the great deep of the Northern Ocean — from the 63rd to the 75th parallel of latitude. The animal must unquestionably be regarded as a true Arctic form.

Fam. **Dulichiidæ.**

Gen. **Dulichia,** Kröyer, 1845.

Nat. Tidsskr. 2 R., Bd. 1.

69. **Dulichia tuberculata**, Boeck.

(Pl. XVII. Fig. 6, 6 *a*).

Dulichia tuberculata, Boeck, Crust. amphip. bor. et arct. pg. 183.

Dulichia tuberculata, Boeck, de skandinaviske og arktiske Amphipoder. Bd. 2, pg. 655, Tab. XXX. Fig. 1.

Dulichia septentrionalis, G. O. Sars, Crust. & Pycnog. nova etc., No. 41.

Artscharacteristik. Legemet noget mindre forlænget end sædvanlig, navnlig hos Hunnen, ubevæbnet. Hovedet foran 1ste Par Foleres Fæste koniskt fremspringende. Alle Epimerer smaa, skjælformige, af samme Udseende hos begge Kjøn. Øinene vel udviklede, runde, convexe, mørkerøde. Folerne tynde og kun sparsomt børstebesatte. 1ste Par noget længere end 2det, med Skaftets 2 sidste Led omtrent af ens Længde, Bisvøben 3-leddet. 2det Fodpar hos Hannen kraftigt udviklet med stor aflang oval Haand, forsynet ved Basis med en lige nedadrettet dolkformig Fortsats; Ende-

Fam. **Dulichiidæ.**

Gen. **Dulichia,** Kröyer, 1845.

Nat. Tidsskr. 2 R., Bd. 1.

69. **Dulichia tuberculata**, Boeck.

(Pl. XVII, fig. 6, 6 *a*).

Dulichia tuberculata, Boeck, Crust. amphip. bor. et arct. p. 183.

Dulichia tuberculata, Boeck, de skandinaviske og arktiske Amphipoder. Bd. 2, p. 655, Pl. XXX, fig. 1.

Dulichia septentrionalis, G. O. Sars, Crust. & Pycnog. nova etc., No. 41.

Specific Character. — Body somewhat less elongate than usual, particularly in female, unarmed. Head, anterior to attachment of 1st pair of antennæ, conical and projecting. All epimera small, squamiform, of uniform appearance in both sexes. Eyes well developed, round, convex, dark-red in colour. Antennæ slender, and but sparingly furnished with bristles, 1st pair somewhat longer than 2nd, with 2 last joints of peduncle about equal in length, three-jointed. Second pair of legs in male powerfully developed, with large oblongo-ovate hand, provided at

kloen med 2 Knuder ved Roden. De 3 bagerste Fodpar tynde og forlængede, sidste Par længst. Farven gulhvid, marmoreret med rodbrunt. Længden 6—7^{mm}.

Findested. Magdalenebay (Spitsbergen).

Bemærkninger. Ved nærmere at conferere med Boeck's Amphipodeværk, maa jeg nu anse denne af mig tidligere som ny opførte Art for identisk med den af Boeck under Benævnelsen *D. tuberculata* beskrevne Art, hvorfor det ældre Navn her er bibeholdt. Da baade Text og Afbildninger i Boeck's Værk her, som i mange andre Tilfælde, lader meget tilbage at ønske, vedføies nedenfor en udførlig Beskrivelse af Arten, affattet efter Exemplarer indsamlede under Expeditionen.

Beskrivelse af Hunnen. Legemet er (se Pl. XVII, Fig. 6) af den for Slægten characteristiske spinkle Form; dog noget mere undersætsigt end hos enkelte af de øvrige bekjendte Arter. Det er i Modsætning til hvad Tilfældet er hos den typiske Art. *D. spinosissima* Kröyer, ganske ubevæbnet, uden Pigge eller Fortsatser.

Hovedet er noget længere end de 2 første Segmenter tilsammen og gaar fortil ud i en over Roden af 1ste Par Følere fremragende konisk Spids eller Pandehorn. Dets Sidekanter er noget bugtede, uden dog at vise noget tydeligt Hjørne.

Af Forkroppens Segmenter er det 1ste ganske kort, det 2det omtrent dobbelt saa langt, medens de 2 derpaa følgende er betydelig større end nogen af de øvrige og danner ovenfra hos den ægbærende Hun en temmelig stærk Hvælvning. De 2 sidste Segmenter er som hos Slægtens øvrige Arter sammensmeltede til et enkelt Stykke af samme Størrelse og Form som det foregaaende Segment.

Bagkroppen er særdeles smal, omtrent halvt saa lang som Forkroppen og kun sammensat af 5 Segmenter. De 3 forreste er ganske korte, medens 4de Segment er stærkt forlænget og meget tyndt.

Epimererne er smaa og af skjældannet Form, størst paa de 3 midterste Segmenter.

Øinene er vel udviklede og af betydelig Størrelse, cirkelrunde samt stærkt convexe. Deres Pigment er af en dyb mørkerød Farve.

Følerne er særdeles tynde og forlængede samt i den bagre Kant temmelig sparsomt forsynede med korte Børsteknipper. 1ste Par er som sædvanlig længst og lige udstrakte næsten af Legemets Længde. Skaftets 1ste Led er temmelig tykt, men betydelig kortere end Hovedet, medens de 2 følgende Led er særdeles tynde og forlængede samt omtrent af ens Størrelse. Svøben er ubetydelig længere end Skaftets sidste Led og bestaar af 5—6 temmelig utydeligt begrændsede Led, hvoraf det 1ste er længst. Bisvøben er meget liden og tynd, 3-leddet. 2det Par Følere har Skaftets 2 sidste

base with a straight, mucroniform, downward-directed process; terminal claw with 2 protuberances at base. The 3 posterior pairs of legs slender and elongate, last pair longest. Colour yellowish-white, marbled over with reddish-brown.

Locality. — Magdalena Bay (Spitzbergen).

Remarks. — Having carefully referred to Boeck's work on Amphipods, I must now hold this species, which I had previously established as new, to be identical with the form described by Boeck as *D. tuberculata:* wherefore the elder designation is here retained. Meanwhile, as both letter-press and figures — in this case as frequently elsewhere throughout Boeck's work — leave much to be desired, I have given below a detailed description of the species, worked up from specimens collected on the Expedition.

Description of the Female. — The body (see Pl. XVII, fig. 6) exhibits the slender form characteristic of the genus, though a trifle more thickset than in some of the other known species. Unlike what is the case in the typical species, *D. spinosissima* Kröyer, it is quite unarmed, having neither spikes nor spiniform projections.

The head is somewhat longer than the 2 first segments taken together, and juts out anteriorly, above the bases of the 1st pair of antennæ, as a conical point, or rostrum. Its lateral margins are somewhat flexuous, without however exhibiting any distinct corner.

Of the pedigerous segments, the 1st is quite short, the 2nd about twice as long, whereas the 2 succeeding ones are much longer than any of the others, and form above, in the ovigerous female, a somewhat prominent arch. The 2 last segments, like those in the other species of the genus, are grown together in one piece, uniform as to size and form with the preceding segment.

The posterior division of the body is exceedingly slender, about half as long as the anterior, and composed of only 5 segments. The foremost 3 are quite short, whereas the 4th segment is greatly produced, and very slender.

The epimera are small, and squamiform in shape — largest on the 3 median segments.

The eyes are well developed and of considerable size, circular and prominently convex. Their pigment is a dark-red.

The antennæ are exceedingly slender and elongate, as also, on the posterior margin, rather sparingly furnished with short fascicles of bristles. The 1st pair is, as usual, longest, and, when fully extended, almost equal to the body in length. The 1st joint of the penduncle is somewhat thick though much shorter than the head, whereas the 2 succeeding joints are very slender and elongate, as also wellnigh equal in size. The flagellum is but slightly longer than the last joint of the peduncle, and consists of 5 or 6 somewhat indistinctly defined articulations, of which the 1st

Led tynde og forlængede som paa 1ste Par og Svoben noget kortere end det sidste Led samt bestaaende af 4 Led.

Mundregionen rager tydeligt frem nedenfor Hovedet. De enkelte Munddele kunde ikke noiere undersoges paa Grund af manglende Materiale.

De 2 forreste Fodpar er indbyrdes af ens Bygning, og 2det Par kun lidet større end 1ste; begge temmelig rigeligt børstebesatte. Haanden er liden og ufuldstændigt subcheliform, af aflang oval Form og betydelig kortere end det foregaaende Led (Haandroden).

De 2 følgende Fodpar er kun lidet længere, men meget spinklere, med sidste Led særdeles smalt, lineært og Endekloen forholdsvis liden.

De 3 sidste Fodpar er derimod betydelig stærkere udviklede, skjøndt af forholdsvis spinkel Form, og tiltager successivt i Længde bagtil, saa at det sidste Par, der udgaar tæt ved Siden af det næstforegaaende fra Bagsiden af sidste Segment, omtrent er af hele Forkroppens Længde, naar Hovedet fraregnes. Hofteleddet er paa alle ganske smalt, lineært, og 3die Led stærkt forlænget. Endekloen er kraftigt udviklet og leformig krummet.

Gjellebladene, der kun er tilstede i 2 Par, paa 3die og 4de Segment, er meget smaa og smale.

Brystposen eller Klækkehulen var paa det undersogte Exemplar stærkt udviklet og dannede en næsten halvkugleformig Fremragning midt under Forkroppen.

De 3 Par Svømmevedhæng er forholdsvis store og lige til Roden ubedækkede af de meget smaa Sideplader paa de tilsvarende Bagkropssegmenter.

Af Halefødder er som hos Slægtens øvrige Arter kun 2 Par tilstede og af den vanlige Bygning.

Halevedhænget er meget lidet og af triangulær Form.

Hannen (Fig. 6 *x*) er betydelig slankere end Hunnen, næsten af fuldkommen lineær Form, og har de 2 midterste Forkropssegmenter betydelig mindre, neppe større end de 2 følgende. Ingen af Epimererne er forlænget til dolkformige Fortsatser.

Folerne er forholdsvis stærkere udviklede end hos Hunnen, og navnlig udmærker 1ste Par sig ved Størrelsen af Skaftets 1ste Led og ved Svobens betydelige Længde.

2det Fodpar er særdeles kraftigt bygget og meget uligt samme hos Hunnen. Haanden er særdeles stor og opsvulmet, af samme Længde som alle de øvrige Led tilsammen og af aflang oval Form. Den er ved Basis nedentil forsynet med en stærk dolkformig, lige nedadrettet Fortsats og gaar fortil ud i et skarpt, skjævt fortilrettet Hjørne. Den nedre Kant er mellem begge Fortsatser næsten ret og besat med lange og fine Børster. Endekloen er meget stærk og viser ved Basis 2 smaa Knuder, hvilket har givet

is longest. The secondary flagellum is very small, and three-jointed. The 2nd pair of antennæ have the 2 last joints of the peduncle slender and elongate, as on the 1st pair, and the flagellum somewhat shorter than the last joint, as also composed of 4 articulations.

The buccal region projects distinctly below the head. The several oral appendages did not admit of being closely examined for want of sufficient material.

The 2 foremost pairs of legs have each a similar structure, and the 2nd pair is but little larger than the 1st; both are abundantly furnished with bristles. The hand is small and imperfectly subcheliform, in shape oblongo-oval, and considerably shorter than the preceding joint (carpus).

The 2 succeeding pairs of legs are but little longer, and much more slender, with the last joint exceedingly slim, linear, and the terminal claw comparatively small.

The 3 last pairs of legs, on the other hand, have a much more powerful development, though comparatively a slender form, and diminish successively in length posteriorly; hence the last pair, issuing as they do in close proximity to that immediately preceding them, — from the posterior side of the last segment, — equal in length about the whole of the anterior division of the body, excluding the head. The basal joint of every pair is quite slender, linear, with the 3rd articulation greatly produced. The terminal claw occurs powerfully developed, and falciform.

The branchial lamellæ — present in 2 pairs only, on the 3rd and 4th segments — are very small and narrow.

The marsupium, or ovigerous pouch, was greatly developed in the specimen before us, forming a well-nigh semi-globular projection beneath the middle of the anterior division of the body.

The 3 pairs of pleopoda are comparatively large, and down to the base wholly uncovered by the small lateral plates on the corresponding abdominal segments.

Of caudal stylets, 2 pairs only are present, as in the other species of the genus, and of the usual structure.

The telson is very small, and triangular in form.

The *Male* (fig. 6 *x*) is very much slimmer than the female, nay almost linear in form, and has the 2 medial pedigerous segments considerably smaller, exceeding scarcely at all the 2 next in size. None of the epimera are produced to mucroniform processes.

The antennæ have relatively a more powerful development than in the female; and the 1st pair are specially distinguished by the size of the 1st joint of the peduncle and by the greater length of the flagellum.

The 2nd pair of legs are most powerfully developed, and very dissimilar from those in the female. The hand is exceedingly large and swollen, equal in length to all the other joints taken together, and of an oblong-oval form. At the base, it is furnished below with a strong, mucroniform prolation, directed straight downward, and juts out anteriorly as a sharp, oblique, forward-projecting corner. The lower margin, beset with long and delicate bristles, runs well-nigh straight between the two prolations. The

Anledning til Artsbenævnelsen; naar den slaaes ind mod Haanden, moder den med Spidsen den bagre Fortsats.

Farven er gulagtig, halv gjennemsigtig, og navnlig hos Hunnen marmoreret med brunrødt Pigment.

Længden af den ægbærende Hun er omtrent 6^{mm}. Hannen er noget større, nemlig 7^{mm}.

Forekomst. 2 Exemplarer af denne Art, en Hun og en Han, toges under Expeditionens sidste Togt i den isfyldte Magdalenebay paa Nordvestsiden af Spitsbergen; Dybden 10—20 Favne. Samme Art forekommer ogsaa af og til ved vore Kyster, navnlig ved Finmarken. Efter Boeck skal den gaa sydlig lige til Christianiafjorden.

terminal claw is very powerful, and exhibits at the base 2 small protuberances, a character that gave rise to the specific designation; when jerked in toward the hand, its point comes in contact with the posterior prolation.

Colour yellowish, semi-translucent, and, more especially in the female, marbled over with a brownish-red pigment.

Length of the ovigerous female about 6^{mm}. The male is a trifle larger, viz. 7^{mm}.

Occurrence. — Two individuals of this species, a male and a female, were taken on the Expedition (last cruise) in the ice-encumbered Magdalena Bay, north-west shore of Spitzbergen; depth ranging from 10 to 20 fathoms. The same species occurs too, now and again, off the coasts of Norway, in particular the coast of Finmark. According to Boeck, its habitat is known to range as far south as the Christianiafjord.

70. Dulichia hirticornis, G. O. Sars, n. sp.

(Pl. XVIII, Fig. 1, 1 *a*).

Dulichia hirticornis, G. O. Sars, Prodromus descriptionis etc., No. 134.

Artscharacteristic. Legemet forholdsvis robust, noget nedtrykt, glat. Hovedet fortil stumpt koniskt. Øinene smaa, ovalrunde, hvidgule. Folerne kraftigt udviklede, i den bagre Kant tæt besatte med lange Børsteknipper; 1ste Par af mere end Legemets Længde, med Skaftets 1ste Led saa langt som Hovedet, 3die Led længere end 2det, Bisvoben liden, 3-leddet. 2det Fodpar hos Hunnen af samme Udseende som 1ste, hos Hannen betydelig større, tæt haaret, med særdeles stor og bred, sammentrykt Haand, der nedentil gaar ud i 2 skraat fortilrettede dolkformige Fortsatser, den bagerste størst og omtrent beliggende ved Midten af Haandens Længde. 3die og 4de Fodpar med noget udvidet Hofteled. De 3 bagerste Fodpar ualmindelig robuste og næsten indbyrdes af ens Længde. Legemet gjennemsigtigt, med hvidgult Pigment. Længden 11^{mm}.

Findesteder. Stat. 18, 31, 200.

Bemærkninger. Denne Art er let kjendelig fra de tidligere beskrevne ved sin ualmindelig plumpe Kropsform, de forholdsvis robuste og tæt haarede Folere og de smaa hvidgule Øine.

Beskrivelse af Hunnen. Legemet er (se Pl. XVIII, Fig. 1) i Sammenligning med de øvrige bekjendte Arter af Slægten usædvanlig plumpt, stærkt nedtrykt, med bred hvælvet Ryg og uden Pigge eller Fortsatser.

70. Dulichia hirticornis, G. O. Sars, n. sp.

(Pl. XVIII, fig. 1, 1 *a*).

Dulichia hirticornis, G. O. Sars, Prodromus descriptionis etc., No. 134.

Specific Character. — Body comparatively robust, somewhat depressed, smooth. Head anteriorly conico-obtuse. Eyes small, in form a rounded oval, colour whity-yellow. Antennæ powerfully developed; along posterior margin densely beset with long fascicles of bristles; 1st pair greater in length than body, with 1st joint of peduncle as long as head, 3rd joint longer than 2nd, secondary flagellum small, tri-articulate. Second pair of legs, in female, of same appearance as 1st, in male considerably larger, densely hirsute, with hand exceedingly large broad and compressed, jutting below as 2 oblique, forward-directed, mucroniform prolations, posterior prolation the larger, and placed about in middle of hand longitudinally. Third and 4th pair of legs with slightly dilated basal joint. The 3 posterior pairs of legs remarkably robust, and well-nigh equal in length. Body translucent, with whity-yellow pigment. Length 11^{mm}.

Locality. — Stats. 18, 31, 200.

Remarks. — This species is easily distinguishable from those previously described by its remarkably clumsy form of body, comparatively robust and densely hirsute antennæ, and small whitish-yellow eyes.

Description of the Female. — The body (see Pl. XVIII, fig. 1), as compared with the other known species of the genus, is unusually clumsy in form, very much depressed, the back broadly arched, and without either spikes or spiniform prolations.

Hovedet har en lignende Form som hos foregaaende Art. Dog er den over 1ste Par Foleres Fæste fremskydende Del noget mindre fremspringende og stumpere.

Af Forkroppens Segmenter er de 2 forreste som sædvanlig mindst, de følgende alle omtrent af ens Storrelse. Bagkroppen forholder sig omtrent som hos foregaaende Art.

Epimererne er særdeles smaa, skjælformige, og alle omtrent ens udviklede.

Øinene er, i Modsætning til hvad Tilfældet er hos foregaaende Art, meget smaa og ikke fremspringende til Siderne. De er af oval rund Form, noget skjævt stillede og forsynede med et ganske lyst, hvidgult Pigment.

Folerne er usædvanlig robuste og i hele den bagre Kant forsynede med tætte og lange Børsteknipper. 1ste Par er baade længere og kraftigere end 2det og, lige udstrakte, vel saa lange som hele Legemet. Skaftets 1ste Led er omtrent af Hovedets Længde og tykkere end de øvrige; dets sidste Led er kjendeligt længere end 2det, men noget tyndere. Svøben er kortere end Skaftets sidste Led og bestaar af 4 Segmenter, hvoraf det 1ste er betydelig længere end de 3 øvrige tilsammen. Bisvøben er meget liden og omtrent af samme Udseende som hos foregaaende Art. 2det Par Folere har Skaftets 2 sidste Led omtrent af ens Længde og Svøben noget kortere end paa 1ste Par.

De 2 forreste Fodpar er saavel hvad Storrelse som Form angaar fuldkommen lige, temmelig rigeligt børstebesatte og med Haanden af oval Form og omtrent saa stor som det foregaaende Led.

3die og 4de Fodpar har Hofteleddet noget udvidet paa Midten, de øvrige successivt smalere, cylindriske og kun sparsomt børstebesatte.

De 3 bagerste Fodpar er af forholdsvis usædvanlig robust Bygning og alle omtrent lige lange, opnaaende neppe mere end $^1/_3$ af Totallængden. Endekloen er som sædvanlig kraftigt udviklet og leformig krummet.

Bagkroppens Vedhæng viser den sædvanlige Bygning.

Hannen er som sædvanlig af noget spinklere Form end Hunnen og desuden strax kjendelig ved den stærke og eiendommelige Udvikling af 2det Fodpar.

Dette ligner (Fig. 1 *a*) noget samme hos Hannen af *D. porrecta* Sp. Bate, idet Haanden er stærkt udvidet og sammentrykt samt nedentil forsynet med 2 skjævt fortilrettede tilspidsede Fortsatser, hvoraf den bagerste er størst og omtrent beliggende i Midten af Haandens Længde. Endekloen er særdeles kraftig og noget bugtet. Hele dette Fodpar, og navnlig Haandens nedre Rand, er besat med tætte og lange fine Børster.

Legemet er temmelig gjennemsigtigt, med kun svagt udpræget lys gulagtig Pigmentering.

The head has a form similar to that in the preceding species. The part, however, stretching over the point of attachment of the 1st pair of antennæ is more obtuse, and does not protrude quite so far.

Of the pedigerous segments, the 2 foremost are, as usual, smallest, all the succeeding ones about equal in size. The posterior division of the body is rather similar to that of the preceding species.

The epimera occur exceedingly small, squamiform, and all about uniform in development.

The eyes, contrary to what is the case in the preceding species, are very small, and do not project toward the sides. They are oval-rotund in form, somewhat oblique as to position, and furnished with a very light whitish-yellow pigment.

The antennæ are unusually robust, and furnished along the whole of their posterior margin with long and dense fascicles of bristles. The 1st pair are both longer and more powerful than the 2nd, and, when fully extended, quite equal the whole body in length. The 1st joint of the peduncle is about as long as the head, and thicker than the others; the terminal is appreciably longer than the 2nd, but a little more slender. The flagellum is shorter than the last joint of the peduncle, and composed of 4 segments, of which the 1st is considerably longer than are all the other three taken together. The secondary flagellum is very small, and about the same in appearance as that of the preceding species. The 2nd pair of antennæ have the 2 last joints of the peduncle well-nigh equal in length, and the flagellum somewhat shorter than on the 1st pair.

The 2 foremost pairs of legs are quite uniform, alike as regards size and form, rather abundantly furnished with bristles, and with the hand of an oval form, in size about equal to the preceding joint.

The 3rd and 4th pairs of legs have the basal joint somewhat dilated in the middle, the others being successively slender, cylindric, and but sparingly beset with bristles.

The 3 hindmost pairs of legs are remarkably robust in structure, and all about equally long, attaining scarcely more than one-third of the total length. The terminal claw is, as usual, powerfully developed, and falciform.

The abdominal appendages have the usual structure.

The *Male* exhibits, as usual, a somewhat more slender form than the female, and can, moreover, be at once recognized by the powerful and peculiar development of the 2nd pair of legs.

This pair (fig. 1 *a*) have a certain resemblance to those in the female of *D. porrecta* Sp. Bate, the hand being greatly expanded and compressed, as also, below, furnished with 2 oblique, forward-directed, acute prolations, of which the hindermost is the larger, and placed, longitudinally, about in the middle of the hand. The terminal claw is very powerful, and somewhat flexuous. The whole of this pair of legs, and more especially the lower margin of the hand, is beset with long and dense delicate bristles.

The body is well-nigh translucent, with but a very faint yellowish pigmentation.

Længden af den ægbærende Hun er 11^{mm}.

Forekomst. Nogle faa Exemplarer af denne characteristiske Art er under Expeditionen indsamlede paa 3 forskjellige Stationer. Af disse ligger den ene (Stat. 18) i betydelig Afstand fra Kysten NV af Stat; den anden (Stat. 31) tæt ud for Storeggen, og den 3die (Stat. 200) i Havet NV af Finmarken; Dybden fra 412 til 620 Favne. Da alle Stationer tilhører den kolde Area, er Arten utvivlsomt at betragte som en ægte arktisk Form.

Length of the ovigerous female 11^{mm}.

Occurrence. — A few individuals of this characteristic species were taken on the Expedition, at 3 different Stations. One of these (Stat. 18) lay at a considerable distance from the coast, north-west of Stat; the second (Stat. 31) in close proximity to the Storeggen Bank; and the third (Stat. 200) north-west of Finmark. Depth ranging from 412 to 620 fathoms. Each of these Stations having belonged to the cold area, the species must unquestionably be regarded as a true Arctic form.

71. **Dulichia macera**, G. O. Sars, n. sp.

(Pl. XVIII, Fig. 2, 2 *a*).

Dulichia macera, G. O. Sars, Crust. & Pycnogonida nova etc., No. 42.

Artscharacteristik. Legemet meget spinkelt, ubevæbnet, med tynde og forlængede Lemmer. Hovedet kortere end de 2 forreste Segmenter tilsammen, stumpt koniskt. Øinene rudimentære. Folerne stærkt forlængede, i den bagre Kant fint haarede. Bisvoben paa 1ste Par temmelig forlænget, 6-leddet. 2det Fodpar hos Hannen meget stort, med Basalleddet stærkt indknebet ved Roden, Haanden uden Borster, stærkt opsvulmet, aflang oval, forsynet ved Basis nedentil med en kort lige nedadrettet stumpt konisk Fortsats, fortil med et skarpt Hjorne. 2det og 3die Fodpar med smalt lineært Hofteled. De 3 bagerste Fodpar tynde og stærkt forlængede, med 3die Led længere end de 2 ydre tilsammen. Legemet gjennemsigtigt, farveløst. Længden $10^1/_2{}^{mm}$.

Findesteder. Stat. 190, 286.

Bemærkninger. Nærværende Art er let kjendelig ved den spinkle Kropsform og de stærkt forlængede Lemmer, de rudimentære Øine og 2det Fodpars eiendommelige Form hos Hannen.

Beskrivelse af Hunnen. Legemet er (se Pl. XVIII, Fig. 2) af usædvanlig smal og langstrakt Form, næsten lineært og uden enhver Bevæbning.

Hovedet er forholdsvis lidet, betydelig kortere end de 2 forreste Segmenter tilsammen, og af den sædvanlige stumpt koniske Form.

Af Forkropssegmenterne er det 1ste ganske kort, de øvrige alle omtrent af ens Storrelse, næsten cylindriske. Bagkroppen er smalere end Forkroppen og af normalt Udseende.

Epimererne viser den sædvanlige ringe Udvikling og skjældannede Form; dog er 2det Par kjendeligt større end de øvrige.

71. **Dulichia macera**, G. O. Sars, n. sp.

(Pl. XVIII, figs. 2, 2 *a*).

Dulichia macera, G. O. Sars, Crust. & Pycnogonida nova etc., No. 42.

Specific Character. — Body very slim, unarmed, with slender and elongate limbs. Head conico-obtuse, and shorter than the 2 foremost segments taken together. Eyes rudimentary. Antennæ greatly produced, furnished along posterior margin with delicate bristles. Secondary flagellum on 1st pair rather elongate, six-jointed. Second pair of legs in male very large, with basal joint greatly instricted at base, hand without bristles, exceedingly swollen, oblong-oval, having at base, below, a short conico-obtuse prolation, directed straight downward, and anteriorly a sharp corner; 2nd and 3rd pairs of legs with slender, well-nigh linear basal joint. The 3 hindmost pairs of legs slender, and greatly produced, with 3rd joint longer than the 2 outer ones taken together. Body translucent, colourless. Length $10^1/_2{}^{mm}$.

Locality. — Stats. 190, 286.

Remarks. — The present species may be readily distinguished by its slim form of body and greatly produced limbs, rudimentary eyes, as also the peculiar form characterizing the 2nd pair of legs in the male.

Description of the Female. — The body (see Pl. XVIII, fig. 2) is unusually slender and elongate in form, almost linear, and without any armature whatever.

The head is comparatively small, a good deal shorter than both the foremost segments taken together, and of the usual conico-obtuse form.

Of the free segments, the 1st is quite short, the rest almost equal in size, and well-nigh cylindric. The posterior division of the body is more slender than the anterior, and of normal appearance.

The epimera exhibit the usual slight development and squamiform shape; the 2nd pair, however, are appreciably larger than the others.

Øinene er ganske og aldeles rudimentære, idet der i deres Plads kun findes indenfor Hovedets Bedækning til hver Side en uregelmæssig Ansamling af hvidt Pigment.

Folerne er særdeles tynde og forlængede samt i den bagre Kant besatte med fine og tætte Børster, der dog ikke opnaar nogen betydelig Længde. 1ste Par var mere eller mindre incomplette paa de indsamlede Exemplarer, men synes at vise et lignende Længdeforhold til 2det Par som hos de øvrige bekjendte Arter. Deres 1ste Led er omtrent af Hovedets Længde og temmelig opsvulmet. Svøben (Fig. 2 *a*) bestod paa et af de indsamlede Exemplarer, der var en ung Hun, af 6 Led, og Bisvøben var forholdsvis temmelig forlænget og ligeledes 6-leddet. 2det Par Folere var paa det her afbildede Exemplar, en fuldt udviklet Han, vel saa lange som hele Legemet, og deres Svøbe betydelig længere end Skaftets sidste Led samt 5-leddet.

1ste Fodpar viser den sædvanlige Bygning. Haanden er forholdsvis meget liden, oval og neppe halvt saa stor som det foregaaende Led (Haandroden).

2det Fodpar er, som sædvanligt hos Hannerne af denne Slægt, særdeles kraftigt udviklet og næsten fuldkommen nogent eller børstelost. Basalleddet er ved Roden stærkt indknebet, men i Enden temmelig udvidet og her fyldt med kraftige Muskler. Haanden er meget stor og opsvulmet, aflang oval, og udmærket ved en eiendommelig formet lige nedadrettet kort Fortsats ved Basis i den nedre Kant; fortil løber den nedre Rand ud i et skarpt fremspringende Hjørne. Endekloen er kraftigt udviklet og stærkt leformigt krummet.

De 2 følgende Fodpar har Hofteleddet ganske smalt, lineært, de 3 ydre Led omtrent indbyrdes af ens Længde og kun sparsomt børstebesatte i den bagre Kant.

De 3 bagerste Fodpar er stærkt forlængede og særdeles tynde. Sidste Par var paa begge de erholdte Exemplarer afbrukket; de 2 øvrige er omtrent indbyrdes af ens Længde og har 3die Led langt og smalt, næsten dobbelt saa langt som de 2 sidste tilsammen.

Bagkroppens Vedhæng viser intet udmærkende i sin Bygning.

Legemet er hvidagtigt, gjennemsigtigt, uden Spor af nogen udpræget Pigmentering.

Længden af det største erholdte Exemplar er $10^1/_2{}^{mm}$.

Forekomst. 2 Exemplarer, en fuldt udviklet Han og en ganske ung Hun, af denne characteristiske Art blev under Expeditionen tagne, det ene N af Vesteraalen (Stat. 190), det andet i Havet mellem Beeren Eiland og Finmarken (Stat. 286); Dybden fra 447 til 870 Favne. Begge Stationer tilhører den kolde Area.

The eyes are in every sense rudimentary, since, in lieu of those organs, occurs within the covering of the head, on either side, merely an irregular aggregation of white pigment.

The antennæ are exceedingly slender and elongate, and furnished on the posterior margin with dense and delicate bristles, which, however, do not attain any considerable length. The 1st pair were more or less defective in the specimens obtained, but would appear, as regards length, to bear the same proportion to the 2nd pair as in the other known species. Their 1st joint is about as long as the head, and rather tumid. The flagellum (fig. 2 *a*) consisted in one of the specimens taken, a young male, of six articulations, and the accessory flagellum — relatively rather elongate — was likewise six-jointed. The 2nd pair of antennæ slightly exceed in the specimen here represented — a fully developed male — the whole body in length, and their flagellum is considerably longer than the last articulation of the peduncle, and five-jointed.

The 1st pair of legs exhibit the usual structure. The hand is comparatively very small, oval, and scarcely half as large as the preceding joint (carpus).

The 2nd pair of legs are, as usual, in the males of this genus, very powerfully developed, and well-nigh perfectly naked, or bristleless. The basal joint occurs at the origin very instricted, but is somewhat dilated at the extremity and filled out with powerful muscles. The hand is very large and swollen, oblongo-oval, and characterized by a short, peculiar prolation at the base of the lower margin, directed straight downward; anteriorly, the lower margin runs out as a sharp, projecting corner. The terminal claw is powerfully developed, and exhibits a prominent falciform curve.

The 2 succeeding pairs of legs have the basal joint quite slender, well-nigh linear, the outer 3 joints about equal in length, and but sparingly furnished with bristles along the posterior margin.

The 3 hindmost pairs of legs are greatly produced, and exceedingly slender. The last pair had in both specimens obtained unfortunately been broken off; the 2 others are nearabout equal in length, with the 3rd joint produced and slender, almost twice as long as the 2 last taken together.

The abdominal appendages do not exhibit anything characteristic in structure.

The body is whitish, translucent, without a trace of pigmentation.

Length of the largest specimen taken $10^1/_2{}^{mm}$.

Occurrence. — Two examples of this characteristic species — a fully developed male and a very young female — were obtained on the Expedition, the one north of Vesteraalen (Stat. 190), the other between Beeren Eiland and Finmark (Stat. 286); depth ranging from 447 to 870 fathoms. Both Stations lay in the cold area.

Trib. 3. *Caprellina.*

Fam. **Caprellidæ.**

Gen. **Caprella,** Lamk., 1818.

Syst. anim. sans vertebres pg. 165.

72. Caprella microtuberculata, G. O. Sars, n. sp.

(Pl. XVIII, Fig. 3. 3 *x—a*).

Caprella microtuberculata, G. O. Sars, Crust. & Pycnogonida nova etc., No. 43.

Artscharacteristik. Legemet smalt og forlænget. De 4 forreste Segmenter hos Hunnen forsynede med smaa spredte Knuder, hos Hannen næsten ganske glatte. 5te Segment hos begge Kjøn forsynet oventil med 6 parvis stillede Knuder, 2 fortil og 4 bagtil; 6te og 7de hvert med 4 i en Tværrad ordnede større Knuder. De 2 forreste Segmenter hos Hannen mere forlængede end hos Hunnen; 1ste Segment hos begge kortere end 2det. Øinene smaa, runde, med rødt Pigment. 1ste Par Følere stærkt forlængede, med Svøben bestaaende af talrige korte Led; 2det Par neppe $^1/_3$ saa lange og bagtil tæt børstebesatte. 2det Fodpar næsten af ens Udseende hos begge Kjøn, med stor oval Haand, der nedentil er forsynet med 2 smaa ved et større Mellemrum skilte Tænder og foran dem med et skarpt udtrukket Hjørne. De 3 bagre Fodpar kraftigt udviklede, med sidste Led eller Haanden udvidet ved Basis og længere end de 2 foregaaende tilsammen. Legemet gjennemsigtigt, marmoreret med større brunrøde Pigmentpletter. Længden 12—17^{mm}.

Findesteder. Stat. 315. 336.

Bemærkninger. Af de tidligere bekjendte Arter ligner denne mest *C. linearis* Lin., men skiller sig strax ved de betydelig stærkere forlængede 1ste Par Følere, 2det Fodpars Form og den forskjellige Farvetegning.

Beskrivelse af Hunnen. Legemet er (se Pl. XVIII, Fig. 3) af den sædvanlige smale og lineære Form og viser paa Rygsiden en Del meget smaa, men temmelig regelmæssigt ordnede Knuder, der navnlig paa det bagre Parti er tydeligt fremtrædende.

Hovedet er meget lidet, afrundet, uden Pandehorn og viser oventil 2 meget smaa, jevnsides stillede Knuder. Det forbinder sig med Kroppen ved en meget skjæv, skraat fortilrettet Sutur.

Af Kropssegmenterne er det 1ste forholdsvis kort og viser oventil ligeledes 2 smaa Knuder, der har sin Plads ved den bagre Del. 2det Segment er næsten dobbelt saa langt og af noget tendannet Form samt meget bevægeligt

Trib. 3. *Caprellina.*

Fam. **Caprellidæ.**

Gen. **Caprella,** Lamk., 1818.

Syst. anim. sans vertebres. p. 165.

72. Caprella microtuberculata, G. O. Sars. n. sp.

(Pl. XVIII. fig. 3, 3 *x—a*).

Caprella microtuberculata, G. O. Sars, Crust. & Pycnogonida nova etc., No. 43.

Specific Character. — Body slender and elongate. The 4 anterior segments in female furnished with small scattered protuberances, in male almost quite smooth. Fifth segment having above in both sexes 6 protuberances, arranged in pairs, 2 anterior and 4 posterior; 6th and 7th each with 4 larger ones, arranged in a transverse series. The 2 anterior segments in male more elongate than in female; 1st segment in both sexes shorter than 2nd. Eyes small, round, with red pigment. First pair of antennæ greatly produced, with flagellum consisting of numerous short articulations; 2nd pair scarcely one-third as long, and posteriorly having a dense armature of bristles. Second pair of legs of well-nigh uniform appearance in both sexes, with large oval hand, furnished below with 2 small teeth, separated comparatively by a wide interspace, and exhibiting anteriorly a sharply produced corner. The 3 posterior pairs of legs powerfully developed, with last joint, or hand, expanded at base, and longer than the 2 preceding ones taken together. Body translucent, marbled over with comparatively large brownish-red patches of pigment. Length 12—17^{mm}.

Locality. — Stats. 315, 336.

Remarks. — Of the previously known species, this approximates closest *C. linearis* Lin., but admits at once of being distinguished by the much more produced 1st pair of antennæ, the form of the 2nd pair of legs, and the different colouring.

Description of the Female. — The body (see Pl. XVIII. fig. 3) has the usual slender and well-nigh linear form, exhibiting on the dorsal side a number of very small and comparatively in regular arrangement disposed protuberances, — distinctly prominent, more especially over the posterior part.

The head is very small, rounded, without any rostrum, and exhibits above 2 very diminutive protuberances, placed side by side. It is connected with the body by an exceedingly oblique, forward-directed suture.

Of the body-segments, the 1st is comparatively short, likewise with 2 small protuberances, placed above on the posterior part. The 2nd segment is almost twice as long, and somewhat fusiform in appearance, as also very movably

forbundet saavel med det foregaaende som efterfølgende Segment. Paa Rygsiden tælles 6 parvise Knuder foruden en Del meget smaa saadanne. De 2 følgende Segmenter er, navnlig hos den ægbærende Hun, noget bredere end de øvrige og indbyrdes fastere forbundne, dannende tilsammen ligesom et eget Kropsafsnit, fra hvis Underside den af 4 store mod hinanden bøiede Plader bestaaende Brystpose rager frem; ethvert af disse Segmenter viser ligeledes oventil 6 mere fremtrædende Knuder. 5te Segment, der har en meget bevægelig Articulation med det foregaaende, er noget længere end dette, smalest fortil og successivt noget tykkere mod den bagre Ende. Paa Rygsiden af samme findes som paa de 3 foregaaende Segmenter 6 parvis ordnede Knuder, hvoraf de 2 er beliggende helt fortil, de 4 andre nærmere den bagre Ende. De 2 sidste Kropssegmenter endelig er ganske korte, stærkt fortykkede noget bag Midten og hvert forsynet med 4 større, næsten pigformige Knuder, 2 dorsale og 4 laterale, dannende tilsammen en buet Tværrad.

Bagkroppen er som hos Slægtens øvrige Arter aldeles rudimentær, kun dannende et lidet knudeformigt Appendix ved Enden af sidste Kropssegment.

Øinene er meget smaa, runde, med mørkerødt Pigment, der kun indtager den centrale Del af Øiet.

1ste Par Følere er usædvanlig stærkt forlængede, næsten af hele Legemets Længde og meget tynde. Af Skaftets Led er det 2det længst, de 2 øvrige omtrent indbyrdes af ens Længde. Svøben er næsten dobbelt saa lang som Skaftet og bestaar af et stort Antal (indtil 26) korte, med fine og korte Børster besatte Led.

2det Par Følere er kun lidet længere end 1ste Pars Skaft og i den bagre Kant besat med lange og stærke Børsteknipper. Svøben bestaar som sædvanlig af et længere Segment og et meget kort Endeled.

Mundregionen er fuldkommen ubedækket og springer frem umiddelbart bag 2det Par Følleres Fæste. De stærke Kindbakker mangler som hos Slægtens øvrige Arter ethvert Spor af Palper.

1ste Fodpar (Fig. 3 *a*), der udspringer helt fortil fra Begyndelsen af 1ste Kropssegment, næsten midt under Hovedet, er af den sædvanlige Bygning, med den ydre Del stærkt sammentrykt og Haanden bredest ved Basis, hvor den nedentil danner et vinkelformigt fremspringende Hjørne.

2det Fodpar er langt kraftigere udviklet og udspringer fra den forreste Trediedel af 2det Segment. Basalleddet er noget udvidet mod Enden og forsynet med en skarp, i en tilspidset Fortsats udløbende Kjøl. 3die Led gaar nedad ud i et skarpt Hjørne. 4de Led eller Haandroden er særdeles lidet, neppe synligt. Derimod er det følgende Afsnit eller Haanden mægtigt udviklet, længere end alle de

connected both with the preceding and the succeeding segments. On the dorsal surface, may be counted 6 pairs of protuberances, exclusive of a number of very small ones. The 2 succeeding segments, more particularly in the ovigerous female, are somewhat broader than the rest, and more firmly connected one with the other, constituting, as it were, a separate section of the body, from the under surface of which the marsupium, composed of 4 large plates bent in one against the other, is seen to project; these segments likewise exhibit above as many as 6 rather prominent protuberances each. The 5th segment, which is connected with the preceding by an exceedingly mobile articulation, attains a somewhat greater length than the latter, is slenderest anteriorly, and gradually becomes a trifle thicker toward the posterior extremity. On its dorsal face, are observed, as on that of the 3 preceding segments, 6 protuberances, arranged in pairs, of which 2 occur far in front, the remaining 4 near the posterior end. Finally, the 2 last body-segments are quite short, thickly incrassated a little posterior to the middle, and each furnished with 4 large, well-nigh spiniform protuberances — 2 dorsal and 2 lateral, forming together a curving transversal series.

The posterior division of the body occurs, as in the other species of the genus, quite rudimentary, constituting merely a small tuberculiform appendix at the extremity of the terminal body-segment.

The eyes are very small, round, with a dark-red pigment occupying the central portion only of the eye.

The 1st pair of antennæ are remarkably produced, equalling almost the whole body in length, and very slender. Of the joints of the peduncle, the 2nd is longest; the 2 others are about equal in length. The flagellum attains nearly double the length of the peduncle, and consists of a large number of articulations (as many as 26), beset with delicate and short bristles.

The 2nd pair of antennæ are but very little longer than the peduncle of the 1st pair, and furnished along the posterior margin with long and powerful fascicles of bristles. The flagellum consists as usual of a comparatively long segment and a very short terminal joint.

The buccal region is wholly uncovered, and juts out immediately posterior to the origin of the 2nd pair of antennæ. As in the other species of the genus, the powerful mandibles do not exhibit the slightest trace of a palp.

The 1st pair of legs (fig. 3 *a*), originating on the foremost part of the 1st body-segment, almost immediately under the middle of the head, have the usual structure, the outer part being strongly compressed and the hand broadest at the base, where it forms below a projecting angular corner.

The 2nd pair of legs are much more powerfully developed, and issue from the anterior third of the 2nd segment. The basal joint is somewhat dilated towards the extremity, and furnished anteriorly with a sharp carina, jutting out as an acute prolation. The 3rd joint protends below as a sharp corner. The 4th joint, or carpus, is exceedingly small, well-nigh invisible. On the other hand, the succeeding

ovrige Led tilsammen og af oval Form, med den forreste Rand jevnt buet, den bagre næsten lige og forsynet med 3 smaa tandformige Fremspring, hvoraf de 2 yderste staar tæt sammen og ved et betydeligt Mellemrum er skilte fra det overste. Endekloen er særdeles stærk, leformig krummet, og lægger sig, naar den indboies, med Spidsen ind mod det overste af de ovenomtalte tandformige Fremspring.

De til 3die og 4de Segment fæstede Gjelleblade er forholdsvis smaa og smale og rager fortil og bagtil noget ud over Brystposen.

De 3 bagre Fodpar er kraftigt udviklede og tiltager successivt noget i Længde bagtil. Sidste Led er som sædvanlig subcheliformt eller danner et Slags Haand, med en Afsats ved Basis i den forreste Kant, mod hvilken Endekloen kan indboies.

Hunnen (se Fig. 3 *x*) er af forholdsvis spinklere og mere langstrakt Form end Hunnen og har de 4 forreste Segmenter næsten fuldkommen glatte eller kun med yderst svage Spor af de Knuder, som findes her hos Hunnen, hvorimod de 3 bagerste Segmenter viser en lignende Bevæbning. Af Segmenterne er navnlig de 2 forreste kjendelig stærkere forlængede end hos Hunnen, dog saaledes, at det indbyrdes Forhold mellem begge er temmelig uforandret.

1ste Par Folere skiller sig fra samme hos Hunnen derved, at Skaftets Led er noget fortykkede paa Midten, sammentrykte og i Kanterne fint ciliered.

2det Fodpar, der ellers pleier at være meget forskjelligt hos begge Kjon, er her næsten noiagtig af samme Udseende som hos Hunnen, alene med den Forskjel, at Basalleddet er noget mere forlænget. Derimod udspringer det ikke som hos Hunnen fra det forreste Parti af 2det Segment, men kjendeligt bag Midten af dets Længde.

Legemet er hos begge Kjon temmelig gjennemsigtigt, gulagtigt, og navnlig hos Hunnen marmoreret med større uregelmæssige morkebrune Shatteringer, der delvis danner afbrudte Tværbaand over Kroppen.

Længden af den ægbærende Hun er 12^{mm}. Hannen er noget større og opnaar en Længde af 17^{mm}.

Forekomst. Nogle faa Exemplarer af denne Art blev under Expeditionens sidste Togt tagne paa 2 forskjellige Stationer, den ene (Stat. 315) beliggende i Havet NV af Beeren Eiland, den anden (Stat. 336) nær Sydpynten af Spitsbergen. Dybden fra 70 til 180 Favne. Exemplarerne fandtes fastsiddende paa Hydroider optagne med Bundskraben fra klippefuld Bund.

Skjondt ingen af disse Stationer egentlig tilhorer den kolde Area, er man dog af Stationernes høie nordlige Brede berettiget til at betragte Arten som en arktisk Form.

section, or hand, is prodigiously developed, being longer than all the other joints taken together, oval in form, with the anterior margin evenly arched, the posterior almost straight and furnished with 3 small dentiform projections, of which the 2 outer ones occur close together, separated by a considerable interspace from the uppermost. The terminal claw is remarkably powerful, falciform, and impinges, when bent in, against the uppermost of the aforesaid dentiform projections.

The branchial lamellæ attached to the 3rd and 4th segments are comparatively small and thin, projecting, both anteriorly and posteriorly, over the marsupium.

The 3 posterior pairs of legs are powerfully developed, and increase somewhat in length posteriorly. The last joint is, as usual, subcheliform, and forms, as it were, a hand, with a ledge at the base on the anterior margin, against which the terminal claw admits of being bent in.

The *Male* (see fig. 3 *x*) has comparatively a more slender and elongate form than the female, the 4 anterior segments being almost perfectly smooth, or exhibiting but very faint traces of the tubercles observed there in the female, whereas the 3 hindmost segments are furnished with a similar armature. Of the segments, the 2 foremost occur in particular more produced than in the female, yet in such manner that the relation between the two is very much the same.

The 1st pair of antennæ differ from those of the female in the joints of the peduncle being somewhat incrassated along the middle, compressed, and finely ciliated on the edges.

The 2nd pair of legs, which, as a rule, are very different in the two sexes, have almost exactly the same appearance as in the female, the only deviation consisting in the basal joint being a trifle more elongate. This articulation does not however originate from the foremost part of the 2nd segment as in the female, but appreciably posterior to its longitudinal middle.

The body is in both sexes well-nigh translucent, yellowish, and, more particularly in the female, relieved with large, irregular, dark-brown marbled shadings, that form in part transversal bands across the body.

Length of the ovigerous female 12^{mm}. The male is somewhat larger, attaining a length of 17^{mm}.

Occurrence. — A few examples of this species were taken on the last cruise of the Expedition, at 2 different Stations, the one (Stat. 315) north-west of Beeren Eiland, the other (Stat. 336) near the southern extremity of Spitzbergen: depth ranging from 70 to 180 fathoms. The specimens were found attached to Hydroids, brought up in the dredge from a rocky bottom.

Though neither of the said Stations strictly belonged to the cold area, their high northern latitude warrant our assuming the species to be an Arctic form.

73. Caprella spinosissima, Norman.

(Pl. XVIII, Fig. 4, *a—l, x*).

Caprella spinosissima, Wyville Thomson. The Depths of the Sea pg. 126.
Caprella horrida, G. O. Sars. Prodromus descript. Crust. & Pycnog. etc., No. 137.

Artscharacteristik. Legemet forholdsvis kort og undersætsigt, navnlig hos Hunnen; Rygsiden tæt bevæbnet med talrige tilspidsede Pigge, hvoraf nogle udmærker sig ved betydelig Længde; de 2 sidste Kropssegmenter ganske korte, hvert kun bevæbnet med 4 Pigge. Øinene smaa, punktformige. 1ste Par Følere hos Hannen betydelig stærkere forlængede end hos Hunnen; Skaftets sidste Led længere end 1ste og Svøben kortere end Skaftet; 2det Par bagtil forsynet med stærke Børsteknipper, hos Hunnen længere end 1ste Pars Skaft. 2det Fodpar hos Hunnen af middelmaadig Størrelse, med oval Haand, bagtil forsynet med 4 smaa tandformige Fremspring, de 3 yderste tæt sammentrængte og ved et længere Mellemrum skilte fra det 4de; hos Hannen betydelig kraftigere udviklet, med Haanden særdeles stor, aflang, i begge Kanter tæt cilieret og bagtil forsynet med 2 dybe Indsnit, begrændsede af lancetformige Flige, hvoraf den midterste er størst. De bagre Fodpar af sædvanligt Udseende. Farven ensformig graahvid. Længden 14—20^{mm}.

Findesteder. Stat. 18, 124, 137, 164, 200, 343.

Bemærkninger. Jeg har tidligere opført denne characteristiske Art under et nyt Navn, *horrida*, for at undgaa Forvexling med Stimpsons *Ægina spinosissima*. Da imidlertid denne sidste er identisk med den noget tidligere af Bell beskrevne *Caprella spinifera* og saaledes maa bære det sidstnævnte Artsnavn, ser jeg ikke længere nogen Grund til at forandre det af Norman for den her omhandlede Art foreslaaede Navn, som derfor her bibeholdes.

Beskrivelse af Hunnen. Legemet er (se Pl. XVIII, Fig. 4) i Sammenligning med de øvrige Arter af Slægten af usædvanlig kort og undersætsig Form og navnlig hos de ægbærende Hunner noget nedtrykt, især i det midterste Parti. Hele Dyrets Rygside er tæt besat med talrige skarpe opadrettede Pigge, hvoraf nogle udmærker sig ved betydelig Længde. Disse sidste er ordnede parvis langs Midtlinien saaledes, at der findes et eller to Par paa hvert Segment. Desuden bemærkes en Del større laterale Pigge, hvoraf navnlig de 2 ligeover Brystposen ved Basis af Gjellebladene udgaaende er iøinefaldende.

Hovedet er meget lidet, fortil afstumpet og oventil ligesom den øvrige Del af Rygsiden tæt besat med Pigge, hvoraf 2 udmærker sig ved større Længde.

73. Caprella spinosissima, Norman.

(Pl. XVIII, fig. 4, *a—l, x*).

Caprella spinosissima, Wyville Thomson. The Depths of the Sea. p. 126.
Caprella horrida, G. O. Sars, Prodromus descript. Crust. & Pycnog. etc., No. 137.

Specific Character. — Body comparatively short and thickset, more particularly in female; dorsal face densely armed with acute spikes, some of which are characterized by considerable length; the 2 last body-segments quite short, each furnished with only 4 spikes. Eyes small, punctiliform. First pair of antennæ in male much more elongate than in female; last joint of peduncle longer than 1st, flagellum shorter than peduncle; 2nd pair armed posteriorly with fascicles of strong bristles, in female longer than peduncle of 1st pair. Second pair of legs in female of moderate size, with hand oval, and posteriorly having 4 small dentiform prolations, the 3 outermost close together, and separated by a rather wide interspace from the 4th; in male much more powerfully developed, with hand remarkably large, oblong, densely ciliate along both margins, and exhibiting posteriorly 2 deep incisions, defined by lanceolate lappets, the median the largest. Posterior pairs of legs of usual appearance. Colour a uniform greyish-white. Length 14—20^{mm}.

Locality. — Stats. 18, 124, 137, 164, 200, 343.

Remarks. — On a former occasion, I recorded this characteristic species under a new name, viz. *horrida*, to prevent its being confounded with Stimpson's *Ægina spinosissima*. Meanwhile, as the latter is identical with the form *Caprella spinifera*, described somewhat earlier by Bell, and must, therefore, bear the last-mentioned specific designation, I see no reason for suggesting any change in the name proposed by Norman for the species treated of here: wherefore it is now retained.

Description of the Female. — The body (see Pl. XVIII, fig. 4), in comparison with the other species genus, is unusually short and thickset in form, as also, of the more particularly in ovigerous females, somewhat depressed, especially throughout the medial part. The whole dorsal face of the animal is densely beset with acute, upturned spikes, some distinguished by very considerable length. The latter are arranged in pairs along the median line, in such manner that one or two pairs occur on each segment. Moreover, a number of lateral-directed spikes may be also observed, of which in particular 2, just above the marsupium, and issuing at the base of the branchial scales, are the most conspicuous.

The head is very small, obtuse anteriorly, and above, in common with the rest of the dorsal face, densely beset with spikes, 2 of which are characterized by considerable length.

Hvad Længdeforholdet af de forskjellige Kropssegmenter angaar, saa er det 1ste som sædvanlig ganske kort, de 4 følgende omtrent indbyrdes af ens Længde. De 2 bagerste er meget smaa og kun forsynede hvert med 4 i en Tværrad stillede Pigge.

Øinene er særdeles smaa, næsten punktformige og synes at have Synselementerne ufuldstændigt udviklede.

1ste Par Følere er forholdsvis korte, paa langt nær ikke opnaaende Legemets Længde. Af Skaftets Led er det 2det som sædvanlig længst; det 3die er kun lidet kortere og betydelig længere end 1ste. Svøben er kjendelig kortere end Skaftet og kun sammensat af 12 Led.

2det Par Følere er længere end 1ste Pars Skaft og bagtil forsynet med stærke Børsteknipper, forøvrigt af sædvanlig Bygning.

Overlæben (Fig. 4 *a*) danner et temmelig stærkt kuppelformigt Fremspring foran Mundaabningen og har den mod samme vendte Rand indbøgtet i Midten.

Underlæben (Fig. 4 *b*) bestaar af 2 Par over hinanden liggende Lapper, hvoraf de indre er simpelt afrundede og tæt sammenstillede, medens de betydelig større ydre Lapper er stærkt divergerende og øxeformigt udvidede i Enden.

Kindbakkerne (Fig. 4 *c*) er korte og tykke samt uden Spor af Palper. Det forreste tandede Parti er delt i 2 Flige, bag hvilke er fæstede 3 stive Børster. Tyggeknuden er bred og tyk samt viser i Enden 3 stumpe Spidser.

1ste Par Kjæver (Fig. 4 *d*) synes at mangle den sædvanlige Basalplade. Tyggelappen er stærkt indadkrummet og paa den lige afskaarne Ende bevæbnet med flere stærke Torner. Palpen har sidste Led sammentrykt og noget buet samt i den ydre Kant besat med fine Haar, i Enden med nogle meget smaa Torner.

2det Par Kjæver (Fig. 4 *e*) har den indre Lap betydelig bredere, men kortere end den ydre; begge Lappe er ved Enden besatte med fine Børster.

Kjævefødderne (fig. 4 *f*) er af betydelig Størrelse, ved Basis sammenvoxne og forsynede med de 2 sædvanlige Tyggelappe, som dog kun er lidet udviklede, navnlig den indre. Palpen er meget stor, fødformig, med sidste Led indadbøiet og ved Enden tæt børstebesat; Endekloen temmelig lang og kun svagt krummet.

1ste Fodpar (Fig. 4 *i*) er af den sædvanlige stærkt sammentrykte Form og noget plumpere bygget end hos foregaaende Art, med Haanden næsten ligesaa bred som lang.

2det Fodpar (se Fig. 4) er af middelmaadig Størrelse og ligner noget samme hos foregaaende Art, dog med den Forskjel, at Haanden er noget bredere og har et tandformigt Fremspring mere i den bagre Kant ved Enden.

As regards the longitudinal proportion between the several body-segments, the 1st is, as usual, quite short, the 4 succeeding ones being about equal in length. The 2 posterior are very small, and furnished merely with 4 spikes, arranged in a transverse series.

The eyes are exceedingly small, well-nigh punctiliform, and would appear to have the visual elements imperfectly developed.

The 1st pair of antennæ are comparatively short, — far from attaining the length of the body. Of the joints of the peduncle, the 2nd occurs, as usual, longest; the 3rd is but little shorter, and considerably longer than the 1st. The flagellum is appreciably shorter than the peduncle, and composed of only 12 articulations.

The 2nd pair of antennæ are longer than the peduncle of the 1st pair, and posteriorly furnished with fascicles of powerful bristles; for the rest, exhibiting the usual structure.

The labrum (fig. 4 *a*) forms a rather prominent, dome-shaped prolation, anterior to the buccal orifice, and has the margin directed toward the latter, incurved in the middle.

The labium (fig. 4 *b*) consists of 2 pairs of superposed lobes, the inner pair simple rounded and close together, whereas the much larger outer lobes occur widely diverging and securiform-expanded at the extremity.

The mandibles (fig. 4 *c*) are short and thick, without a trace of palps. The foremost, dentiferous, part is divided into two lappets, behind which issue 3 stiff bristles. The molar protuberance is broad and thick, exhibiting at the end 3 obtuse points.

The 1st pair of maxillæ (fig. 4 *d*) would appear to want the usual basal plate. The masticatory lobe is sharply incurved, and bears at the vertically truncate extremity several strong spines. The palp has the last joint compressed, and somewhat arched, as also delicately ciliate along the outer margin, and beset at the extremity with a few very small spines.

The 2nd pair of maxillæ (fig. 4 *e*) have the inner lobe considerably broader than, but not so long as, the outer, and both are furnished at the extremity with delicate bristles.

The maxillipeds (fig. 4 *f*) attain a very considerable size, are connate at the base, and furnished with the 2 usual masticatory lobes, which, however, exhibit but a slight development, in particular the inner one. The palp is very large, pediform, with the last articulation bending inward, and, at the extremity, densely bristle-beset; the terminal claw is rather long, and but slightly curved.

The 1st pair of legs (fig. 4 *i*) have the usual very compressed form, and exhibit a somewhat clumsier structure than in the preceding species, the hand occurring almost as broad as long.

The 2nd pair of legs (see fig. 4) are of moderate size, and bear some resemblance to those in the preceding species, save however that the hand is a trifle broader, and has one more dentiform prolation on the posterior margin at the extremity.

De 3 bagre Fodpar er noget mindre kraftigt udviklede end hos foregaaende Art, forovrigt af den sædvanlige Bygning.

Den rudimentære Bagkrop (se Fig. 4 *g—h*) danner kun et yderst lidet knudeformigt Fremspring ved Enden af sidste Kropssegment mellem Roden af sidste Fodpar. Ved nøiere Undersøgelse viser dette sig at bestaa ligesom af 3 Valvler, en dorsal og 2 ventrale. Disse indeslutter mellem sig Endeafsnittet af Tarmen, der munder paa Spidsen med en trekantet Aabning. Paa den nedre Side af de ventrale Valvler sees 2 smaa knudeformige Fortsatser, der forestiller Rudimenter af et Par Lemmer.

Hannen (Fig. 4 *x*) er betydelig større end Hunnen og af mere langstrakt Kropsform. Navnlig er de 2 forreste Segmenter kjendelig stærkere forlængede. Legemets Bevæbning er derimod lidet afvigende, skjøndt Piggene idethele synes noget mindre fremtrædende.

1ste Par Følere er betydelig stærkere forlængede end hos Hunnen og mere end dobbelt saa lange som 2det Par. Skaftets 2 ydre Led er indbyrdes næsten af ens Størrelse og Svøben neppe halvt saa lang som Skaftet.

2det Fodpar, der ligesom hos Hannen af foregaaende Art udspringer fra den bagre Del af 2det Segment, er temmelig uligt samme hos Hunnen. Haanden er særdeles stor og af aflang Form samt i begge Kanter tæt besat med fine Cilier. Griberanden viser i Midten 2 dybe Indsnit begrændsede af 2 triangulære Fortsatser, hvoraf navnlig den forreste er meget stor. Foran det forreste og dybeste Indsnit og lige under Endeklóens Insertion gaar Haanden ud i 2 spidse Hjørner.

Bagkroppen (Fig. 4 *k—l*) er forholdsvis noget mindre rudimentær end hos Hunnen, og de 2 knudeformige Appendices paa den nedre Side er her udviklede til et Par tydelige 2-leddede og tæt børstebesatte Lemmer. Umiddelbart foran Bagkroppen udgaar fra sidste Kropssegments Bugside 2 koniske Fortsatser, som forestiller de ydre Kjønsvedhæng.

Farven er hos begge Kjøn enstormig graahvid, uden nogen tydelig Pigmentering.

Længden af den ægbærende Hun er 14^{mm}. Hannen opnaar en Længde af indtil 20^{mm}.

Forekomst og Udbredning. Denne characteristiske Art er under Expeditionen observeret paa ikke mindre end 6 forskjellige Stationer, alle tilhørende den kolde Area; Dybden fra 350 til 743 Favne. Paa enkelte af disse Stationer forekom den i store Mængder. Det sydligste Punkt, hvor den er bleven observeret er i Færø-Shetlands-Renden, paa hvilken Lokalitet den først blev opdaget under den engelske Lightning-Expedition, det nordligste Punkt (Stat. 343) ligger i Havet Vest af Spitsbergens Sydpynt.

The 3 posterior pairs of legs are somewhat less powerfully developed than is the case with those in the preceding species; for the rest, of the usual structure.

The rudimentary abdominal division of the body (fig. 4 *g—h*) forms but an exceedingly small tuberculiform projection, at the extremity of the last body-segment, between the bases of the last pair of legs. On closer examination, this projection is found to consist, as it were, of 3 valves, one dorsal and 2 ventral. These valves enclose the terminal section of the intestine, which opens at the extremity with a triangled orifice. On the lower surface of the ventral valves, are seen 2 small, tuberculiform prolations, that represent the rudiments of one or two limbs.

The Male (fig. 4 *x*) is considerably larger than the female, and exhibits a more elongate form of body. The 2 foremost segments are in particular appreciably more produced. On the other hand, the armature of the body deviates but little, though the spikes would, on the whole, appear to be less prominently developed.

The 1st pair of antennæ are much more elongate than in the female, and upwards of double the length of the 2nd pair; the 2 outer joints of the peduncle occur almost equal in length, and the flagellum is scarcely half as long as the peduncle.

The 2nd pair of legs, which, as in the male of the preceding species, issue from the posterior part of the 2nd segment, differ considerably from those in the female. The hand is exceedingly large, oblong in form, and delicately ciliate along both margins. The palmar margin exhibits in the middle 2 deep incisions, bounded by 2 triangular projections, of which the foremost in particular is very large. Anterior to the foremost and deepest incison, and immediately beneath the origin of the terminal claw, the hand juts forth as 2 sharp corners.

The posterior division of the body (fig. 4 *k—l*) is, by comparison, somewhat less rudimentary than in the female, and the 2 tuberculiform appendages on the lower side are developed as a pair of distinct two-jointed and densely bristle-beset limbs. Immediately anterior to the posterior division of the body, proceed from the ventral surface of the last body-segment 2 conical prolations, that represent the outer generative appendages.

Colour in both sexes a uniform greyish-white, without distinct pigmentation.

Length of the ovigerous female 14^{mm}. The male attains a length of 20^{mm}.

Occurrence and Distribution. — This characteristic species was taken on the Expedition at as many as 6 different Stations, all belonging to the cold area. Depth ranging from 350 to 743 fathoms. At several of these Stations the animal occurred in great abundance. The most southerly point at which it has hitherto been observed is the Færø-Shetland channel, the locality where the form was first met with (on the English "Lightning" Expedition); the most northerly point (Stat. 343) lay some distance west of the southern extremity of Spitzbergen.

Artens for Tiden bekjendte Udbredningsfelt er herefter det ostlige Afhæld mod Nordhavets store Dyb fra den 62de til op mod den 77de Bredegrad.

Gen. 2. **Ægina**, Kröyer, 1843.

Nat. Tidsskrift 1 R. Bd. 4.

74. Ægina spinifera, Bell.

(Pl. XVIII, Fig. 5, *a—c, x*).

Caprella spinifera, Bell, i Appendix to Belcher's last of Arct. Voy., pg. 407, Tab. 35, Fig. 2, 1855.

Ægina spinosissima, Stimpson, Marine Invertebrata of Grand Manan, pg. 45, 1857.

Ægina spinosissima, G. O Sars, Prodromus descript. Crust. & Pycnog., No. 135.

Artscharacteristik. Legemet forlænget og smalt, oventil bevæbnet med en Del regelmæssigt ordnede tilspidsede Pigge, hvoraf de største danner en dobbelt Rad langs efter Ryggen, 3—4 Par paa hvert Segment, naar undtages de 2 sidste. Hovedet oventil med 2 parvis ordnede Pigge. Ved Basis af 2det Fodpar og de 2 Par Gjelleblade til hver Side en stærk lateral Pig. Øinene saa, runde. 1ste Par Følere næsten af Legemets Længde, med Skaftets sidste Led længere end 1ste, Svøben noget kortere end Skaftet; 2det Par særdeles smaa og tynde, meget kortere end 1ste Pars Skaft og kun besat med korte Haar. 2det Fodpar kraftigt udviklet, af lignende Form hos begge Kjon, Haanden aflang, sammentrykt, med 3 lancetformige Flige i den bagre Kant, begrændsende 2 vinkelformige Indsnit; Spidsen af Haanden over Endekloens Fæste udtrukket i et skarpt Hjorne. Hannen noget mere langstrakt end Hunnen og med mindre skarpt udpræget Pigbevæbning. Legemet gjennemsigtigt, med morkere Shatteringer. Længden indtil 38^{mm}.

Findesteder. Stat. 48, 336.

Bemærkninger. Den af Bell i Belcher's Reise beskrevne *Caprella spinifera* er utvivlsomt identisk med nærværende Art; ligeledes er den noget senere af Stimpson anførte *Ægina spinosissima* samme Art. Derimod er Boeck's *Ægina echinata* aabenbart forskjellig baade ved Legemets Bevæbning og 2det Fodpars Bygning.

Beskrivelse af Hunnen. Legemet er (se Pl. XVIII, Fig. 5) smalt og langstrakt, næsten cylindriskt og oventil

Hence, the tract throughout which the species is at present known to occur, comprises the eastern slope of the sea-bed, shelving down toward the great deeps of the Northern Ocean, — from the 62nd to well-nigh the 77th parallel of latitude.

Gen. 2. **Ægina**, Kröyer, 1843.

Nat. Tidsskrift, 1 R., Bd.

74. Ægina spinifera, Bell.

(Pl. XVIII, fig. 5, *a—c, x*).

Caprella spinifera, Bell, in the Appendix to Belcher's last Arctic Voyage, p. 407, Pl. 35, fig. 2, 1855.

Ægina spinosissima, Stimpson, Marine Invertebrata of Grand Manan, p. 45, 1857.

Ægina spinosissima, G. O. Sars, Prodromus descript. Crust. & Pycnog., No. 135.

Specific Character. — Body elongate and slender, armed above with a number of acute spikes in regular arrangement, of which the largest constitute a double series disposed along the back, — 3 or 4 pairs on every segment, except the 2 last ones. Head, above, bearing 2 spikes, arranged as a pair. At base of 2nd pair of legs and the 2 pairs of branchial scales, on either side a strong lateral spike. Eyes small, round. First pair of antennæ attaining well-nigh length of body, with last joint of peduncle longer than 1st, flagellum somewhat shorter than peduncle; 2nd pair exceedingly small and slender, much shorter than peduncle of 1st, and clothed merely with short hairs. Second pair of legs powerfully developed, of a similar form in both sexes, hand oblong, compressed, with 3 lanceolate lappets on posterior margin, marking off 2 angular incisions; point of hand above attachment of terminal claw produced to a sharp corner. Male somewhat more elongate than female, and with armature of spikes less prominently developed. Body translucent, relieved with darker shadings. Length reaching 38^{mm}.

Locality. — Stats. 48, 336.

Remarks. — The form described as *Caprella spinifera* by Bell, in Belcher's Voyage, is unquestionably identical with the present species; moreover, this also applies to *Ægina spinosissima*, recorded somewhat later by Stimpson. On the other hand, Boeck's *Ægina echinata* differs obviously alike in the armature of the body and the structure of the 2nd pair of legs.

Description of the Female. — The body (see Pl. XVIII, fig. 5) is slender and elongate, almost cylindric,

bevæbnet med et vist Antal storre tilspidsede Pigge, der er regelmæssigt ordnede saaledes, at de storste danner en dobbelt Rad langs efter Ryggen.

Hovedet er forholdsvis lidet og oventil bevæbnet med et Par korte, men tydelige Pigge. 1ste Kropssegment er kortere end de 4 derpaa følgende og af sædvanlig Form; det viser oventil 3 Par temmelig smaa tilspidsede Knuder. 2det Segment har den sædvanlige tendannede Form og viser oventil 3 Par stærkt fremtrædende Pigge, hvoraf navnlig det midterste udmærker sig ved betydelig Længde; desuden sees over Basis af 2det Fodpar en stærk skjævt fortilrettet lateral Pig. De 2 følgende Segmenter, der omtrent er af samme Storrelse som 2det, har ligeledes over Basis af Gjellebladene og til hver Side af Brystposen en stærk lateral Pig samt desuden en dobbelt Rad af hoie tilspidsede Pigge langs Rygsiden, 4 Par paa hvert Segment. 5te Segment er noget smalere end de 2 foregaaende og langs Rygsiden bevæbnet med en Del mere eller mindre fremtrædende Pigge. De 2 sidste Kropssegmenter er som sædvanlig ganske korte, og hvert forsynet med 4 i en Tværrad staaende Pigge, 2 dorsale og 2 laterale.

Bagkroppen (sml. Fig. 5 *c*) er mindre rudimentær end hos foregaaende Slægt og bestaar af 2 tydelige Segmenter, hvert forsynet med et Par Lemmer.

Øinene er ganske smaa, runde, med som det synes ufuldkomment udviklede Synselementer.

1ste Par Følere er tynde og forlængede, næsten af hele Legemets Længde. Af Skaftets Led er 2det længst og 3die længere samt betydelig tyndere end 1ste. Svøben er noget, skjøndt ikke meget, kortere end Skaftet og bestaar af circa 20 korte med fine Børster besatte Led.

2det Par Følere er meget smaa og tynde, neppe mere end $^1/_3$ saa lange som 1ste Par, samt mangler ganske de stærke Børsteknipper, der udmærker disse Følere hos Arterne af foregaaende Slægt.

Kindbakkerne (Fig. 5 *a*) ligner meget i sin Bygning samme hos foregaaende Slægt, men skiller sig væsentlig derved, at de er forsynede med en vel udviklet 3-leddet Palpe.

I de øvrige Munddeles Bygning er derimod ingen væsentlig Afvigelse fra samme hos Caprella at notere.

1ste Fodpar (Fig. 5 *b*) er ligeledes temmelig overensstemmende bygget, skjøndt noget mindre undersætsigt end hos de 2 i det foregaaende omtalte Caprelliner.

2det Fodpar (se Fig. 5) er kraftigt udviklet, med Basalleddet ganske smalt og simpelt cylindriskt, Haanden særdeles stor, saa lang som alle de øvrige Led tilsammen, af aflang Form, med den bagre Rand tilskjærpet og delt i 3 lancetformige Flige, hvorat den midterste er storst. Af de 2 ved disse Flige begrændsede Indsnit er det forreste

and armed above with a definite number of comparatively large acute spikes, in regular arrangement, and so disposed, that the largest constitute a double series extending along the back.

The head is comparatively small, and furnished above with a pair of short but distinct spikes. The 1st body-segment is shorter than the 4 succeeding ones, and of the usual form; above, it exhibits 3 pairs of rather small acute protuberances. The 2nd segment has the usual fusiform shape, and above exhibits 3 pairs of very prominently developed spikes, of which in particular the median is characterized by considerable length; besides, over the base of the 2nd pair of legs is seen a strong, anterior-directed lateral spike. The 2 succeeding segments, about equal in size to the 2nd, have likewise above the base of the branchial scales and on either side of the marsupium a strong lateral spike, as also a double series of high acute spikes along the dorsal surface, 4 pairs on either segment. The 5th segment is a trifle more slender than the 2 preceding ones, and armed along the dorsal surface with a number of more or less prominent spikes. The 2 last body-segments are, as usual, quite short, and each furnished with 4 spikes, arranged transversally, 2 dorsal and 2 lateral.

The abdominal division of the body (see fig. 5 *c*) is less rudimentary than in the preceding genus, and consists of 2 distinct segments, each provided with a pair of limbs.

The eyes are quite small, round, and, it would appear, with incompletely developed visual elements.

The 1st pair of antennæ are slender and elongate, well-nigh equalling the body in length. Of the joints of the peduncle, the 2nd is longest, and the 3rd longer than the 1st, as also considerably more slender. The flagellum is somewhat, though not much, shorter than the peduncle, and consists of close upon 20 short, with delicate bristles beset joints.

The 2nd pair of antennæ are very small and slender, scarcely more than a third the length of the 1st pair, and want altogether the strong fascicles of bristles characterizing these antennæ in the species of the preceding genus.

The mandibles (fig. 5 *a*) resemble closely in structure those of the preceding genus, but differ essentially in having a well-developed three-jointed palp.

In the structure of the other oral appendages, no important deviation from that in Caprella has to be recorded.

The 1st pair of legs (fig. 5 *b*) are likewise comparatively similar in structure, though somewhat less thickset than is the case with the corresponding pair in the 2 previously described Caprellæ.

The 2nd pair of legs (fig. 5) are powerfully developed, with the basal joint quite slender and simple cylindric, the hand exceedingly large, equal in length to all the other joints taken together, oblong in form, with the posterior margin sharpened and divided into 3 lanceolate lappets, of which the median is the largest. Of the 2 incisions bounded by these

dybest og afrundet i Bunden. Fortil danner Haanden lige over den kraftige Endeklo et spidst Fremspring.

Gjellebladene, Brystposen og de 3 bagre Fodpar viser intet udmærkende i sin Bygning.

Af de 2 Par Bagkropslemmer er det forreste (se Fig. 5 *c*) tydeligt 2-leddet og betydelig større end det bagerste, der kun danner et Par simple, i Kanterne fint cilierede koniske Vedhæng.

Hannen (Fig. 5 *x*) er betydelig større end Hunnen og af noget mere langstrakt Kropsform. De 2 forreste Segmenter viser dog ikke noget saadant anomalt Forhold som hos Hannerne af foregaaende Slægt. Hvad Legemets Bevæbning angaar, saa er den noget ulig samme hos Hunnen, idet de dorsale Pigge er betydelig mindre fremtrædende, hvorimod hele Legemets Overflade, ligesom ogsaa en stor Del af Lemmerne, er ru af talrige smaa tilspidsede Knuder.

1ste Par Folere er stærkere forlængede end hos Hunnen og navnlig Skaftet kraftigere udviklet, medens Svøben synes at være forholdsvis kortere.

2det Fodpar skiller sig i sin Bygning fra samme hos Hunnen alene derved, at Basalleddet er noget stærkere forlænget, medens Haanden viser nøiagtig samme Form. Hele dette Fodpar er, ligesom 1ste Par Foleres Skaft, tæt besat med de ovenomtalte Smaaknuder.

Bagkroppen med dens Vedhæng (Fig. 5 *c*) skiller sig heller ikke i nogen væsentlig Grad fra samme hos Hunnen. Foran den udgaar fra sidste Forkropssegment de 2 ydre Kjønsvedhæng, der er af et lignende Udseende som hos Hannen af *Caprella spinosissima*.

Legemet er hos begge Kjøn temmelig gjennemsigtigt, hvidagtigt, med uregelmæssige mørkere Pigmentskatteringer.

Længden af den ægbærende Hun er 30^{mm}. Hannen er betydelig større og opnaar en Længde af indtil 38^{mm}.

Forekomst og Udbredning. Denne smukke og characteristiske Art er under Expeditionen observeret paa 2 forskjellige langt fra hinanden liggende Stationer; den ene (Stat. 48) beliggende i Havet Øst af Island, den anden (Stat. 336) udenfor Sydpynten af Spitsbergen; Dybden fra 70 til 299 Favne. Af disse Stationer tilhører ialfald den ene (Stat. 48) den kolde Area, og den anden ligger under en saa høi nordlig Brede, at Artens arktiske Oprindelse neppe er tvivlsom.

Angaaende dens geographiske Udbredning udenfor Nordhavet, saa er den observeret saavel ved Grønland som ved Nordamerikas Østkyst, nordenom Cap Cod.

lappets, the foremost is the deeper, and rounded off at the bottom. Anteriorly, just above the powerful terminal claw, the hand extends forward as a pointed prolation.

The branchial scales, the marsupium, and the 3 posterior pairs of legs exhibit nothing characteristic in their structure.

Of the 2 abdominal appendages, the anterior (see fig. 5 *c*) is distinctly two-jointed, and much larger than the posterior, which constitutes merely a pair of simple appendages finely ciliated along the margins.

The Male (fig. 5 *x*) is considerably larger than the female, and somewhat more elongate in form. The 2 anterior segments do not, however, exhibit any such anomalous relation as in the males of the preceding genus. With regard to the armature of the body, it differs somewhat from that in the female, the dorsal spikes being much less prominent, whereas the whole surface of the body, as also a considerable portion of the limbs, are rough from numerous small acute protuberances.

The 1st pair of antennæ are more elongate than in the female, with the peduncle exhibiting a specially powerful development, whereas the flagellum would appear to be relatively shorter.

The 2nd pair of legs differ in structure from that in the female simply by the basal joint occurring a trifle more elongate; but the hand exhibits precisely the same form. The whole of this pair of legs, as also the peduncle of the 1st pair of antennæ, are densely beset with the forementioned small protuberances.

Nor does the abdominal division of the body with its appendages (fig. 5 *c*), present any essential difference from that in the female. Anterior to it, issue from the last body-segment the 2 outer generative appendages, of a similar appearance to those in the male *Caprella spinosissima*.

The body is in both sexes well-nigh translucent, whitish, with irregular pigmentary shadings.

Length of the ovigerous female 30^{mm}. The male is considerably larger, attaining in length 38^{mm}.

Occurrence and Distribution. — This beautiful and characteristic species was met with on the Expedition at 2 widely distant Stations; the one (Stat. 48) lay east of Iceland, the other (Stat. 336) was located off the southern extremity of Spitzbergen; depth ranging from 70 to 299 fathoms. Of these Stations, one at least (Stat. 48) belonged to the cold area, and the other was located in so high a latitude, that the Arctic origin of the species can hardly be doubtful.

As regards its geographical distribution without the limits of the Northern Ocean, the animal has been observed off Greenland and the eastern coast of North America, north of Cape Cod.

Fam. Hyperiidæ.

Gen. Hyperiopsis, n.

Slægtscharacteristik. Legemet af Hyperiernes sædvanlige Form, fortil opsvulmet, med bred Ryg og smaa Epimerer. Hovedet stort, med stærkt hvælvet Overdel. Øinene ufuldstændigt udviklede. 1ste Par Følere større end 2det Par, med kort Skaft og en tydeligt udviklet Bisvøbe. Kindbakkerne forsynede med vel udviklede Palper. De 2 forreste Fodpar svagt byggede, simple, ikke subcheliforme; de 2 følgende Par med 3die Led meget stort, sammentrykt, bladformigt; de 3 bagre Par tynde, næsten traadformige, med kun svagt udvidet Hofteled; sidste Par længst. Svømmefødderne kraftigt udviklede. De 2 forreste Par Halefødder enkle, 2-leddede; sidste Par tvegrenede. Halevedhænget rudimentært.

Bemærkninger. Skjøndt i sin almindelige Habitus temmelig lig de øvrige Hyperiider synes den nedenfor beskrevne Amphipode dog i enkelte Henseender mærkeligt at skille sig fra de tidligere bekjendte Former af denne Familie, saa at det ikke er usandsynligt, at man ved en nøiere Undersøgelse vil finde det nødvendigt at sondre den som Typen for en distinct Gruppe indenfor Hyperiinernes Tribus. Hvad der navnlig er paafaldende ved nærværende Form er den tydelige og temmelig store Bisvøbe paa 1ste Par Følere, en Character, der som bekjendt er ganske fremmed for Hyperiiderne. Da kun et enkelt Exemplar foreligger, har ikke en nøiere Undersøgelse af Munddelene kunnet anstilles.

Fam. Hyperiidæ.

Gen. Hyperiopsis, n.

Generic Character. — Body of the usual form in Hyperidians, tumid anteriorly, with back broad and small epimera. Head large, with upper part prominently arcuate. Eyes incompletely developed. First pair of antennæ larger than 2nd, with peduncle short and a well-developed accessory flagellum. Mandibles furnished with distinctly developed palps. The 2 foremost pairs of legs feeble in structure, simple, non-subcheliform; the 2 succeeding pairs with 3rd joint very large, compressed, lamelliform; the 3 posterior pairs slender, almost filiform, with basal joint but slightly expanded; last joint longest. Pleopods powerfully developed. The 2 foremost pairs of caudal stylets simple, two-jointed; last pair biramous. Telson rudimentary.

Remarks. — Though bearing in its general habitus very considerable resemblance to other Hyperidians, the Amphipod described below would in certain respects appear to differ remarkably from the previously known forms of the family; and hence it is far from improbable that a closer examination will show the necessity of selecting it as the type of a distinct group within the tribe *Hyperiina*. The most striking peculiarity in the present form is the distinct and rather large secondary flagellum on the 1st pair of antennæ, a character quite alien to Hyperidians in general. Having had but one specimen before us, a detailed examination of the oral appendages could not be undertaken.

75. Hyperiopsis Vøringii, n. sp.

(Pl. XX, Fig. 21).

Artscharacteristik. Legemet glat, uden dorsale Fortsatser. Hovedet oventil jevnt buet med et svagt Fremspring over Roden af 1ste Par Følere, de nedre Kanter næsten lige og horizontale. De 4 forreste Par Epimerer indbyrdes af ens Størrelse og Udseende, simpelt tilrundede og omtrent halvt saa høie som selve Kroppen; de 3 bagre successivt betydelig mindre. De 3 forreste Bagkropssegmenter med vel udviklede, bagtil vinklede Sideplader; de 3 sidste smale og forlængede. 1ste Par Følere ikke fuldt af Legemets halve Længde, med Svøbens 1ste Led meget stort og i den indre Kant tæt cilieret, Bisvøben omtrent af dettes Længde og bestaaende af 4 Led; 2det Par Følere betydelig svagere, med Skaftets næstsidste Led tyndt og

75. Hyperiopsis Vøringii, n. sp.

(Pl. XX, fig. 21).

Specific Character. — Body smooth, without dorsal prolations. Head evenly arched above, with a slight projection over base of 1st pair of antennæ, lower margins well-nigh straight and horizontal. The 4 anterior pairs of epimera uniform in size and appearance, simple rounded and close upon half as high as body; the 3 posterior becoming successively much smaller. The 3 foremost abdominal segments with well-developed, posteriorly angulous lateral plates; the 3 last slender and elongate. First pair of antennæ not quite half the length of body, with 1st joint of flagellum very large and on inner margin closely ciliate, secondary flagellum about equal in length to said joint, and composed of 4 articulations; 2nd pair of antennæ

forlænget, sidste meget lidet. 2det Fodpar længere end 1ste; Haanden paa begge simpel og ganske smal, neppe længere end det foregaaende Led. 3die Led paa 3die og 4de Fodpar mere end dobbelt saa langt som de 2 følgende tilsammen, aarebladformigt, bredest paa Midten; Endekloen vel udviklet, leformig. Sidste Fodpar stærkt forlænget, utydeligt leddet. Sidste Par Halefødder med Grenene af Skaftets Længde. Legemet gjennemsigtigt uden tydelig Pigmentering. Længden 11^{mm}.

Findested. Stat. 54.

Beskrivelse. Det undersøgte Exemplar synes efter Følernes Bygning at være en Hun. Legemet viser (se Pl. XX, Fig. 21) idethele den for Hyperiiderne characteristiske Habitus, idet Forkroppen er stærkt opsvulmet, med bred Ryg og smaa Epimerer, Bagkroppen mere sammentrykt, med Sidepladerne paa de 3 forreste Segmenter vel udviklede og bagtil tydeligt vinklede. Ingen af Segmenterne gaar ud i dorsale Fortsatser.

Hovedet er som hos andre Hyperiider særdeles stort, næsten kugleformigt og oventil stærkt hvælvet, med et meget lidet knudeformigt Fremspring over Roden af 1ste Par Følere. Dets nedre Kanter er næsten lige og horizontale samt overgaar i de forreste med en jevn Runding.

De 4 forreste Par Epimerer er alle af ens Størrelse og Udseende, simpelt tilrundede eller skjælformige og omtrent halvt saa høie som selve Kroppen; de 3 derpaa følgende Par aftager hurtigt i Størrelse.

Det ydre Parti af Bagkroppen er temmelig forlænget, noget nedtrykt og delt i 3 tydeligt afsatte Segmenter.

Øinene mangler vistnok ganske ethvert Spor af lysbrydende Elementer eller tydeligt udviklet Pigment, men viser dog i sit Anlæg en fuldkommen lignende Anordning som hos de øvrige Hyperiider, idet der paa hver Side fra et opakt Legeme (det udvidede Synsganglion) udstraaler talrige opad divergerende Fibrer, der synes at være Rudimenter af de enkelte Synselementer.

Begge Par Følere er vel udviklede og udspringer fra den nedre Side af Hovedet, det ene Par bag det andet. 1ste Par er næsten af Legemets halve Længde og temmelig stærkt bygget. Skaftet er meget kort og tykt, med det 1ste Led større end de 2 øvrige tilsammen. Svøben afsmalnes successivt mod Enden og bestaar af et meget stort, noget opsvulmet 1ste Led, hvorpaa følger en af circa 12 korte Led bestaaende Endesnært. Langs ad Svøbens indre Side og navnlig dennes 1ste Led er fæstede talrige lange og gjennemsigtige Sandsebørster. Bisvøben er vel udviklet

much more feeble, with penultimate joint of peduncle slender and produced, last very small. Second pair of legs longer than 1st; hand on both simple and quite slender, scarcely, if at all, greater in length than preceding joint. Third joint on 3rd and 4th pairs of legs more than twice as long as the 2 succeeding ones taken together, oar-shaped, broadest in the middle; terminal claw well developed, falciform. Last pair of legs greatly produced, indistinctly articulate. Last pair of caudal stylets with branches equalling length of peduncle. Body translucent, without distinct pigmentation. Length 11^{mm}.

Locality. — Stat. 54.

Description. — The specimen examined would appear, judging from the structure of the antennæ, to be a female. The body exhibits (see Pl. XX, fig. 21) on the whole the habitus characteristic of Hyperidians, the anterior division being greatly swollen, with back broad and small epimera, the posterior occurring more compressed, with the lateral plates on the 3 foremost segments well developed, and hindwards distinctly angular in form. None of the segments are produced as dorsal prolations.

The head is exceedingly large, as in other Hyperidians, almost globular, and prominently arched above, with a very small tuberculiform projection over the base of the 1st pair of antennæ. Its lower margins are well-nigh straight and horizontal, on the foremost gradually changing to an even curve.

The 4 anterior pairs of epimera are all uniform in size and appearance, simple rounded or squamiform, and nearabout half the height of the body; the 3 succeeding pairs diminish rapidly in size.

The outer part of the abdominal division of the body is considerably produced, somewhat compressed, and divided into 3 well-defined segments.

The eyes are, it is true, without the slightest trace of refractive elements or any distinctly developed pigment, but exhibit in their structural disposition a perfectly similar arrangement to that in other Hyperidians, since, on either side, from an opaque body (the expanded visual gangilon) numerous upward-diverging fibres are seen to radiate, apparently rudiments of the several visual elements.

Both pairs of antennæ are well developed, and originate on the lower surface of the head, the one pair posterior to the other. The 1st pair attain well-nigh half the length of the body, and have a somewhat powerful structure. The peduncle is very short and thick, with the 1st joint larger than the other 2 taken together. The flagellum diminishes successively toward the end, and consists of a very large, somewhat tumid 1st articulation, to which succeed about 12 short joints, forming a terminal lash. Along the inner side of the flagellum, and more particularly on its 1st joint, occur numerous long and translucent sensory bristles. The secondary flagellum is well developed,

og omtrent af samme Længde som Svobens Basalled samt viser 4 tydelige Led, hvoraf det 1ste er størst.

2det Par Folere er baade kortere og tyndere end 1ste Par. Af Skaftets Led er det næstsidste stærkt forlænget og smalt, hvorimod sidste Led er ganske lidet. Svoben er kortere end Skaftet og utydeligt leddet.

Munddelene kunde, som anført, paa det eneste foreliggende Expl. ikke noiere undersøges. Dog sees allerede udvendigt, at Kindbakkerne er forsynede med vel udviklede Palper af den for Gammarinerne sædvanlige Bygning.

De 2 forreste Fodpar er temmelig svagt udviklede og af ens Bygning, men 2det Par noget mere forlænget end 1ste. Haanden er ganske simpel, smal, ikke subcheliform og neppe længere end det foregaaende Led. Begge Par er i Kanterne besatte med korte Børster.

De 2 følgende Par udmærker sig i høi Grad ved den eiendommelige Udvikling af 3die Led. Dette er mere end dobbelt saa langt som de 2 sidste tilsammen, særdeles gjennemsigtigt og stærkt sammentrykt eller aarebladformigt, bredest paa Midten og jevnt afsmalnende mod begge Ender, samt i begge Kanter besat med korte Børster. Af de 2 ydre Led er det sidste længst og konisk tillobende samt ved Spidsen forsynet med en kraftig og meget bevægelig Klo, der kan slaaes helt ind mod Leddet.

De 3 bagerste Fodpar har Hofteleddet ganske smalt, ikke som sædvanlig pladeformigt. Det ydre Parti var paa de 2 forreste af disse Par afbrukket; paa sidste Par er det stærkt forlænget og smalt, næsten traadformigt, med utydelig Segmentering og næsten børstelost.

De 3 Par Svømmefødder er kraftigt udviklede og af sædvanlig Bygning.

Af Halefødderne er de 2 forreste Par meget stærkt forlængede, simple, 2-leddede. Derimod har sidste Par 2 omtrent ligeligt udviklede lancetformige Grene.

Halevedhænget er yderst lidet og rudimentært.

Legemet er gjennemsigtigt, næsten vandklart, uden nogen tydelig Pigmentering.

Længden af det undersøgte Exemplar er 11^{mm}.

Forekomst. Et enkelt Exemplar af denne mærkelige Amphipode blev under Expeditionens 1ste Togt taget i Havet udenfor vor Kyst (Stat. 54) fra et Dyb af 600 Favne. Et andet incomplet Exemplar blev senere udpræpareret af Maveindholdet af den mærkelige Dybvandsfisk, *Rodichthys regina* Collett, taget paa Stat. 297 fra et Dyb af 1280 Favne.

and about the same length as the basal joint of the true flagellum, as also exhibiting 4 distinct articulations, of which the 1st is the largest.

The 2nd pair of antennæ are both shorter and more slender than the 1st. Of the joints of the peduncle, the penultimate is greatly produced, and slender, whereas the last joint is quite small. The flagellum is shorter than the peduncle, and indistinctly articulated.

The oral appendages could not, as previously mentioned, be submitted to close examination in the only specimen before us. Meanwhile, the mandibles are seen, even externally, to be furnished with well-developed palps of the structure usual in Gammaridians.

The 2 foremost pairs of legs exhibit a rather feeble development and a uniform structure; but the 2nd pair are a trifle more elongate than the 1st. The hand is quite simple, slender, non-subcheliform, and scarcely at all longer than the preceding joint. Both pairs are fringed along the margins with short bristles.

The 2 succeeding pairs have a most prominent character in the peculiar development of the 3rd joint. This is more than twice as long as the 2 last joints taken together, well-nigh translucent, and greatly compressed or oar-shaped, broadest in the middle, and gradually tapering to both extremities, as also beset on both margins with short bristles. Of the 2 outer joints, the second is the longer, and conically produced, bearing also at the point a powerful and very mobile claw, which admits of being jerked back in direct contact with the joint.

The 3 hindmost pairs of legs have the basal joint quite slender, — not, as usual, lamelliform. The outer part of the 2 foremost of these pairs was broken off; on the last pair, it is greatly produced and slender, well-nigh filiform, with indistinct segmentation, and almost bristleless.

The 3 pairs of pleopoda are powerfully developed and normal in structure.

Of the caudal stylets, the 2 foremost pairs are very greatly produced, simple, and two-jointed. On the other hand, the last pair have 2 about equally developed lanceolate branches.

The telson is exceedingly small and rudimentary.

The body is translucent, almost hyaline, without distinct pigmentation.

Length of the specimen examined 11^{mm}.

Occurrence. — One example of this remarkable Amphipod was taken, on the 1st cruise of the Expedition, off the Norwegian coast (Stat. 54), at a depth of 600 fathoms. Another (defective) specimen was subsequently extracted from the stomach of the remarkable deep-sea fish, *Rodichthys regina* Collett, brought up at Stat. 297, from a depth of 1280 fathoms.

Ordo Copepoda.

Trib. *Calanoidea.*

Fam. **Calanidæ.**

Gen. **Euchæta,** Philippi. 1843.

Wiegmann's Archiv f. Naturgeschichte, Jahrg. 9.

76. Euchæta norvegica, Boeck.

(Pl. XIX).

Euchæta Prestandreæ, Oversigt over de ved Norges Kyster iagttagne Copepoder. Chr. Vid. Selsk. Forh. 1874, p. 236.

Euchæta norvegica, Nye Slægter og Arter af Saltvandscopepoder. Chr. Vid. Selsk. Forh. 1872, p. 40.

Euchæta carinata, Moebius, Jahresbericht der Commission zur wissenschaftlichen Untersuchung des deutschen Meeres in Kiel f. d. Jahr 1872—73 pg. 271, Tab. VII.

Artscharacteristik. Forkroppen glat, aflang, hos Hunnen dobbelt saa lang som Bagkroppen. Pandehornet tilspidset, med kun en utydelig Afsats oventil. Sidste Forkropssegments Sidehjørner stumpe og tæt haarede. 1ste Bagkropssegment hos Hunnen nedentil stærkt knudeformigt fremspringende. Halevedhængene korte, skraat afskaarne; Børsterne stærkt ciilerede, den næstinderste meget længere end de øvrige; den supplementære Haarborste kortere end Legemet. 1ste Par Folere af Forkroppens Længde. Børsterne paa Kjævepalpernes sidste Led stærkt forlængede og boiede. Munddelene hos den fuldt udviklede Han rudimentære; sidste Fodpar (Gribefødderne) længere end Bagkroppen. Endekloen paa høire Fod kortere end det foregaaende Led med stump Spids. Endevedhængene paa venstre Fod korte og indbyrdes omtrent af ens Længde. Farven hos Exemplarer fra større Dyb intensiv blodrød. Længden indtil 11^{mm}.

Findesteder. Stat. 26, 31, 33, 35, 40, 53, 54, 96, 183, 190, 205, 257.

Bemærkninger. Dette er den største og mest iøinefaldende af alle de under Expeditionen observerede fritlevende Copepoder og staar i denne Henseende neppe tilbage for nogen af de tidligere bekjendte Former. Arterne af Slægten *Euchæta* staar hverandre særdeles nær, og Boeck blev herved forledet til først at identificere vor nordiske Form med den middelhavske Form *E. Prestandreæ* Phil. Senere opstillede han imidlertid Arten *E. norvegica*, hvis Identitet med den her omhandlede Form jeg har kunnet overbevise mig om ved at conferere med Forfatterens originale Manuskript og Tegninger, mig velvilligt laant af hans Broder, Dr. H. Boeck. At den her omhandlede af Moebius senere under Benævnelsen *E. carinata* beskrevne Form er specifisk forskjellig fra *E. Prestandreæ*, har jeg kunnet overbevise mig om ved en direkte Sammenligning med Exemplarer af sidstnævnte Art samlede af mig ved

Ordo Copepoda.

Trib. *Calanoidea.*

Fam. **Calanidæ.**

Gen. **Euchæta,** Philippi. 1843.

Wiegmann's Archiv f. Naturgeschichte, Jahrg. 9.

76. Euchæta norvegica, Boeck.

(Pl. XIX).

Euchæta Prestandreæ, Oversigt over de ved Norges Kyster iagttagne Copepoder. Chr. Vid. Selsk. Forh. 1864, p. 236.

Euchæta norvegica, Nye Slægter og Arter af Saltvandscopepoder. Chr. Vid. Selsk. Forh. 1872, p. 40.

Euchæta carinata, Moebius Jahresbericht der Commission zur wissenschaftlichen Untersuchung des deutschen Meeres in Kiel, f. d. Jahr 1872—73, p. 271, Tab. VII.

Specific Character. — Anterior division of body smooth, oblong, in female twice as long as posterior. Rostrum pointed, with merely an indistinct ledge above. Lateral corners of last thoracic segment obtuse, and densely hirsute. In female, first abdominal segment, below, prominently tuberculiform-protrusive. Caudal appendages short, obliquely truncate; bristles closely ciliate, — that next to innermost very much longer than the others; supplementary hair-bristle shorter than body. Bristles on last joint of maxillary palps exceedingly elongate and curved. Oral appendages in fully developed male rudimentary; last pair of legs (prehensile) longer than posterior division of body, terminal claw on right legs shorter than preceding joint, with extremity obtuse, terminal appendages on left leg short and well-nigh equal in length. Colour of specimens from any considerable depth a vivid blood-red. Length reaching 11^{mm}.

Locality. — Stats. 26, 31, 33, 35, 40, 53, 54, 96, 183, 190, 205, 257.

Remarks. — This is the largest and most conspicuous of all the free-living Copepods observed on the Norwegian Expedition, and in this respect hardly yields precedence to any previously known form. The species of the genus *Euchæta* approximate very closely; and hence Boeck was at first erroneously led to contound the Northern with the Mediterranean form — *E. Prestandreæ* Phil. Subsequently, however, he established the species *E. norvegica*, the identity of which with that here described I have had opportunity to ascertain by comparing the original manuscript and drawings of the author, kindly lent me by his brother, Dr. H. Boeck. That the species here treated of, and described by Moebius as *E. carinata*, is specifically distinct from *E. Prestandreæ*, I have had ample opportunity of proving from direct comparison between the said animal and specimens of the latter form, collected by

Messina. Foruden ved den langt betydeligere Storrelse skiller nærværende Art sig blandt andet ved Pandehornets Form, ved det nedentil særdeles stærkt pukkelformigt fremspringende 1ste Bagkropssegment hos Hunnen samt ved Bygningen af Hannens bagre Fodpar (Gribefødderne). Det kjølformige Fremspring, som findes nedentil mellem sidste Par Kjævefødder og 1ste Fodpar og som har givet Anledning til den af Moebius foreslaaede Artsbenævnelse, er noget, der ikke er eiendommeligt for nuværende Art, men som den deler med de fleste Calanider.

Beskrivelse af Hunnen. Legemet viser (se Pl. XIX, Fig. 1 og 2) som hos alle Calanoider en meget skarp Adskillelse mellem For- og Bagkrop. Forkroppen er af aflang eller noget tendannet Form, omtrent 3 Gange saa lang som bred og afsmalnes stærkt mod den forreste Ende, mindre mod den bagerste. Den bestaar kun af 4 tydeligt begrændsede Segmenter; idet de 2 sidste er sammenvoxede med hinanden. Det forreste Segment, der er længere end de ovrige tilsammen og i sig indbefatter det 1ste fodbærende Segment, ender fortil med et næsten lige fortilrettet, skarpt tilspidset Fremspring eller Pandehorn. Paa den ovre Side af dette sees (Fig. 3) en ubetydelig, neppe mærkelig Afsats, hvortil er fæstet 2 korte Borster. Hos den middelhavske Form er derimod denne Afsats udtrukket til en stærk tornformig Fortsats af et lignende Udseende som det egentlige Rostrum. Sidste Forkropssegment er som sædvanlig i Midten dybt udrandet og gaar til hver Side ud i en stumpt tilrundet med tætte Haar besat bagudrettet Lap. Bagkroppen er neppe halvt saa lang som Forkroppen og overalt fint laadden af korte Haar eller Smaapigge, der ganske synes at mangle paa Forkroppen. Den bestaar af 4 Segmenter foruden de 2 Halevedhæng (Furca). Af disse er det 1ste betydelig større end nogen af de ovrige og danner nedentil foran Midten et stærkt pukkelformigt Fremspring, paa hvilket Kjønsaabningen er beliggende og hvortil den enkle Æggesæk og ofte 2 eller flere Spermatophorer er fæstede. De 2 følgende Segmenter er simpelt cylindriske og indbyrdes omtrent af ens Længde, hvorimod det 4de er særdeles kort og derfor let at overse. Ved dets Ende findes ovenfil Analaabningen.

Halevedhængene eller den saakaldte Furca (Fig. 13), er ganske korte, neppe dobbelt saa lange som brede og i Enden skraat afskaarne i Retningen udenfra indad. Til særegne Afsatser er fæstede 4 stærke, i Kanterne tæt og temmelig grovt ciliérede eller fjærdannede Haleborster. Af disse er de 2 yderste og den inderste næsten indbyrdes af ens Længde, hvorimod den næstinderste er mere end dobbelt saa lang. Foruden disse egentlige Haleborster, der hos det levende Dyr viser et overordentlig pragtfuldt Udseende ved det vexlende regnbuefarvede Skjær, som Cilierne frembyder, sees tæt over den yderste en ganske kort uciliéret Børste, samt

myself at Messina. Let alone its far greater size, the present species is distinguished among other characteristics by the form of the rostrum, by the 1st abdominal segment in the female jutting forth below with an exceedingly prominent hunch, and by the structure of the posterior pair of legs in the male (prehensile). The keel-shaped projection occurring below between the last pair of maxillipeds and the 1st pair of legs, and that gave rise to the specific designation proposed by Moebius, is nowise peculiar to the present species, sharing as it does the said character with most other Calanidæ.

Description of the Female. — The body exhibits (see Pl. XIX, figs. 1, 2), as in all *Calanoidea*, a very distinct separation between the anterior and posterior divisions. The anterior division is oblong or rather somewhat fusiform, about 3 times as long as broad, and tapers rapidly toward the anterior end, less so toward the posterior. It consists of but 4 distinctly defined segments, the 2 last being connate. The foremost segment, which is longer than all the others taken together and comprises the 1st pedigerous segment, terminates anteriorly in a well-nigh straight, anterior-directed, acute projection, or rostrum. On the upper face of this projection, can be observed (fig. 3) a minute, scarcely appreciable ledge, to which are affixed 2 short bristles. In the Mediterranean form, on the other hand, this ledge is drawn out as a strong, spiniform prolation, similar in appearance to the true rostrum. The last thoracic segment occurs, as usual, deeply emarginate in the middle, projecting on either side as an obtusely rounded, posterior-directed lobe, densely covered with hair. The posterior division of the body is scarcely half as long as the anterior, and everywhere clothed with short hairs or delicate, diminutive spikes, wanting entirely, it would seem, on the latter. It consists of 4 segments, exclusive of the 2 caudal appendages (furca). Of these, the 1st is considerably larger than either of the others, and constitutes below, anterior to the middle, a strong, hunched prolation, on which the generative orifice is located, and to which the single ovisac, as also, frequently, 2 or more spermatophores, occur attached. The 2 succeeding segments are simple cylindric, and about equal in length, whereas the 4th is exceedingly short, and may therefore be easily overlooked. At the end, above, is seen the anal opening.

The caudal appendages, or the so-called furca (fig. 13), are quite short, scarcely twice as long as broad, and obliquely truncate at the extremity, from without to within. Affixed to special ledges, occur 4 strong caudal bristles, densely and rather coarsely ciliate along the margins — or plumous. Of these bristles, the 2 outermost and the innermost are well-nigh equal in length, whereas that next to the innermost is more than twice as long. Exclusive of the said, strictly caudal bristles, which, in the living animal, exhibit a most gorgeous colouring, produced by the shifting prismatic tints of the ciliæ, are seen, close above the outermost, a very short

nedentil, fæstet til det indre Hjørne lige under den inderste Haleborste en overordentlig lang og tynd, ved Basis knæformig bøiet og i en særdeles fin Spids udgaaende Børste, der opnaar mere end Legemets halve Længde.

Det enkle Øie er ganske lidet og simpelt bygget, beliggende i det indre af Hovedets forreste Del og nærmere Bug- end Rygsiden. Det hviler umiddelbart paa Hjernegangliet og har 2 meget smaa lysbrydende Legemer, i Midten forbundne med en liden Ansamling af rødt Pigment.

1ste Par Følere er omtrent af Forkroppens Længde, meget tynde og bæres under Dyrets Bevægelser udstrakte til hver Side, med en svag og jevn Krumning af det indre Parti. De er sammensatte af 23 tydeligt begrændsede Led, der idethele tiltager noget i Længde mod Enden i samme Forhold som de bliver tyndere. Foruden en Del ganske korte Haar i den forreste Kant ved Enden af Leddene, bemærkes paa disse Følere et vist Antal af ualmindelig lange og stærke, i forskjellige Retninger bøiede Børster, der i Forbindelse med den eiendommelige supplementære Haleborste har givet Anledning til Slægtsbenævnelsen Euchæta. Man tæller i den forreste Kant 6 saadanne stærkt udviklede Børster, tilhørende 3die, 7de, 8de, 13de, 17de og 20de Led. Navnlig er de fra 7de og 8de Led udgaaende meget lange og rettede skraat udad. Sidste Led bærer paa Enden 3 længere Borster, hvoraf den ene er rettet lige fortil, de 2 øvrige bagtil. Endelig har næstsidste Led ved Enden i den bagre Kant ligeledes en lang bagudrettet Borste. I det basale Parti af Følerne bemærkes desuden langs den bagre Kant en tæt Besætning af fine Haar eller Cilier.

2det Par Følere (Fig. 5) viser den for Calaniderne sædvanlige Bygning og bestaar af et kort og muskulost 2-leddet Skaft og 2 temmelig ligeligt udviklede Grene. Den inderste af disse, der danner den umiddelbare Fortsættelse af Skaftet, bestaar af 2 uligestore Led, et temmelig smalt og forlænget 1ste Led og et ganske kort, sammentrykt og i Spidsen afstumpet eller svagt tvelappet Endeled, hvorfra udgaar et tæt Knippe af lange divergerende Fjærborster. Den ydre Gren, der er ubetydelig længere end den indre og udspringer fra en Afsats i den bagre Kant af Skaftets sidste Led, er simpelt cylindrisk og noget bøiet paa Minten samt meget bevægelig. Den bestaar af 6 Led, hvoraf det 1ste er ganske kort og uden Borster. Af de 5 øvrige Led er de 3 midterste ligeledes særdeles korte og hvert ligesom det foregaaende i den ene Kant forsynet med en lang og stærk Fjærborste. Sidste Led, der er af samme Længde som de 4 foregaaende tilsammen, har i Spidsen 3 lange og stærkt bøiede Fjærborster og i den ene Kant en kortere saadan.

naked bristle, as also, below, attached to the inner corner, immediately beneath the innermost caudal bristle, an exceedingly long and slender seta, attaining more than half the length of the body, — at the base geniculate, and terminating in a very delicate point.

The single eye is quite small and simple in structure, placed within the foremost part of the head, and nearer the ventral than the dorsal side. It rests immediately on the cerebral ganglion, and has 2 very small refractive corpuscles, connected in the middle, as it were, by a patch of red pigment.

The 1st pair of antennæ are about equal in length to the anterior division of the body, very slender, and, during the movements of the animal, borne extended on either side, with a slight and equable curvature of the inner part. They consist of 23 distinctly defined articulations, which, upon the whole, increase somewhat in length toward the extremity, becoming in like proportion more slender. Exclusive of a quantity of very short hairs on the foremost margin at the end of the joints, may be observed on these antennæ a limited number of remarkably long and powerful bristles, curving in various directions, which, together with the peculiar supplementary caudal bristle, have suggested the generic designation Euchæta. On the foremost margin can be counted 6 of these powerfully developed bristles, belonging respectively to the 3rd, 7th, 8th, 13th, 17th, and 20th articulation. Those issuing from the 6th and 8th articulations are in particular very long, and jut obliquely outward. The terminal articulation bears at the extremity 3 long bristles, one of which extends straight forward, the 2 others pointing backward. Finally, the penultimate articulation has at the extremity, on the posterior margin, likewise a long, backward-directed bristle. Moreover, in the basal part of the antennæ occurs along the posterior margin a dense clothing of fine hairs, or cilia.

The 2nd pair of antennæ (fig. 5), exhibiting the structure usual in Calanidians, consist of a short and muscular two-jointed peduncle and 2 equably developed branches. The inner of these, constituting the immediate prolongation of the peduncle, is composed of 2 unequal articulations, a rather slender elongate 1st articulation and a very short, compressed, and at the point obtuse or faintly bilobular terminal joint, whence issues a dense fascicle of long, diverging plumous bristles. The outer branch — but very little longer than the inner, and springing from a ledge on the posterior margin of the last joint of the peduncle — is simple cylindric, and somewhat bent in the middle, as also exceedingly mobile. It consists of 6 articulations, of which the 1st is quite short, and without bristles. Of the 5 remaining articulations, the 3 median are likewise exceedingly short, and, in common with the preceding, bear each on one of the margins a long and powerful plumous bristle. The last articulation, equal in length to the 4 preceding taken together, has at the point 3 long and sharply curved plumous bristles, and on one of its margins a similar shorter one.

Overlæben (Fig. 4) er temmelig voluminos og har fortil et knudeformigt, med tætte stive Haar besat Fremspring. Den mod Mundaabningen vendte Side gaar ud i 2 smaa jevnsides stillede Lapper.

Underlæben har jeg ikke kunnet faa tilfredsstillende isoleret. Den beskrives noiere af Moebius paa ovenanførte Sted.

Kindbakkerne (Fig. 6) er kraftigt udviklede, med Tyggeranden noget udvidet og tilskjærpet samt delt i 5 Tænder, hvoraf den yderste er størst og i den ene Kant fint takket. De øvrige gaar alle ud i 2 ligeligt udviklede Spidser: indenfor den inderste er fæstet en stiv Børste. Palpen er forholdsvis stor og bestaar af en tyk utydeligt 2-leddet Basaldel og 2 korte Grene. Den inderste af disse er 2-leddet og har i Spidsen af sidste Led 8—10 stærke Fjærborster. Den ydre Gren er noget opsvulmet paa Midten og delt i 5 utydeligt begrændsede Led, hvoraf ethvert bærer en lang og stærk boiet Fjærborste.

Kjæverne (Fig. 7) bestaar af den egentlige Kjævedel og en til Ydersiden af samme fæstet membranos Palpe eller Exognath. Kjævedelen er stærker chitiniseret, indadkrummet og paa den noget skraat afskaarne Tyggerand bevæbnet med flere stærke sangtakkede Torner, indenfor hvilke der endnu er fæstet en Del tyndere Borster. Palpen bestaar af 2 tydelige Segmenter, et bredt trelappet Basalled og et til Enden af den midterste Lap fæstet ganske kort Endeled. Til den ydre og indre Lap af Basalleddet er fæstet en Gruppe af Fjærborster, hvoraf især de til den ydre Lap hørende udmærker sig ved betydelig Længde. Den ydre Kant af Endeleddet bærer 7 usalmindelig lange og stærkt krummede Fjærborster.

1ste Par Kjævefødder (Fig. 8) er stærkt byggede, fortilkrummede og delt i 6—7 Segmenter, hvoraf det 1ste er meget stort og tykt samt fortil paa den indre Side forsynet med 2 smaa borstebesatte Lappe. Ethvert af de 2 følgende meget korte og utydeligt begrændsede Segmenter gaar ligeledes fortil ud i smale Lappe, paa Spidsen besatte med stærke krummede Børster, der paa den ydre Lap antager Formen af klodannede, kun i den ene Kant fint ciliérede Torner. 4de Led er længere og stærkere end saavel de 2 foregaaende som de 2 efterfølgende og forlænger sig paa den forreste Side til en i Spidsen afskaaren temmelig bred Lap, medens de 2 ydre Led er ganske simple. De til disse 3 sidste Led fæstede Torner er særdeles lange og jevnt buede samt af samme Bygning som de fra det næstforegaaende Led udgaaende, dannende tilsammen et Bundt af kraftige Klør, egnede til at fastholde de Organismer, som kommer indenfor deres Omraade.

2det Par Kjævefødder (Fig. 9) er særdeles kraftigt udviklede og af en for nærværende Slægt eiendommelig Form. De er nemlig dobbelt geniculerede, idet 1ste og 2det Led danner bagtil med hinanden en stærk albueformig Boining,

The labrum (fig. 4) is rather voluminous, and has anteriorly a tuberculiform projection, densely covered with stiff hairs. The side turning toward the buccal orifice juts out as 2 small lobules, placed side by side.

The labium I have not succeeded in satisfactorily isolating. Of this part, Moebius gives a rather detailed description in the forecited Memoir.

The mandibles (fig. 6) are powerfully developed, with the cutting edge somewhat expanded and sharpened, as also divided into 5 teeth, of which the outermost is largest, and, along one of its margins, finely serrate. The rest all jut out with 2 equably developed points; at the base of the innermost occurs a stiff bristle. The palp is comparatively large, and consists of a thick, indistinctly two-jointed basal part and 2 short branches. The innermost of these is two-jointed, and has at the point of the last articulation 8—10 strong, plumous bristles. The outer branch is somewhat tumid in the middle, and divided into 5 indistinctly defined articulations, each bearing a long and sharply curved plumous bristle.

The maxillæ (fig. 7) consist of the true maxillary portion and a membranous palp, or exognath, affixed to its outer side. The maxillary portion is more highly chitinous, incurved, and bearing on the somewhat obliquely truncate masticatory border a number of powerful serrate spines, within which are likewise attached a few comparatively slender bristles. The palp consists of 2 distinct segments, a broad tri-lobular basal joint and an exceedingly short terminal articulation, attached to the extremity of the median lobule. On the outer and inner lobes of the basal joint occurs a group of plumous bristles, of which those belonging to the outer lobe are in particular characterized by considerable length. The outer margin of the terminal joint bears 7 remarkably long and sharply curved plumous bristles.

The 1st pair of maxillipeds (fig. 8) are powerful in structure, curved anteriorly, and divided into 6 or 7 segments, of which the 1st is very large and thick, as also anteriorly, on the inner side, furnished with 2 small, setiferous lobes. Each of the 2 succeeding, very short and indistinctly defined segments, also jut out as slender lobules, armed at the point with strong, curving bristles, which on the outer lobule assume the form of unguiculate spines, finely ciliate along one of their edges only. The 4th joint is longer and more powerful than both the 2 preceding and the 2 succeeding ones, and on the foremost side produced to rather a broad lobe, truncate at the point, whereas the 2 outer joints are quite simple. The spines attached to these 3 terminal joints are exceedingly long and evenly arched, as also uniform in structure with those on the joint immediately preceding, and constitute together a fascicle of powerful claws, well adapted to grasp the various organisms that come within their range.

The 2nd pair of maxillipeds (fig. 9) are most powerfully developed, and of a form peculiar to the present genus. They are, namely, twofold-geniculate, the 1st and 2nd joints forming posteriorly, one with the other, a strong elbow-

medens den korte 6-leddede Endedel med en mere eller mindre tydelig knæformig Boining retter sig bagud. Basalleddet har fortil 3 stumpe Fremspring, hvert besat med 3 korte Borster. 2det Led er betydelig længere, af noget tendannet Form, stærkt muskulost og kun forsynet med 3 simple Borster paa Midten af den bagre Kant. Den korte Endedel er ligeledes i den bagre Kant bevæbnet med 8—10 særdeles stærke leformig krummede og bagudrettede Klor.

Imellem dette Kjævefodpar og 1ste Fodpar er (se Fig. 2) et større Mellemrum, der indtages af et i Midtlinien fremspringende kjolformigt Parti, der ogsaa er tilstede hos mange andre Calanider.

Af de 4 Par Svømmefødder er det 1ste (Fig. 10) betydelig mindre end de øvrige og svagere chitiniseret. Den ydre Gren er neppe længere end den 2leddede Stamme og bestaar kun af 2 Led, idet de 2 første ikke er tydeligt adskilte. Sidste Led er ganske smalt og bærer i den indre Kant 4 lange Svømmeborster foruden en kort simpel Borste ved Spidsen; en lignende Svømmeborste udgaar ogsaa indad fra Enden af det foregaaende Led. Den indre Gren er meget liden, 1-leddet og noget udvidet paa Midten samt i den indre Kant og ved Spidsen forsynet med 5 Svømmeborster. Ved dens Basis udgaar fra Enden af Stammen en tynd, noget bugtet Borste.

2det Par Svømmefødder (Fig. 11) er betydelig kraftigere udviklet. Til Indersiden af Stammens 1ste Led er fæstet en stærk Fjærborste, hvorimod sidste Led mangler Borster og kun viser i den indre Kant en tæt Ciliering. Af Grenene er den ydre særdeles stor, $^1/_2$ Gang til saa lang som Stammen og er delt i 3 tydeligt begrændsede Led, hvoraf det 1ste er mindst. Saavel dette som det betydelig bredere 2det Led har i den ydre Kant fæstet til en stump Fortsats en kort Torn og indad en Svømmeborste. Sidste Led er saa langt som begge de foregaaende tilsammen, stærkt sammentrykt og bredest ved Basis samt i den ydre Kant forsynet med 2 til særegne papilleagtige Fortsatser fæstede Torner. Fra dets indre Kant udgaar 3 Svømmeborster og fra den afstumpede Spids indad en lignende Svømmeborste, udad en kort Torn og i Midten en særdeles kraftig, i den ydre Kant grovt saugtakket Pig. Den indre Gren er neppe halvt saa lang som den ydre og betydelig smalere. Den er ligesom paa 1ste Par 1-leddet, skjøndt der er en Antydning til en Sondring af et kort Basalled. Den bærer ialt 6 Svømmeborster, hvoraf 1 udgaar fra den ydre Kant, 2 fra Spidsen og de 3 øvrige fra den indre Kant.

De 2 følgende Par Svømmefødder (Fig. 12) adskiller sig væsentlig kun fra 2det Par derved, at den indre Gren er delt i 3 tydeligt begrændsede Led og bærer 1 Svømmeborste flere.

Af noget 5te Fodpar er ikke det mindste Rudiment at opdage.

shaped bend, whereas the short, six-jointed terminal part points backward, with a more or less distinct geniculate bend. The basal joint has anteriorly 3 obtuse prolations, each bearing 3 short bristles. The 2nd joint is considerably longer, somewhat fusiform, exceedingly muscular, and furnished with only 3 simple bristles, in the middle of the posterior margin. The short terminal portion is likewise armed along the posterior margin with from 8 to 10 exceedingly strong, falciform, and backward-directed claws.

Between this pair of maxillipeds and the 1st pair of legs (see fig. 2) extends a comparatively wide interspace, occupied by a keel-shaped area projecting along the median line — also present in many other Calanidians.

Of the 4 pairs of natatory legs, the 1st (fig. 10) is considerably smaller than the others, and less decidedly chitinous. The outer branch is scarcely at all longer than the two-jointed stem, and consists of only 2 articulations, the 2 first being not distinctly separated. The last joint is quite slender, and bears on the inner margin 4 long natatory setæ, besides a short, simple bristle at the point; a similar natatory seta also proceeds inward from the end of the preceding articulation. The inner branch is very small, uni-articulate, and somewhat dilated in the middle, as also, on the inner margin and at the point, furnished with 5 natatory bristles. At the base, is seen issuing from the extremity of the stem a slender, somewhat curved bristle.

The 2nd pair of natatory legs (fig. 11) are much more powerfully developed. To the inner surface of the 1st joint of the stem, is affixed a strong plumous bristle, whereas the last joint has no trace of bristles, and exhibits only along the inner margin a dense ciliation. Of the branches, the outer is exceedingly large, half as long again as the stem, and divided into 3 distinctly defined articulations, the 1st being the smallest. Both this and the much broader 2nd joint, have on the outer margin, affixed to an obtuse prolation, a short spine, and inwards a natatory bristle. The last joint equals in length the two preceding ones taken together, is greatly compressed, and broadest at the base, as also on the outer margin furnished with 2 spines, affixed to special papillary prolations. From its inner margin proceed 3 natatory bristles, and springing from the obtuse point, extends inward a similar natatory bristle, outward a short spine, and in the middle an exceedingly powerful, along its outer margin coarsely serrate spike. The inner branch is scarcely half as long as the outer, and much more slender. As on the 1st pair, it is uni-articulate, though a faint indication may be detected of a short basal joint. It bears in all 6 natatory bristles, of which 1 issues from the outer margin, 2 from the point, and the other 3 from the inner margin.

The 2 succeeding pairs of natatory legs (fig. 12) are distinguished from the 2nd pair chiefly by the inner branch being divided into 3 distinctly defined articulations and by its bearing an additional natatory bristle.

Of a 5th pair of legs, not the slightest rudiment can be discerned.

Flere af de indfangede Exemplarer var forsynede med ydre Æggesæk. Denne er noget fladtrykt og af bred elliptisk Form samt indeholder et noget vexlende Antal (fra 10 til 30) Æg af en smuk mørkeblaa Farve.

Den fuldt udviklede *Han* (Fig. 14) er noget mindre end Hunnen og af forholdsvis betydelig spinklere Form. Navnlig er Bagkroppen særdeles tynd, og det 1ste Segment her delt i 2 samt uden noget knudeformigt Fremspring nedentil.

1ste Par Følere stemmer i Længde og Leddenes Antal overens med samme hos Hunnen, og ingen af dem viser nogen Antydning til Geniculation. Derimod udmærker begge disse Følere sig ved en rigelig Besætning af eiendommelige klare, noget sammentrykte eller næsten bladformige Sandsevedhæng, der navnlig i det basale Parti er tæt sammentrængte (se Fig. 15). Paa 2det Led tælles saaledes ikke mindre end 5 saadanne, medens de øvrige Led i Regelen kun har et hvert.

2det Par Følere viser ingen væsentlig Afvigelse fra samme hos Hunnen, hvorimod flere af Munddelene er rudimentære eller ufuldstændigt udviklede.

Saaledes mangler Kindbakkerne (Fig. 16) fuldstændig det egentlige Corpus, og paa Kjæverne (Fig. 17) er ligeledes den egentlige Tyggedel kun tilstede som en liden ubevæbnet Lap. 1ste Par Kjævefødder (Fig. 18) er ogsaa af en meget rudimentær Beskaffenhed, og de paa dem fæstede Børster saa skrøbelige og infiltrede i hverandre, at deres Tal og Anordning vanskeligt lader sig undersøge. Noget mere udviklede er 2det Par Kjævefødder (Fig. 19), skjøndt ogsaa disse er betydelig svagere end hos Hunnen.

I Svømmefoddernes Bygning er ingen væsentlig Forskjel fra samme hos Hunnen at notere.

Derimod forefindes bag disse et Par mægtigt udviklede Lemmer, der forestiller det hos Hunnen ganske manglende 5te Fodpar. Disse Lemmer, der tilbagestrakte rækker selv noget udover Bagkroppens Spids, er omformede til eiendommelige Griberedskaber, hvormed Spermatophorerne gribes og overføres til Hunnens Kjønsaabning. Den venstre Fod (se Fig. 20) bestaar af en tyk og muskulos Basaldel, fra hvis Ende udgaar 2 ulige store og ulige formede Grene. Den ydre af disse er stærkt forlænget og bestaar af 2 Led, hvoraf det 1ste er svagt tenformigt og i den ydre Kant forsynet med et kort tandformigt Fremspring, medens det sidste er omdannet til en noget indadbøiet, i Enden afstumpet cylindrisk Klo, der er noget kortere end det foregaaende Led. Den indre Gren har Formen af et simpelt styletformigt Appendix, der rækker til Enden af den ydre Grens 1ste Led. Den høiere Fod er noget kortere end den venstre og ganske smal. Dens 1ste simpelt cylindriske Led svarer til Basaldelen paa venstre Fod og har ved Spidsen indad et ganske lidet, noget hageformigt Appendix, der forestiller den rudimentære indre Gren. Det følgende Led er lidt fortykket paa Midten og har en meget bevægelig

Several of the specimens collected were ovigerous. The ovisac is slightly depressed and of a broad, elliptic form, containing a somewhat variable number of eggs (from 10 to 30), in colour a beautiful dark-blue.

The fully developed *Male* (fig. 14) is a trifle smaller than the female, and relatively of a much more slender form. The posterior division of the body is in particular exceedingly narrow, and the 1st segment occurs divided in two, as also without any tuberculiform prolation below.

The 1st pair of antennæ agree as to length and number of joints with the corresponding pair in the female, and neither of them exhibit the slightest indication suggesting a geniculate character. On the other hand, both these antennæ are distinguished by numerous, somewhat compressed or well-nigh foliaceous, pellucid sensory appendices, which, more especially in the basal part, occur densely crowded together (see fig. 15). Thus, on the 2nd joint may be counted as many as 5 such appendices, the other joints have, as a rule, only one appendix each.

The 2nd pair of antennæ exhibit no essential deviation from the corresponding pair in the female, whereas several of the oral appendages are rudimentary, or but imperfectly developed.

Thus, in the mandibles (fig. 16), the true corpus is entirely wanting, and on the maxillæ (fig. 17) the true masticatory portion occurs merely as a small, unarmed lobule. The 1st pair of maxillipeds (fig. 18) are likewise most rudimentary in character, and the bristles affixed to those parts alike so fragile and entangled as to render any trustwortly determining of their number and arrangement a matter of extreme difficulty. The 2nd pair of maxillipeds (fig. 19) occur somewhat more developed; but these are also considerably feebler than in the female.

In the structure of the natatory legs, there is no essential deviation to record from that of those organs in the female.

On the other hand, posterior to the said legs, occur a pair of prodigiously developed limbs, representing the 5th pair of legs, entirely absent in the female. These limbs, which, extended backward, reach to even a little beyond the point of the posterior division of the body, are transformed into peculiar prehensile organs, by means of which the spermatophores are clasped and transferred into the generative opening of the female. The left leg (see fig. 20) consists of a thick and muscular basal portion, from the end of which issue 2 branches, differing alike in size and form. The outer of these is greatly produced, and consists of 2 articulations, the 1st of which is slightly fusiform, and exhibits on the outer margin a short, dentiform prolation, whereas the 2nd is transformed into a somewhat incurving, at the extremity obtusely truncate cylindric claw, a trifle shorter than the preceding articulation. The inner branch has the form of a simple, styliform appendix, reaching to the extremity of the 1st articulation of the outer branch. The right leg is somewhat shorter than the left, and quite slender. Its 1st simple cylindric articulation corresponds with the basal part

Articulation med det foregaaende. 3die Led er betydelig kortere og bærer paa Spidsen flere særdeles complicerede Vedhæng, hvoraf nogle er forsynede med Borster, andre med korte Torner (se Fig. 21). Meget afvigende er dette Fodpar bygget hos Hannen af *Euchæta Prestandreæ*, hvor Endekloen paa venstre Fod er betydelig længere og fint tilspidset, ligesom Vedhængene i Enden af høire Fod er af et meget forskjelligt Udseende.

Alle de under Expeditionen fra stort Dyb optagne Exemplarer udmærkede sig ved en særdeles intensiv blodrod Farve, der ogsaa strakte sig til de fleste af Kroppens Vedhæng, med Undtagelse af Haleborsterne, der vare ganske klare og hvis tætte Cilier skiftede i alle Regnbuefarver. Derimod viste nogle mindre Exemplarer, tagne udenfor Storeggen nær Vandskorpen med det fine Net, en langt mindre iøinefaldende Farvetegning, idet de som sædvanlig var ganske gjennemsigtige med kun et ganske svagt blegrødt Skjær paa visse Dele af Legemet. Æggene i Æggesækken er, som ovenfor anført, sædvanlig af en vakker blaa Farve.

Længden af de største under Expeditionen erholdte Exemplarer gaar op til 12^{mm}, en for en fri Copepode colossal Størrelse. Den sædvanlig ved vore Kyster forekommende Form opnaar neppe mere end den halve Størrelse.

Forekomst og Udbredning. Vi har under vor Expedition noteret denne smukke og anselige Copepode fra ikke mindre end 12 forskjellige Stationer. Paa de allerfleste af disse blev Exemplarerne optagne med Trawl eller Bundskrabe fra meget betydelige Dybder, medens Overfladenettet her, selv om det sænkedes dybt under Vandskorpen ikke bragte et eneste Exemplar op. Det er heraf sikkert, at Arten paa disse Punkter holdt sig i de dybere Vandlag. Nøiagtig at angive, fra hvilken Dybde de er optagne, lader sig dog vanskeligt gjøre; men der er Grund til at antage, at de stammer fra de under det tempererede Atlanterhavsvand liggende iskolde, Polarhavet oprindelig tilhørende Vandlag.

Arten, der, som ovenfor anført, først er beskrevet som særskilt Art af A. Boeck, og senere af Moebius fra Pommeranias Expedition i Nordsøen, forekommer ikke ualmindelig langs vor hele Kyst, men opnaar her paa langt nær ikke den Udvikling som i Nordhavets store Dyb, hvorfor man er berettiget til at anse den for en høinordisk Form i Modsætning til *E. Prestandreæ*, der er en sydlig eller Atlanterhavsform.

of the left leg, and has at the point extending inward a very small, somewhat unguiform appendix, representing the rudimentary inner branch. The next articulation is slightly inspissated in the middle, and very movably connected with the preceding. The 3rd articulation is considerably shorter, and bears at the point several exceedingly complicated appendices, some of which are furnished with bristles, others with cilia, others again with short spines (see fig. 21). This pair of legs deviate very much, as to structure, from the male of *Euchæta Prestandreæ*, the terminal claw on the left leg being in this species considerably longer, and acutely pointed; the appendices, too, at the extremity of the right leg present quite a different appearance.

All the specimens brought up on the Expedition from a great depth were distinguished by a vivid blood-red hue, also characterizing most of the appendages of the body, save the caudal bristles, which were quite pellucid, and whose dense cilia kept constantly shifting in all the tints of the rainbow. On the other hand, a few smaller examples, taken off the Storeggen Bank, near the surface of the water, in the finemeshed tow-net, had a far less conspicuous coloration, being as usual quite translucent, with only the faintest reddish tinge over certain parts of the body. The eggs in the ovisac are, as stated above, of a beautiful blue colour.

The length of the largest specimens obtained on the Expedition reaches 12^{mm}, — a colossal size for a free Copepod. The form generally met with off the Norwegian coast attains but little more than half that length.

Occurrence and Distribution. — On the Norwegian Expedition we had to record this beautiful and large-sized Copepod from as many as 12 different Stations. At by far the greater number of these, the specimens were brought up in the trawl or dredge, from very considerable depths, whereas the surface-net, even when sunk in these localities to a depth comparatively great, never succeeded in taking a single example. Hence, it is obvious, that the species hereabouts must inhabit the deeper strata. Meanwhile, to give the precise depth from which the specimens were collected, would be a difficult matter; but there is reason to assume as the habitat of the species the ice-cold strata of the Polar current, extending beneath the temperate Atlantic water.

This form, which, as stated above, was first described specifically by A. Boeck, and subsequently by Moebius, from the "Pommerania" Expedition in the North Sea, occurs not infrequently along the entire range of the Norwegian coast, though far from attaining there a development comparable to that it exhibits in the great deeps of the Northern Ocean; and hence we are warranted in regarding the animal as a high Northern form, in contradistinction to *E. Prestandreæ*, which is a southern or Atlantic species.

Ordo Cirripedia.

Subordo 1. *Thoracica.*

Fam. 1. Lepadidæ.

Gen. **Scalpellum.** Leach.

77. Scalpellum Strømii. M. Sars.

(Pl. XX. Fig. 1, 2.

Scalpellum Strømii. M. Sars. Christiania Vid. Selsk. Forhandl. f. 1858, pg. 158.

Scalpellum Strømii, Smith & Harger, Report on the dredging in the region of St. Georges banks in 1872, pg. 35, Pl. III, fig. 9.

Artscharacteristik. Capitulum aflangt rhomboidalt, noget udvidet mod Enden, med Apex kort og beliggende nedenfor Kropsaxen. Valvlerne glatte, uden udpræget Sculptur og tydeligt begrændsede ved smale mellemliggende hudagtige Partier. Kjolen stærkt vinkelformigt boiet, med tydelig Umbo. Tergalstykkerne uligesidet triangulære, med Aabningsranden kortest. Skjoldene uden tydelig Umbo, ulige firsidede. De øvre Sidestykker næsten af samme Brede som Skjoldene, med tydelig fremspringende Umbo. Basalstykkerne af ulige Størrelse, de dorsale størst, ved Basis svagt fremspringende, de midtre 5-kantede, de ventrale mindst, ulige firsidede. Rostrum kiledannet, bredere ved Basis. Stilken kort, stærkt boiet og tæt belagt med store taglagte Kalkskjæl. Den ydre Bekladningsmembran glat. Farven snehvid med orangefarvede gjennemskinnende Indvolde. Længden indtil 13^{mm}.

Findesteder. Stat. 33, 79, 190, 255, 260, 261.

Bemærkninger. Da der af denne Form hidtil ikke er leveret nogen mere udførlig Beskrivelse, giver jeg nedenfor en saadan, væsentlig til Sammenligning med de nye længere nedenfor beskrevne Arter. Fra den tidligere i de nordiske Have observerede Art, *Sc. vulgare* Leach, er den let kjendelig ved Skallens snehvide Farve, den glatte ydre Membran, fremdeles ved den mindre stærkt fremspringende Apex, Rostrums Form og de betydelig større Kalkskjæl paa Stilken.

Beskrivelse. Legemet er (se Pl. XX. Fig. 1 og 2) temmelig kort og undersætsigt, med Capitulum betydelig større og bredere end Stilken og som sædvanlig stærkt sammentrykt fra Siderne. Hvad Legemets Stilling angaar, saa er det altid fæstet paa en saadan Maade til forskjellige submarine Gjenstande, at Capitulum er rettet skraat nedad, med den ventrale Rand mere eller mindre vendt indad mod det Formaal, der danner Fæstet for Dyret.

Selve Capitulum er seet fra Siden (Fig. 1) af aflang rhomboidal Form og noget udvidet mod Enden, med Breden

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Scalpellum Strømii. M. Sars. Christiania Vid. Selsk. Forhandl. for 1858, p. 158.

Scalpellum Strømii, Smith & Harger, Report on the dredging in the region of St. George's banks in 1872, p. 35, Pl. III, fig. 9.

Specific Character. — Capitulum oblongo-rhomboidal, somewhat expanded towards end, with apex short and placed below axis of body. Valves smooth, without prominent sculpturing, and distinctly defined by narrow, intervening cutaneous parts. Keel pronounced angular, with distinct umbo. Tergal segments inequilateral-triangular, with occluding margin shortest. Shields — without distinct umbo — irregular-quadrilateral. The upper lateral segments, well-nigh equal in breadth to the shields, with distinctly projecting umbo. Basal segments differing in size, dorsal largest, at base slightly projecting, median pentagonal, ventral smallest, in form irregular-quadrilateral. Rostrum wedge-shaped, broader at base. Peduncle short, sharply bent, and covered over with large imbricate calcareous scales. Outer investing membrane smooth. Colour a snowy white; viscera orange, shining through the integument. Length reaching 13^{mm}.

Locality. — Stats. 33, 79, 190, 255, 260, 261.

Remarks. — No detailed description of this form having as yet been furnished, I give one here, chiefly to serve for comparing the animal with the recently discovered species described below. From the species previously observed in Northern Seas, viz. *Sc. vulgare* Leach, it may at once be distinguished by the snow-white colour of the shell and the smooth outer membrane; also by its far less projecting apex, the form of the rostrum, and the much larger calcareous scales on the peduncle.

Description. — The body (see Pl. XX. figs. 1, 2) is rather short and thickset, with the capitulum considerably longer and broader than the peduncle, and, as usual, greatly compressed from the sides. As regards the position of the body, its mode of attachment to the different submarine objects is invariably such, that the capitulum takes an oblique downward direction, with the ventral margin turned more or less in towards the object serving for the attachment of the animal.

The capitulum itself, viewed from the side (fig. 1), is oblongo-rhomboidal in form, and somewhat expanded

betydelig større end den halve Længde. Apex er forholdsvis kun lidet fremspringende og udgaar nedenunder Kropsaxen eller i nogenlunde lige Flugt med Aabningsranden (margo occludens). Som sædvanlig dækkes Capitulum af 14 Kalkstykker eller Valvler, 2 uparrede og 6 parrede. De er alle tydeligt begrændsede og skilte ved smale mellemliggende Hudstriber. Overfladen af Valvlerne er næsten ganske glat, eller kun forsynet med svagt udprægede concentriske og endnu utydeligere radiære Striber.

Kjølen (carina), der dannes af den dorsale uparrede Valvel, er vel udviklet og temmelig høi samt viser sig tydeligt at bestaa af 5 med hverandre fast forbundne Stykker, et smalt uparret i Midten (tectum) og 2 parrede Sidestykker (parietas og intra-parietas). Den er i sit ydre Parti stærkt vinkelformigt bøiet, med en tydeligt udpræget Umbo, der paa Grund af Apex's Korthed ligger nærmere denne end Basis af Capitulum.

Tergalstykkerne (terga), der tilsammen danner den saakaldte Apex, er af smal uligesidet triangulær Form, med Aabningsranden (margo occludens) betydelig kortere end nogen af de 2 øvrige. Den dorsale spidst udløbende Ende af disse Stykker ligger indkilet mellem Kjølen og de øvre Sidestykker.

Skjoldene (scuta), der til hver Side begrændser det nedre Parti af Skallens Aabning, er af uregelmæssig firkantet Form og uden nogen tydeligt udpræget Umbo. Af de 4 Sider er den frie mod Skallens Aabning vendte længst, de 3 øvrige næsten af ens Længde.

De øvre Sidestykker (latera superiora), der omtrent indtager Midten af Capitulums Sider og foruden af de ovennævnte Valvler tillige begrændses af 2 af Basalstykkerne, er vistnok mindre end Skjoldene, men neppe smalere, skjævt 5-kantede og forsynede med en meget tydelig subcentral Umbo.

De basale Sidestykker, der umiddelbart stoder op til Stilken, danner tilsammen en Tværrad, der indtager hele Capitulums Brede og skiller sig fra hverandre baade i Størrelse og Form. De dorsale Stykker (latera carinalia), der omfatter mellem sig den basale Del af Kjølen, er størst og af en noget uregelmæssig aflang Form, med det basale Hjørne noget fremspringende og opadkrummet. De midterste Basalstykker (latera infero-mediana) er 5-kantede, omtrent lige brede ved Basis som ved Apex, der dannes af de 2 korteste Sider. De ventrale Basalstykker (latera rostralia) er uregelmæssigt 4-kantede, med den basale Side kortest, den apicale længst.

Rostrum (se Fig. 2), der danner den ventrale uparrede Valvel og ligger indkilet mellem de 2 ventrale Basalstykker, er vistnok den mindste af alle Valvlerne, men dog betydelig større end hos *Sc. vulgare*, hvor det er ganske og aldeles rudimentært. Af Form er det pyramidalt eller kiledannet, bredest ved Basis og jevnt afsmalnende mod Spidsen, der rækker til Enden af de ventrale Basalstykker og begrændser Skalaabningen i Midten.

towards the extremity, with the breadth considerably exceeding half the length. The apex, projecting comparatively but little, juts out beneath the axis of the body, or well-nigh in a line with the occluding margin (margo occludens). As usual, the capitulum is covered by 14 calcareous segments, or valves, 2 odd and 6 even. They are all distinctly marked off, and separated by narrow intervening cutaneous strips. The surface of the valves is almost entirely smooth, or exhibits merely faint concentric lines and still more indistinct radial striæ.

The keel (carina), formed by the odd dorsal valve, is well developed, and rather high, as also distinctly seen to consist of 5 segments, firmly connected together, viz. — a narrow, odd segment in the middle (tectum) and 2 even lateral segments (parietas and intra-parietas). Its outer part exhibits a sharp angular bend, with a prominent umbo, which, owing to the shortness of the apex, lies nearer to the latter than to the base of the capitulum.

The tergal segments (terga), forming together the so-called apex, has a narrow, inequilateral-triangular form, with the occluding margin (margo occludens) considerably shorter than either of the 2 others. The dorsal, acutely protruding extremity of these segments, lies wedged in between the keel and the upper lateral segments.

The shields (scuta), which, on either side, limit the lower part of the opening in the shell, have an irregular-quadratic form, without any distinctly prominent umbo. Of the 4 sides, that occurring free and turned towards the opening in the shell is longest, the remaining 3 are well-nigh equal in length.

The upper lateral segments (latera superiora), occupying about the middle of the sides of the capitulum and defined, exclusive of the forementioned valves, also by 2 of the basal, are indeed smaller than the shields, but scarcely narrower, oblique-pentagonal in form, and furnished with a well-marked subcentral umbo.

The basal lateral segments, adjoining the peduncle, constitute a transverse series, occupying the entire breadth of the capitulum, and differ alike in size and in form. The dorsal segments (latera carinalia), which embrace the basal part of the keel, are largest, and of a somewhat irregular-oblong form, with the basal corner slightly projected and curving upward. The median basal segments (latera infero-mediana) are pentagonal, about equally broad at the base and at the apex, with the latter formed by the 2 shortest of the sides. The ventral basal segments (latera rostralia) are irregular-quadratic, having the basal side the shorter, the apical the longer.

The rostrum (see fig. 2), that forms the ventral odd valve, and lies wedged in between the 2 ventral basal segments, is indeed the smallest valve of all, but nevertheless considerably larger than the corresponding part in *Sc. vulgare*, which occurs quite rudimentary. In form, the rostrum is pyramidal or wedge-shaped, broadest at the base, and tapers gradually toward the point, that reaches the extremity of the ventral basal segments and defines the opening of the shell in the middle.

Stilken er kort og undersætsig, stærkt indknebet ved Basis og viser altid en stærk ventral Boining. Den er tæt belagt med forholdsvis store og regelmæssige Kalkskjæl, der dække hverandre tagstenformigt, alene med Undtagelse af de nærmest Befæstningspunktet beliggende, der er meget smaa og rudimentære.

Den ydre gjennemsigtige Membran, der overtrækker saavel Capitulum som Stilken, er ganske glat, uden Spor af de fine Smaapigge, som forefindes her hos *Sc. vulgare*.

Selve Dyret synes ikke i nogen væsentlig Grad at skille sig fra samme hos *Sc. vulgare*. De 6 Par leddede og borstebesatte Lemmer, der benævnes Cirrer eller Ranker, sees paa Figurerne delvis fremstrakte af Skallens Aabning.

Paa Indsiden af Skjoldene nær deres Rand observeredes hos denne ligesom hos de følgende Arter ofte en eller 2 supplementære Hanner af samme mikroskopiske Lidenhed og rudimentære Udseende som hos *Sc. striolatum* (se nedenfor).

Farven er i Modsætning til *Sc. vulgare*, der altid er mere eller mindre graabrun eller brunviolet, her rent snehvid, med orangefarvede gjennemskinnende Indvolde (Æggestokke).

Længden af de største Individer gaar op til 13^{mm}.

Forekomst. Flere Exemplarer af denne smukke Art blev under Expeditionen tagne i Vestfjorden (Stat. 255), Porsangerfjord (Stat. 260) og Tanafjord (Stat. 261) fæstede til Ror af *Tubularia indivisa* og *Sertularella Gayi*. Desuden blev den observeret paa Stat. 79 i Havet V af Nordlandskysten, samt paa 2 Stationer tilhørende den kolde Area (Stat. 33 og 190), Dybden indtil 870 Favne. Arten er ikke nalmindelig ved vor Vest- og Nordkyst paa større Dyb og er nylig ogsaa noteret fra Nordamerikas Østkyst.

The peduncle is short and thick, greatly instricted at the base, and has, without exception, a sharp ventral bend. It is everywhere overlaid with large and regular calcareous scales, imbricate in arrangement, saving only those nearest the point of attachment, which are small and rudimentary.

The outer translucent membrane, investing alike both capitulum and peduncle, is quite smooth, without a trace of the delicate spikelets that occur here in *Sc. vulgare*.

The animal itself would not appear to exhibit any essential difference from *Sc. vulgare*. The 6 pairs of articulated and bristle-bearing limbs designated cirrhi, or tendrils, are shown in the figures, partially extending from the orifice in the shell.

On the inner side of the shields, in close proximity to their margin, was frequently observed, both in this and the succeeding species, one or two supplementary males, of the same microscopic dimensions and rudimentary aspect as in *Sc. striolatum* (see below).

The colour, unlike that of *Sc. vulgare*, which invariably occurs as a more or less greyish-brown or brownish-yellow, is a pure snowy white, with the orange-tinted viscera (ovaries) shining through the integument.

Length of the largest specimens reaching 13^{mm}.

Occurrence. — Several examples of this beautiful species were taken on the Expedition, in the Vestfjord (Stat. 255), the Porsangerfjord (Stat. 260), and the Tanafjord (Stat. 261), attached to the tubes of *Tubularia indivisa* and *Sertularella Gayi*. Moreover, the same animal was observed at Stat. 79, in the open sea, west of the coast of Nordland, also at 2 Stations within the cold area (Stats. 33 and 190); depth ranging to 870 fathoms. The species is not uncommon off our western and northern shores at a considerable depth, and has also been lately recorded from the east coast of North America.

78. Scalpellum angustum, G. O. Sars. n. sp.

(Pl. XX, Fig. 3 & 4).

Scalpellum Strömii, Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Österr.-Ungar. Nordpol-Exped. pg. 15, tab. IV, fig. 13 & 14 (non M. Sars).

Scalpellum angustum, G. O. Sars, Crustacea et Pycnogonida nova Exped. Norvegiæ No. 44.

Artscharacteristik. Capitulum aflangt ovalt, neppe udvidet mod Enden, med Apex stærkt uddraget tilspidset og næsten beliggende i Skallens Axe. Valvlerne vel begrændsede, glatte, uden tydeligt udpræget Sculptur. Kjolen smal, jevnt buet, uden Umbo. Tergalstykkerne med Aabningsranden af samme Længde som Basalranden. Skjoldene

78. Scalpellum angustum, G. O. Sars. n. sp.

(Pl. XX, figs. 3, 4).

Scalpellum Strömii, Heller, Crustaceen, Pycnogoniden und Tunicaten der K. K. Österr.-Ungar. Nordpol-Exped. p. 15, Pl. IX, figs. 13, 14 (non M. Sars).

Scalpellum angustum, G. O. Sars, Crustacea et Pycnogonida nova Exped. Norvegicæ, No. 44.

Specific Character. — Capitulum oblong-oval, scarcely at all expanded towards extremity, with apex greatly produced, pointed, and placed well-nigh in axis of shell. Valves well developed, smooth, without strictly prominent sculpturing. Keel narrow, uniformly arched, no umbo. Tergal segments with occluding margin equal in length

bredere end de øvre Sidestykker, med den apicale Vinkel uddraget og tilspidset. De dorsale Basalstykker ikke fremspringende ved Roden; de mellemste og ventrale omtrent af samme Form som hos *Sc. Strømii*. Rostrum særdeles smalt, lineært, ikke udvidet ved Basis. Stilken forlænget, næsten af Capitulums Længde, lige, ikke boiet, cylindrisk og beklædt med faa og store skraatliggende Kalkskjæl, der ikke dække hverandre indbyrdes. Den ydre Beklædningsmembran glat. Farven snehvid. Længden indtil 13^{mm}.

Findesteder. Stat. 18, 343.

Bemærkninger. Denne under den Oster.-Ungarske Nordpolexpedition opdagede Art er let kjendelig fra *Sc. Strømii*, med hvilken Heller feilagtigt har identificeret den, ved den smale og langstrakte Form, den jevnt buede Kjøl, den stærkt fremspringende og næsten i Skallens Axe liggende Apex, Rostrums eiendommelige Form samt ved den lige, aldrig buede, og med spredte skjævtliggende Kalkskjæl beklædte Stilk.

Beskrivelse. Legemet er (se Pl. XX, Fig. 3 og 4) idethele betydelig slankere end hos foregaaende Art og indtager en ganske anden Stilling i Forhold til de Gjenstande, hvortil det er fæstet, idet Stilken her aldrig viser den characteristiske Bøining som hos *Sc. Strømii*, men gaar i lige Flugt med Capitulum.

Dette sidste er seet fra Siden (Fig. 3) af aflang oval Form, omtrent dobbelt saa langt som bredt, med Aabningsranden svagt buet og Apex stærkt uddraget, tilspidset samt næsten beliggende i Skallens Axe. De 14 Valvler er alle tydeligt begrændsede ved smale mellemliggende hudagtige Partier og er ligesom hos foregaaende Art glatte, uden nogen skarpt udpræget Sculptur.

Kjolen er ganske smal og jevnt buet, uden at vise nogen tydelig Umbo, saaledes som Tilfældet er hos *Sc. Strømii*.

Tergalstykkerne er forholdsvis store og har Aabningsranden omtrent af samme Længde som Basalranden.

Skjoldene viser en lignende Form som hos foregaaende Art, men er forholdsvis noget større og har den apicale Vinkel uddraget til et rostrumlignende udover Siderne af Tergalstykkerne ragende Fremspring.

De øvre Sidestykker er kjendeligt smalere end Skjoldene og noget længere end brede, forøvrigt forsynede med et lignende umboformigt Fremspring som hos *Sc. Strømii*.

Af Basalstykkerne er ogsaa her de dorsale størst, men af en noget anden Form end hos foregaaende Art og ikke som hos denne fremspringende ved Roden. De midterste og ventrale Basalstykker skiller sig lidet i sin Form fra samme hos *Sc. Strømii*.

to basal. Shields broader than upper lateral segments, with apical angle produced and pointed. Dorsal basal segments not projecting at origin; median and ventral almost similar in form to those of *Sc. Strømii*. Rostrum exceedingly narrow, linear, not expanded at base. Peduncle elongate, equalling nearly capitulum in length, straight, not bent, cylindric, and with a few but large obliquely arranged, non-imbricate calcareous scales. Outer investing membrane smooth. Colour a snowy white. Length reaching 13^{mm}.

Locality. — Stats. 18, 343.

Remarks. — This species, discovered on the Austro-Hungarian North Pole Expedition, is easy to recognize from *Sc. Strømii*, with which Heller has erroneously identified it, by reason of the slender and elongate form, the uniformly arched carina, the greatly projected apex, extending well-nigh in the axis of the shell, the peculiar form of the rostrum, as also the straight — in no case arcuate — peduncle, overlaid with scattered obliquely disposed calcareous scales.

Description. — The body (see Pl. XX, figs. 3, 4) is, on the whole, much more slender than in the preceding species, and has, with regard to the objects to which it is attached, quite a different position, the peduncle never exhibiting the flexure characteristic of *Sc. Strømii*, but proceeding in a line with the capitulum.

The latter, viewed from the side (fig. 3), is of an oblong-oval form, about twice as long as broad, with the occluding margin slightly arcuate and the apex greatly produced, pointed, and extending well-nigh in the axis of the shell. The 14 valves are all distinctly defined by narrow, intervening cutaneous strips, and occur, as in the preceding species, perfectly smooth, without any prominent sculpturing.

The keel is quite narrow and evenly arched, and does not exhibit any distinctly defined umbo, such as occurs in *Sc. Strømii*.

The tergal segments are comparatively large, and have the occluding margin about equal in length to the basal.

The shields exhibit a similar form to those in the preceding species, but are relatively somewhat larger, and have the apical angle produced to a rostrum-like prolation, jutting over the sides of the tergal segments.

The upper lateral segments are appreciably narrower than the shields, and a trifle longer than broad. — for the rest, furnished with an umbo-shaped prolation similar to that in *Sc. Strømii*.

Of the basal segments, the dorsal are here, too, the largest, though of a somewhat deviating form from that in the preceding species, and not, as in the latter animal, projected at the base. The median and ventral basal segments differ but little as to form from those parts in *Sc. Strømii*.

Derimod er Rostrum (se Fig. 4) af et helt andet Udseende. Det er nemlig særdeles smalt, linieformigt og ikke bredere ved Basis end ved Spidsen.

Stilken er næsten af Capitulums Længde, temmelig regelmæssigt cylindriskt og ganske lige. Kalkskjællene er ogsaa kjendeligt forskjellige, idet de er mere spredte, saa at de ikke som hos *Sc. Strømii* dække hverandre gjensidigt, men er skilte ved større tyndhudede Mellemrum. De er ordnede i skjæve Tværrækker og er størst i Midten af Stilkens Længde.

Den ydre Beklædningsmembran saavel paa Capitulum som Stilken er som hos *Sc Strømii* ganske glat, uden Spor af Pigge.

Farven er hos alle de undersøgte Exemplarer ensformig snehvid.

Længden af de største Individer gaar op til 13^{mm}.

Forekomst. Adskillige Exemplarer af denne Art blev under Expeditionen indsamlede, fæstede til Tubularierør og Spongier fra 2 forskjellige Stationer. Den ene af disse (Stat. 18) ligger i Havet mellem Norge og Færøerne, den anden (Stat. 343) SV af Spitsbergen; Dybden fra 412 til 743 Favne. Begge Stationer tilhører den kolde Area. Arten er nordlig udbredt til Havet om Franz Josephs Land, hvor den først blev fundet under den Oster.-Ungarske Nordpolexpedition.

On the other hand, the rostrum (see fig. 4) has quite a different appearance. It is exceedingly narrow, linear, and not broader at the base than at the point.

The peduncle is well-nigh equal in length to the capitulum, almost cylindric, and quite straight. The calcareous scales, too, are appreciably different, being more scattered, and not imbricate as in *Sc. Strømii*, but separated one from the other by a relatively thin-skinned interspace. They occur in oblique transversal series, and are largest on the middle part of the peduncle.

The outer investing membrane, alike on the capitulum and the peduncle, is, as in *Sc. Strømii*, quite smooth, without a trace of spikes.

Colour, in all the specimens examined, a uniform snowy white.

Length of the largest individuals reaching 13^{mm}.

Occurrence. — Several specimens of this form were collected on the Expedition, at different Stations, attached to sponges and tubulariæ. One of these Stations (Stat. 18) was located in the tract of ocean between Norway and the Færoes, the other (Stat. 343) lay south-west of Spitzbergen; depth ranging from 412 to 743 fathoms. Both Stations lay within the cold area. The species extends northward to the Sea surrounding Franz Joseph's Land, where it was first observed on the Austrio-Hungarian North Pole Expedition.

79. Scalpellum striolatum, G. O. Sars, n. sp.

Pl. XX, Fig. 5—7).

Scalpellum striolatum, G. O. Sars, Prodromus descript. Crust. & Pycnog. Exped. Norv., No. 156.

Artscharacteristik. Capitulum temmelig regelmæssigt ovalt eller elliptiskt, mere end dobbelt saa langt som bredt, ikke udvidet mod Enden, med Apex forholdsvis kort og noget opadbøiet samt beliggende omtrent i Skallens Axe. Valvlerne tæt sammenstødende, med tydeligt fremtrædende Sculptur af radierende Ribber. Kjølen smal, jevnt buet, uden Umbo. Tergalstykkerne meget store, med Aabningsranden kortere end Basalranden. Skjoldenes apicale Vinkel spidst udtraget. De øvre Sidestykker bredere end Skjoldene, med 5 mere fremtrædende radierende Kjøler og et stærkt umboformigt Fremspring. De dorsale Basalstykker forholdsvis brede, uligesidet 4-kantede, ikke fremspringende ved Roden; de midterste Basalstykker smaa, triangulære, med det basale Parti kileformigt afsmalnende; de ventrale Basalstykker noget mindre end de dorsale, men større end de midterste. Rostrum mindre tydeligt begrændset fra Basalstykkerne, pyramidalt, bredest ved Basis. Stilken kort, noget indknebet ved Roden, lige, dækket af store taglagte

79. Scalpellum striolatum, G. O. Sars, n. sp.

(Pl. XX, figs. 5—7).

Scalpellum striolatum, G. O. Sars, Prodromus descript. Crust. & Pycnog. Exped. Norv., No. 156.

Specific Character. — Capitulum rather closely approximating an oval or elliptic form, more than twice as long as broad, not expanded towards the end, with apex relatively short and bent a trifle upwards, as also extending well-nigh in the axis of the shell. Valves in close contact, with a clearly prominent sculpture of radiating ribs. Keel slender, evenly arcuate, without umbo. Tergal segments very large, with occluding margin shorter than basal. Apical angle of shields acutely produced. Upper lateral segments broader than shields, with 5 rather prominent radiating keels and a strong umbo-shaped projection. Dorsal basal segments comparatively broad, irregular-quadratic, not projecting at base; median basal segments small, triangular, with basal part tapering wedge-shaped; ventral basal segments somewhat smaller than dorsal, but larger than median. Rostrum not very distinctly defined from basal segments, pyramidal in form, broadest at base. Peduncle short, slightly instricted at base, straight, overlaid

Kalkskjæl. Den ydre Beklædningsmembran overalt ru af fine Smaapigge. Farven ensformig hvid. Længden indtil 35^{mm}.

Findesteder. Stat. 18. 35. 312.

Bemærkninger. Denne anselige Form er strax kjendelig fra de 2 foregaaende Arter, foruden ved sin betydelige Storrelse, ved den overalt af fine Smaapigge ru ydre Beklædningshinde og ved den særdeles tydelige og elegante Sculptur af Skallens Valvler, hvilket har givet Anledning til Artsbenævnelsen.

Beskrivelse. Legemet er (se Pl. XX, Fig. 5 & 6) forholdsvis kort og undersætsigt, med Capitulum betydelig baade længere og bredere end Stilken. Det har en lignende Stilling i Forhold til de Gjenstande, hvortil det er fæstet som hos *Sc. angustum*, idet Stilken ingen mærkbar Boining viser.

Capitulum er seet fra Siden (Fig. 5) temmelig regelmæssigt ovalt eller elliptiskt, mere end dobbelt saa langt som bredt, med den ventrale Rand jevnt buet og Apex forholdsvis kort, men skarpt tilspidset og noget opadkrummet samt beliggende næsten noiagtig i Skallens Axe. Valvlerne er indbyrdes meget fast forbundne, idet de stode umiddelbart op til hverandre og kun er skilte ved smale, tildels utydelige Suturer. De viser alle en meget skarpt udpræget og elegant Sculptur, idet der foruden concentriske Vækststriber findes talrige, tildels kjolformigt fremspringende radierende Ribber.

Kjolen er som hos foregaaende Art ganske smal og jevnt buet, uden nogen tydelig Umbo og fortsætter sig nedad lige til Stilkens Begyndelse.

Tergalstykkerne er meget store, men har Aabningsranden kjendelig kortere end Basalranden.

Skjoldene er forholdsvis smale, og af en lignende uregelmæssig 4-sidet Form som hos de 2 foregaaende Arter; dog er Tergalranden her neppe længere end Basalranden og begge betydelig kortere end Lateralranden. Det apicale Hjorne er ligesom hos *Sc. angustum* spidst udtrukket.

De ovre Sidestykker har det dorsale mod Kjolen vendte Parti noget kileformigt afsmalnende og den ventrale Rand uregelmæssigt bugtet. De viser en meget tydelig subcentral Umbo, hvorfra 5 mere fremspringende Kjole radierer.

Af Basalstykkerne er de dorsale temmelig store og brede, uregelmæssig 4-sidede og viser intet Fremspring ved Roden; de mellemste Stykker er meget smaa og af en fra samme hos de 2 foregaaende Arter væsentlig forskjellig Form, idet de er smalt triangulære eller kileformige, med Spidsen vendt mod Basis; de ventrale Stykker er mere end dobbelt saa store og af 4-kantet Form.

with large imbricate calcareous scales. Outer investing membrane everywhere rough, from numberless minute spikelets. Colour a uniform white. Length reaching 35^{mm}.

Locality. — Stats. 18. 35. 312.

Remarks. — This large and striking form can be at once recognized from the 2 preceding species, not only by its considerable size but also by the outer investing membrane, rendered everywhere rough from minute spikelets, and the very distinct and graceful sculpture on the valves of the shell, a character that suggested the specific designation.

Description. — The body (see Pl. XX, figs. 5, 6) is comparatively short and thickset, with the capitulum both longer and broader than the peduncle. It has a position in relation to the objects whereto it is attached similar to that in *Sc. angustum*, the peduncle not exhibiting any appreciable flexure.

The capitulum, viewed from the side (fig. 5), is approximately of a regular oval or elliptic form, more than twice as long as broad, with the ventral margin evenly arched and the apex comparatively short, but acutely pointed and curving slightly upward, as also well-nigh coinciding with the axis of the shell. The valves are very firmly connected, coming as they do in close contact, with but narrow and partly indistinct separating sutures. They all exhibit a very sharply pronounced and graceful sculpture, a number of keel-like, radiating ribs occurring along with concentric striæ of growth.

The keel, as in the preceding species, is quite slender and evenly arched, without any distinct umbo, extending downward to the commencement of the peduncle.

The tergal segments are very large, but have the occluding margin appreciably shorter than the basal.

The shields are comparatively narrow, and of a similar, irregular-quadratic form to those in the 2 preceding species; the tergal margin, however, is scarcely at all longer than the basal, and both are much shorter than the lateral. The apical corner occurs, as in *Sc. angustum*, acutely produced.

The upper lateral segments have the dorsal part turned towards the keel, somewhat cuneiform-tapering, with the ventral margin irregularly flexuous. They exhibit a very distinct subcentral umbo, from which radiate 5 more prominent carinæ.

Of the basal segments, the dorsal are rather large and broad, irregular-quadratic, and exhibit no projection at the base; the median segments are very small, and of a form essentially different from that distinguishing the said parts in the 2 preceding segments, being narrow-triangular or cuneiform, with the point turned towards the base; the ventral segments are more than twice as large, and quadrangular in form.

Rostrum er (se Fig. 6) mindre tydeligt begrændset fra Basalstykkerne, saa at jeg først tog feil af dets Form. Det synes imidlertid at være vel udviklet og kileformigt eller pyramidalt som hos *Sc. Strømii*, med Basalranden temmelig bred, og jevnt afsmalnende mod Spidsen.

Stilken er forholdsvis kort, neppe mere end halvt saa lang som Capitulum og noget indknebet paa Midten, uden dog at vise nogen mærkbar Boining. Den er som hos *Sc. Strømii* dækket af store regelmæssigt taglagte Kalkskjæl, der alene ved den noget udbredte Basis bliver meget smaa og rudimentære.

Den ydre Beklædningsmembran er overalt, saavel paa Capitulum som Stilken, ru af fine Smaapigge, der ligesom et fint Dun overdrager hele Legemet.

Paa et af de undersøgte Exemplarer fandtes fæstede til Indsiden af Skjoldene nær deres Aabningsrand 2 af de eiendommelige supplementære Hanner, hvoraf den ene er afbildet Fig. 7 stærkt forstørret. Legemet er blødt, uden Spor af Valver eller Kalkplader, hvorimod den tynde contractile Hud er overalt ru af yderst fine Smaapigge. Af Form er det temmelig regelmæssigt ovalt og viser i den ene Ende en af 4 læbeformige Fortykkelser begrændset Aabning, hvorigjennem et Bundt af stive Børster (de rudimentære Ranker) rager frem. Paa den ene Side af Legemet og i temmelig betydelig Afstand fra den aborale Ende sees de 2 Hefteantenner med sine Børster og Hefteskiver. Legemet er fyldt med et fint kornet Indhold og i den ydre Hud sees tydelige fra Hefteorganerne radierende fine Muskelfibre.

Farven er som hos de 2 foregaaende Arter ensformig hvid.

Længden af det største erholdte Exemplar er 35^{mm}, og nærværende Form hører saaledes til de største bekjendte Arter af Slægten.

Forekomst. Vi har taget denne smukke Art paa 3 forskjellige Stationer, alle tilhørende den kolde Areas Dyb. Af disse ligger de 2 (Stat. 18 og 35) i Havet mellem Norge og Færoerne, den 3die (Stat. 312) NV af Beeren Eiland; Dybden fra 412 til 1081 Favne. Exemplarerne fandtes fasthæftede dels til Spongier, dels til Smaastene fra Havbunden.

The rostrum (see fig. 6) is less distinctly marked off from the basal segments, a character that at first led me to misapprehend its form. Meanwhile, it would appear to be well developed, and cuneiform or pyramidal, as in *Sc. Strømii*, with the basal margin rather broad and gradually tapering toward the extremity.

The peduncle is comparatively short, scarcely more than half as long as the capitulum, and a trifle constricted in the middle, without however exhibiting any appreciable flexure. As in *Sc. Strømii*, it is covered with large calcareous imbricate scales, and which, at the somewhat expanded base only, become exceedingly small and rudimentary.

The outer investing membrane is everywhere, both on the capitulum and the peduncle, rough to the feel from minute spikelets, which, with the aspect of a delicate pubescence, extend over the whole body.

On one of the specimens examined, were found, attached to the inner side of the scuta, near their occluding margin, 2 of the peculiar supplementary males, one of which has been represented in fig. 7, highly magnified. The body is soft, without a trace of valves or calcareous plates, whereas the tenuous, contractile skin occurs everywhere roughened, from exceedingly minute spikelets. In form, it is approximately oval, and exhibits at one extremity an orifice, defined by 4 labiate inspissations, through which a fascicle of stiff bristles (the rudimentary tendrils) are seen to project. On one side of the body, and placed at a considerable distance from the aboral end, occur the 2 antennæ of attachment, with their bristles and discs. The body contains a finely granular substance; and in the outer integument may be distinctly seen delicate muscular fibres, radiating from the organs of attachment.

Colour, as in the 2 preceding species, a uniform white.

Length of the largest specimen obtained 35^{mm}, and hence the present form ranks among the largest known species of the genus.

Occurrence. — This beautiful species was taken on the Norwegian Expedition at 3 different Stations, all belonging to the cold area. Two (Stats. 18, 35) lay in the tract of ocean between Norway and the Færoes, the 3rd (Stat. 312) north-west of Beeren Eiland; depth ranging from 412 to 1081 fathoms. The specimens were found in part attached to sponges, in part to rubble from the sea-bed.

80. Scalpellum cornutum, G. O. Sars. n. sp.

(Pl. XX. Fig. 8—10).

Scalpellum cornutum, G. O. Sars. Crustacea et Pycnogonida nova Exped. Norv. No. 45.

Artscharacteristik. Capitulum aflangt ovalt. ikke udvidet mod Enden. med Apex forholdsvis kort og beliggende nedenfor Skallens Axe. Valvlerne tæt sammenstødende, med skarpt udpræget Sculptur af radierende ophøiede Linier. Kjølen jevnt buet. uden Umbo. Tergalstykkerne store. med Aabningsranden noget kortere end Basalranden. Skjoldene forholdsvis brede. med det apicale Hjorne stærkt uddraget og tilspidset. rostrumlignende. De dorsale Basalstykker fremspringende til hver Side af Kjolens basale Parti i Form af 2 hornformige tilbagekrummede Fortsatser; de midtre Basalstykker bredest ved Basis med en stærkt ophøiet central Umbo; de ventrale Basalstykker meget mindre end de øvrige. Rostrum særdeles lidet. næsten rudeformigt. Stilken kort. indknebet ved Basis og tydeligt bøiet samt beklædt med store taglagte Kalkskjæl. Den ydre Beklædningsmembran glat. Farven hvid. Længden indtil 11^{mm}.

Findesteder. Stat. 124. 267. 359.

Bemærkninger. Denne Art kjendes let fra de foregaaende ved den eiendommelige Form af de dorsale Basalstykker og af Rostrum samt ved den særdeles skarpt udprægede Sculptur af Valvlerne. Fra *Sc. Strömii*. som den ligner ved Stilkens Boining. er den desuden let kjendelig ved Capitulums forskjellige Form.

Beskrivelse. Legemet er (se Pl. XX. Fig. 8—10) forholdsvis meget kort og undersætsigt samt indtager en lignende Stilling i Forhold til de Gjenstande. hvortil det er fæstet. som hos *Sc. Strømii*. paa Grund af Stilkens Boining.

Capitulum er seet fra Siden (Fig. 8) af temmelig regelmæssig oval Form. med Breden noget større end den halve Længde og ikke bredere i det ydre Parti end ved Basis. Den ventrale Rand eller Aabningsranden er næsten lige. og Apex forholdsvis kort. men skarpt tilspidset samt beliggende kjendeligt nedenfor Skallens Axe. Valvlerne er tæt sammenstødende. kun begrændsede af smale Suturer. uden mellemliggende hudagtige Partier. og viser alle en særdeles skarpt udpræget Sculptur af ophøiede radierende Striber eller smale Ribber.

Kjølen mangler. som hos de 2 foregaaende Arter. nogen tydelig Umbo. men er i sit ydre Parti noget høiere og stærkere buet.

Tergalstykkerne viser den sædvanlige skjævt triangulære Form og har Aabningsranden noget kortere end Basalranden.

80. Scalpellum cornutum. G. O. Sars. n. sp.

(Pl. XX. figs. 8—10.

Scalpellum cornutum, G. O. Sars. Crustacea et Pycnogonida nova Exped. Norv.. No. 45.

Specific Character. — Capitulum oblong-oval. not expanded towards extremity. with apex comparatively short and placed below axis of shell. Valves in close contact, with a sharply prominent sculpture of radiating elevated striæ. Keel evenly arched. without umbo. Tergal segments large. with occluding margin somewhat shorter than basal. Shields comparatively broad. having apical corner rostrum-like. as also greatly produced and pointed. Dorsal basal segments projecting on either side of basal part of keel. as 2 corniform. backward-curving prolations; median basal segments broadest at base. with an exceedingly prominent central umbo: ventral basal segments much smaller than rest. Rostrum remarkably small. well-nigh quadrate in form. Peduncle short. constricted at base. and distinctly inflexed. as also covered with large imbricate calcareous scales. Outer investing membrane smooth. Colour white. Length reaching 11^{mm}.

Locality. — Stats. 124. 267. 359.

Remarks. — This species may be readily recognized from the preceding by the peculiar form of the dorsal basal segments and of the rostrum. as also by the exceedingly prominent sculpturing of the valves. From *Sc. Strømii*. which it approximates in the flexure of the peduncle. it is also easily distinguished by the deviating form of the capitulum.

Description. — The body (see Pl. XX. figs. 8—10) is comparatively very short and thickset. with a position. — by reason of the flexure of the peduncle. — in relation to the objects whereto it is attached. similar to that of the body in *Sc. Strømii*.

The capitulum. viewed from the side (fig. 8). has an approximately oval form. with the breadth slightly exceeding half the length. and not broader in the outer part than at the base. The ventral. or occluding. margin is almost straight. and the apex comparatively short. but acutely pointed. and placed appreciably below the axis of the shell. The valves are closely contiguous. defined merely by narrow sutures. without intervening cutaneous strips. and all of them exhibiting a most strongly marked sculpture of prominent radiating striæ or slender ribs.

The keel. as in the 2 preceding species. has no distinct umbo. but occurs in its outer part somewhat more elevated and arched.

The tergal segments exhibit the usual oblique. triangular form. and have the occluding margin somewhat shorter than the basal.

Skjoldene er forholdsvis brede, med Lateralranden kortere end de ovrige, og det apicale Hjorne uddraget til et skarpt næbformigt Fremspring, der rager ud over Tergalstykkernes Basalrand.

De ovre Sidestykker er kjendeligt smalere end Skjoldene og af skjæv, næsten rhomboidal Form, med en tydelig subcentral Umbo.

Af Basalstykkerne udmærker de dorsale sig ved en ganske usædvanlig Form, idet de til hver Side af Kjolens basale Parti hæver sig i Form af en hornlignende opadboiet Fortsats, hvad der har givet Anledning til Artsbenævnelsen (se ogsaa Fig. 10). De er ligesom de 2 ovrige Basalstykker forsynede med særdeles tydelige radierende Linier. De midterste Basalstykker ligner i sin Form mest samme hos *Sc. Strømii*, men skiller sig derved, at de i Midten danner en stærkt fremspringende umboformig Forhoining. De ventrale Basalstykker er meget mindre end de ovrige og afsmalnes kileformigt mod Rostrum.

Dette sidste er (se Fig. 9) meget lidet og rudimentært, neppe længere end bredt, og næsten rudeformigt, mest lignende i sin Form samme hos *Sc. vulgare*.

Stilken er kort, kun lidet mere end halvt saa lang som Capitulum og stærkt indknebet ved Basis. Den viser en fuldkommen lignende stærk Boining som hos *Sc. Strømii* og har en lignende tæt Beklædning of store regelmæssige og taglagte Kalkskjæl.

Den ydre Beklædningsmembran er som hos *Sc. Strømii* og *angustum* ganske glat, uden Smaapigge.

Farven er hvid med orangefarvede gjennemskinnende Æggestokke.

Længden af de største Exemplarer er 11^{mm}.

Forekomst. En Del Exemplarer af denne Art erholdtes under Expeditionen paa 3 forskjellige Stationer. Af disse ligger den ene (Stat. 124) i Havet V af Nordlandskysten, den anden (Stat. 267) i Osthavet og den 3die (Stat. 359) V af Spitsbergen; Dybden fra 148 til 416 Favne. 2 af Stationerne tilhører den kolde Area og den 3die ligger paa Grændsen af samme. Exemplarerne fandtes fæstede til Hydroider og Polyzoer.

The shields are comparatively broad, with the lateral margin shorter than the others and the apical corner produced to a sharp rostral projection, jutting over the basal margin of the tergal segments.

The upper lateral segments are appreciably smaller than the shields, and oblique, almost rhomboidal, in form, with a distinct, subcentral umbo.

Of the basal segments, the dorsal present a most unusual aspect, rising, as they do, from either side of the basal portion of the keel as corniform, upcurving prolations, — a character that suggested the specific designation (see too fig. 10). They are marked, in common with the 2 remaining basal segments, by exceedingly distinct radiating lines. The median basal segments exhibit in their form greatest resemblance to those of *Sc. Strømii*, but differ by forming in the middle a strongly projecting umbo-shaped prominence. The ventral basal segments are much smaller than the others, and taper wedge-like toward the rostrum.

The latter (see fig. 9) is very small, and rudimentary, scarcely at all longer than broad, and well-nigh quadrate, resembling most in form *Sc. vulgare*.

The peduncle is short, but little more than half as long as the capitulum, and greatly constricted at the base. It exhibits a sharp inflexion, precisely similar to that in *Sc. Strømii*, and has, in common with that form, a dense covering of large, regular, imbricate calcareous scales.

The outer investing membrane, as in *Sc. Strømii* and *Sc. angustum*, is quite smooth and without spikelets.

Colour white, with the orange-coloured ovaries shining through the integument.

Length of the largest specimens 11^{mm}.

Occurrence. — A number of examples belonging to this species were collected on the Expedition, at 3 different Stations. Of these Stations, one (Stat. 124) lay in the tract of ocean west of the coast of Nordland, the other (Stat. 267) in the Barent's Sea, and the 3rd (Stat. 359) west of Spitzbergen; depth ranging from 148 to 416 fathoms. Two of the Stations were in the cold area, and the 3rd lay on the boundary. The specimens came up attached to Hydroidæ and Polyzoa.

81. **Scalpellum hamatum**. G. O. Sars.

(Pl. XX. Fig. 11—13).

Scalpellum hamatum, G. O. Sars. Crustacea et Pycnogonida nova Exp. Norv., No. 46.

Artscharakteristik. Capitulum ovalt, bredest ved Basis, afsmalnende mod Enden, med Apex kort og beliggende nedenfor Skallens Axe. Valvlerne tydeligt begrændsede, i sit

81. **Scalpellum hamatum**. G. O. Sars.

(Pl. XX. figs. 11—13).

Scalpellum hamatum, G. O. Sars. Crustacea et Pycnogonida nova Exp. Norv., No. 46.

Specific Character. — Capitulum oval, broadest at base, tapering toward extremity, with apex short and placed below axis of shell. Valves distinctly defined, in

marginale Parti hudagtige, uden tydeligt udpræget Sculptur. Kjølen jevnt buet, uden Umbo. Tergalstykkerne forholdsvis smaa, med Aabningsranden kortere end Basalranden. Skjoldene af sædvanlig Form, med det apicale Hjørne spidst udtrukket. De øvre Sidestykker bredere end Skjoldene, næsten rhombiske, med en lidet fremtrædende subcentral Umbo. De midterste Basalstykker større end de øvrige, bredere end lange; de dorsale ved Basis uddragne i hornformige Fortsatser; de ventrale kileformigt tillobende mod Midtlinien. Rostrum kort nedad frit fremspringende, hageformigt krummet; foran samme en supplementær, ufuldstændigt forkalket Plade. Stilken meget stor og tyk, længere end Capitulum, lige, kjødagtig, cylindrisk, kun forsynet med smaa og spredte Kalkkorn. Den ydre Beklædningsmembran ru af fine Smaapigge. Farven brungraa. Længden indtil 30^{mm}.

Findesteder. Stat. 164, 200, 359.

Bemærkninger. Den her omhandlede Form er saa ulig alle de foregaaende ved Stilkens betydelige Udvikling og kjødagtige Beskaffenhed samt ved Rostrums eiendommelige Form, at den allerede ved første Øiekast kjendes fra samme og muligvis fortjente at opstilles som Typen for en egen Slægt. I selve Dyrets Bygning synes imidlertid ingen væsentlig Forskjel at være tilstede.

Beskrivelse. Legemet er (se Pl. XX, Fig. 11, 12) temmelig langstrakt, hvilket væsentlig skyldes Stilkens betydelige Størrelse. Paa Spiritusexemplarer contraheres denne imidlertid paa Grund af sin ringe Kalkholdighed temmelig stærkt baade i Længde- og Brededimensioner, hvilket har til Følge, at hele Legemets Form noget ændres. Hvad Stillingen angaar i Forhold til de Gjenstande, hvortil Legemet er fæstet, saa er den en lignende som hos *Sc. angustum* og *striolatum*, idet ingen mærkbar Boining af Stilken forefindes.

Capitulum er seet fra Siden (Fig. 11) forholdsvis smalt og af noget uregelmæssig oval Form, bredest ved Basis og noget afsmalnende mod Enden. Den ventrale Rand er paa Midten noget indbugtet og Apex temmelig kort samt beliggende nedenfor Skallens Axe. Valvlerne mangler nogen tydeligt udpræget Sculptur og er mindre stærkt forkalkede end hos de øvrige Arter, idet det marginale Parti er mere eller mindre hudagtigt. Suturerne mellem dem er dog overalt tydeligt markerede.

Kjølen er som hos de 3 foregaaende Arter ganske smal og jevnt buet, uden nogen tydelig Umbo.

Tergalstykkerne er forholdsvis smaa, men af den sædvanlige skjævt triangulære Form og har Aabningsranden betydelig kortere end Basalranden.

Skjoldene er ikke meget mindre og som sædvanlig uregelmæssigt firkantede, med Lateralranden længere end baade Tergal- og Basalranden; deres apicale Hjørne er ogsaa her uddraget i en skarp Spids, der lægger sig ud over Siderne af Tergalstykkerne.

marginal part cutaneous, without clearly prominent sculpturing. Keel evenly arched, no umbo. Tergal segments comparatively small, with occluding margin shorter than basal. Shields of usual form, with apical corner acutely produced. Upper lateral segments broader than shields, well-nigh rhomboidal, with a small, salient, subcentral umbo. Median basal segments larger than rest, broader than long; dorsal produced at base to corniform prolations; ventral extending wedge-shaped toward medial line. Rostrum short, jutting out freely below, hamate; anterior to rostrum a supplementary, in part calcareous, plate. Peduncle very large and thick, longer than capitulum, straight, carneous, cylindric, furnished merely with small and scattered calcareous granules. The outer investing membrane rough, from minute spikelets. Colour a brownish-grey. Length reaching 30^{mm}.

Locality. — Stats. 164, 200, 359.

Remarks. — The species treated of here differs so materially from all the preceding, by reason of the considerable development and carneous character of the peduncle, along with the peculiar form of the rostrum, as to admit, at the first glance, of being distinguished from them, and possibly to warrant its establishment as the type of a separate genus. Meanwhile, in the structure of the animal no essential deviation would appear to exist.

Description. — The body (see Pl. XX, figs. 11, 12) is rather elongate, a character principally arising from the considerable size of the peduncle. In spirit-specimens, however, the latter, from its limited deposit of lime, becomes a good deal contracted, both as to length and breadth, the result of which is a slight change in the form of body. As regards the position to objects whereto the body is attached, this is precisely the same as in *Sc. angustum* and *Sc. striolatum*, since no appreciable inflexion of the peduncle can be detected.

The capitulum, viewed from the side (fig. 11), is narrow, and of a somewhat irregular-oval form, broadest at the base, and slightly tapering toward the extremity. The ventral margin, in the middle, is somewhat inflexed, and the apex rather short, as also placed below the axis of the shell. The valves do not exhibit any strictly prominent sculpturing, and are less calcined that in the other species, their marginal part being more or less cutaneous. The sutures between are meanwhile everywhere distinctly marked.

The keel, as in the 3 preceding species, is quite slender and evenly arched, without any distinct umbo.

The tergal segments are comparatively small, but of the usual oblique-triangular form, and have the occluding margin considerably shorter than the basal.

The shields are not much smaller, and, as usual, irregular-quadratic, with the lateral margin longer than both tergal and basal; here, too, the apical corner is produced to a sharp point, that extends over the sides of the tergal segments.

De ovre Sidestykker er bredere end Skjoldene og næsten rhomboidale, med en kun lidet fremtrædende subcentral Umbo.

Basalstykkerne danne tilsammen en temmelig stærkt buet Tværrad, med Concaviteten vendt mod Stilken, idet de dorsale og ventrale Stykker rækker betydelig længere nedad end de midterste. De dorsale Stykker gaar ligesom hos *Sc. cornutum* ved Basis ud i frit fremragende horndannede Fortsatser, der omfatter mellem sig det basale Parti af Kjolen. De midterste Basalstykker udmærker sig ved sin betydelige Storrelse og brede pentagonale Form, hvorimod de ventrale afsmalnes stærkt nedad, antagende en kiledannet Form.

Rostrum er af et meget eiendommeligt og fra de ovrige bekjendte Arter afvigende Udseende. Det er ganske kort og stærkt forkalket samt nedad frit fremspringende i Form af en skarp hageformigt opadkrummet Fortsats. Foran eller over samme ligger (se fig. 12) en fordetmeste ganske hudagtig supplementær Plade af hjertedannet Form, der begrændser Skalaabningen nedad.

Stilken er paa friske Exemplarer af særdeles betydelig Storrelse, betydelig længere end Capitulum og neppe smalere. Den er ganske lige og cylindrisk samt af kjodagtig Consistens og istedetfor med de sædvanlige Kalkskjæl kun forsynet med smaa spredte Kalkkorn. Disse (se Fig. 13) ligger dybt indsænkede i Huden og har en bredere fortykket Basis, hvorfra en smalere knapformig Del hæver sig i Veiret, skydende det ydre Lag af Huden med sig op i Form af en liden Knude.

Den ydre Beklædningsmembran er som hos *Sc. striolatum* overalt ru af fine Smaapigge, der paa Stilken delvis ordner sig i Knipper omkring de her forekommende Kalkkorn.

Farven var paa de friskt indfangede Exemplarer ensformig graabrun, hvilket hovedsageligt skyldes de hudagtige Partier, medens den forkalkede Del af Capitulums Valvler og Stilkens Kalkkorn var af en lysere, hvidagtig Colour.

Længden af de storste Individer gaar op til 30^{mm}.

Forekomst. Af denne meget eiendommelige Form blev under Expeditionen enkelte Exemplarer tagne paa 3 forskjellige Stationer, fæstede som det synes til selve det lose Materiale, hvoraf Bunden bestod. 2 af Stationerne (Stat. 164 og 200) ligger i Havet V og NV af Finmaken, den 3die (Stat. 359) V af Spitsbergen; Dybden fra 416 til 620 Favne. De 2 forstnævnte Stationer tilhorer den kolde Area, og den 3die ligger umiddelbart paa Grændsen af samme.

The upper lateral segments are broader than the shields, and almost rhomboidal, with but a slightly projecting subcentral umbo.

The basal segments constitute together a rather prominently arched transversal series, with the concave surface turned towards the peduncle, the dorsal and ventral segments reaching considerably farther down than the median. The dorsal segments, as in *Sc. cornutum*, jut out at the base as freely extending corniform prolations, that embrace between them the basal portion of the keel. The median basal segments are characterized by their considerable size and broad, pentagonal form, whereas the ventral segments taper rapidly downward, with a cuneiform aspect.

The rostrum has a very peculiar and from the other known species deviating form. It is quite short and exceedingly calcareous below, freely projecting as an acute, hamate, upcurving prolation. Anterior to, or above, the rostrum (see fig. 12), occurs a cordiform supplementary plate, almost wholly cutaneous, that defines below the opening in the shell.

The peduncle — in fresh specimens — is very considerable in size, much longer than the capitulum, and scarcely at all more slender. It is quite straight and cylindric, also of a fleshy consistence, and furnished, in lieu of the usual calcareous scales, simply with small, scattered calcareous granules. The latter (see fig. 13) are deeply sunk into the skin, and have a broadish, incrassated base, whence a slender, knob-shaped process, pushing before it the outer layer of the skin, rises in the form of a small protuberance.

The outer investing membrane is, as in *Sc. striolatum*, everywhere rough from minute spikelets, which, on the peduncle, are partly disposed in fascicles round the scattered calcareous granules occurring here.

Colour of recent specimens a uniform greyish-brown, chiefly produced by the cutaneous parts, while the calcareous section of the valves of the capitulum and the calcareous granules of the peduncle had a lighter, whitish tint.

Length of the largest examples reaching 30^{mm}.

Occurrence. — Of this most peculiar form, a few specimens were taken on the Expedition, at 3 different Stations, attached, it would seem, to the loose material of which the sea-bed in that region consists. Two of the said Stations (Stats. 164 and 200) lay in the sea west and north-west of Finmark, the 3rd Station (Stat. 359), west of Spitzbergen; depth ranging from 416 to 620 fathoms. The 2 first-named Stations lay in the cold area, and the 3rd Station on the boundary of that area.

Fam. 2. **Balanidæ.**

Gen. **Balanus,** Brug.

82. **Balanus crenatus,** Brug., varietas.

(Pl. XX, Fig. 14, 15).

Den her afbildede Balanus afviger i det ydre saa paafaldende fra den for Balanerne sædvanlige pyramidale eller patellalignende Form, at man mindst skulde tænke, at den lod sig henføre til nogen af vore bekjendte Former. Og dog har en nøiere Undersøgelse af Skallens Valvler overbevist mig om, at den alene er at betragte som en excessiv udviklet Varietet af den ved vore Kyster ikke ualmindeligt forekommende *B. crenatus* Brug. Som man vil se, er det væsentlig den eiendommelige Udvikling af de Kalkplader eller Valvler, der tilsammen danner Skallens Væg (parietas), som udmærker denne Varietet og giver Skallen et saa i høi Grad fremmed Udseende. Derimod er de Valvler, der begrændser Aabningen (Tergalstykkerne og Skjoldene) saavel i Form som Sculptur nøiagtigt af samme Udseende som hos den sædvanlige Form af *B. crenatus*. Skalvæggenes abnorme Udvikling hos den her omhandlede Form tør maaske forklares derved, at Individerne fra først af har været stærkt sammentrængte paa et forholdsvis lidet Rum og under sin paafølgende Vækst saaledes har været nødt til at skyde i Veiret for at faa Rum. I Darwins Arbeide over Cirripederne er givet en Afbildning af en Varietet af den her omhandlede Art, som tydeligt nærmer sig til den her Fig. 15 afbildede Form, skjøndt paa langt nær ikke visende en saadan excessiv Forlængelse af Skalvæggen. Fig. 14 forestiller et af de mindre stærkt forlængede Individer, der imidlertid endnu mærkeligt afviger fra det typiske Udseende ved Skalvæggens cylindriske opad noget udvidede Form.

Forekomst. Af nærværende eiendommelige Varietet toges under Expeditionens sidste Tog nogle Exemplarer ved Hjælp af Bundskraben paa Stat. 322, N af Beeren Eiland, fra et Dyb af 21 Favne, haard Bund.

Fam. 2. **Balanidæ.**

Gen. **Balanus,** Brug.

82. **Balanus crenatus,** Brug., varietas.

(Pl. XX, figs. 14, 15).

The specimen of Balanus represented in the Plate, exhibits so striking a deviation in its outer habitus from the pyramidal or patelliform aspect usually distinguishing the Balanidæ, that few would imagine it referable to any one of the previously known forms. And yet a closer examination of the valves of the shell, has convinced me, that the animal in question should be regarded as a mere exceptionally developed variety of *B. crenatus* Brug., a species occurring not infrequently off the Norwegian coasts. As will be seen, it is chiefly the peculiar development of the calcareous plates, or valves, that together constitute the wall of the shell (parietas), which distingnish this variety, giving to the shell an aspect so characteristically alien. On the other hand, the valves that define the opening (the tergal segments and the shields) have alike in form and in sculpture precisely the same appearance as those of the usual form *B. crenatus*. The abnormal development of the wall of the shell in the form treated of here, will, maybe, admit of explanation by assuming the individuals to have been originally subjected to strong compression in a relatively confined space, thus compelling them, during the progress of growth, to force an upward passage, for the purpose of obtaining space. In Darwin's work on the Cirripedia, there is a drawing of a variety of the species treated of here, clearly approximating the form represented in fig. 15, though far from exhibiting so remarkable a prolongation of the wall of the shell. Fig. 14 gives one of the less elongated individuals, which however still deviates a good deal from the typical appearance, by reason of the cylindric form — somewhat expanded, as it is, in an upward direction — distinguishing the wall of the shell.

Occurrence. — Of the present peculiar variety, a few specimens were brought up in the dredge, on the last cruise of the Expedition, — at Station 322, north of Beeren Eiland, from a depth of 21 fathoms: hard bottom.

Subordo Rhizocephala.

Fam. Peltogastridæ.

Gen. **Sylon.** Kröyer, 1855.

Danske Vid. Selsk. Forhandl.

82. Sylon Hymenodoræ, G. O. Sars.

(Pl. XX, Fig. 16, 17).

Sylon Hymenodoræ, G. O. Sars, Crustacea & Pycnogonida nova Exp. Norv., No. 17.

Artscharacteristik. Legemet ovalt, trindt, fortil pludselig stærkt indsnoret, dannende en smal, skjævt fra selve Kroppen udgaaende noget bugtet Snabel eller Hals. Hefteskiven omgivet af en hornfarvet fortykket Rand. Genitalaabningerne temmelig nær sammen, paa Midten af selve Kroppen og paa den Side af samme, der er vendt fra Snabelen. Farven blegt kjodrod. Længden (incl. Snabelen) 12^{mm}.

Findested. Stat. 52.

Bemærkninger. Fra de ovrige bekjendte Former er denne strax kjendelig ved den eiendommeligt udviklede snabelformigt forlængede Forende, der er skarpt afsat fra den egentlige Krop og danner ligesom en Stilk, hvortil denne er fæstet.

Beskrivelse. Legemet er (se Pl. XX, Fig. 16 og 17) som hos de øvrige Arter af Slægten ovalt, sækformigt, uden Spor af Kalkafleiringer, men skiller sig mærkeligt derved, at Hefteskiven ikke er sessil, men sidder paa Enden af en lang, bugtet, snabelformig Forlængelse, der udgaar i skraa Retning fra den forreste Del af selve Kroppen. Hefteskiven synes at vise den sædvanlige Bygning og har en tydeligt markeret hornfarvet Chitinring.

Kroppens Hud eller Kappen er overalt glat og jevn samt meget tynd og gjennemsigtig med Undtagelse af det snabelformige Parti, hvor den synes at være noget stærkere chitiniseret.

Omtrent midt paa den Side af Kroppen, der vender fra Snabelen sees 2 jevnsides stillede smaa, men tydeligt gabende Porer, som er de Aabninger hvorigjennem Æggene eller rettere Larverne udføres af Legemet.

Kropshulen er saagodtsom ganske fyldt af de voluminose Æggestokke, hvis talrige smaa rodligt farvede Æg skinner tydeligt igjennem Huden. Imellem de 2 Genitalporer sees et lidet kugleformigt, opakt hvidt Legeme, der ligger tæt op mod Huden, delvis løftende denne i Veiret paa dette Sted. Dette er den uparrede Sædstok, og fra denne strækker sig et noget fortykket, mindre gjennemsigtigt Baand fortil mod Basis af Snabelen.

Subordo Rhizocephala.

Fam. Peltogastridæ.

Gen. **Sylon.** Kröyer, 1855.

Danske Vid. Selsk. Forhandl.

92. Sylon Hymenodoræ. G. O. Sars.

(Pl. XX. figs. 16, 17).

Sylon Hymenodoræ. G. O. Sars, Crustacea & Pycnogonida nova Exp. Norv., No. 47.

Specific Character. — Body oval, sac-like, anterior part abruptly instricted, forming a slender, somewhat inflexed proboscis, or neck, issuing obliquely from the trunk itself. Disc of attachment surrounded by a horn-coloured, inspissated margin. Genital orifices close together, in the middle of the body, and on the side turning from the proboscis. Colour a lightish pink. Length (including proboscis) 12^{mm}.

Locality. — Stat. 52.

Remarks. — From the other known forms, this animal may be immediately distinguished by its peculiar, proboscidiform, elongate anterior extremity, sharply defined from the trunk proper, and forming, as it were, a peduncle, to which the latter is attached.

Description. — The body (see Pl. XX, figs. 16, 17) is, as in the other species of the genus, oval, sac-like, without a trace of calcareous deposit, differing however remarkably in the disc of attachment not being sessile, but placed at the extremity of a long, inflexed, proboscidiform prolation, which, taking an oblique direction, issues from the foremost part of the body. The disc of attachment would appear to exhibit the usual structure, and has a distinctly marked horn-coloured chitinous ring.

The skin of the body, or mantle, is everywhere smooth and even, as also very tenuous and translucent, except the proboscidiform part, that would seem to be a trifle more chitinized.

About midway down the side of the body that turns from the proboscis, are seen, placed side by side, 2 small, but distinctly gaping pores — the orifices through which the ova, or rather the larvæ, are extruded from the body.

The perivisceral cavity is well-nigh entirely filled with the voluminous ovaries, whose numerous, small, reddish-coloured eggs shine distinctly through the skin. Between the 2 genital pores is observed a small, globular, opaquish-white corpuscle, close to the skin, which in part it tends to lift. This is the spermatic vesicle, whence proceeds anteriorly toward the base of the proboscis a slightly inspissated, less translucent band.

Farven var paa det friskt indfangede Exemplar blegt kjodrod, væsentlig vel paa Grund af de gjennemskinnende Æg.

Længden af selve Kroppen er 8^{mm}, af Snabelen 4^{mm}, altsaa tilsammen 12^{mm}.

Forekomst. Et enkelt Individ af denne characteristiske Parasit erholdtes under Expeditionens 1ste Togt i Havet mellem Norge og Island (Stat. 52) fra et Dyb af 1861 Favne. Exemplaret var fastheftet til Ventralsiden af 1ste Bagkropssegment hos et Individ af den eiendommelige ovenfor beskrevne Dybvandscaride. *Hymenodora glacialis* (Buchholz). .

Colour of the fresh specimen a light-pink, produced, one would imagine, in greater part by the eggs shining through the skin.

Length of trunk 8^{mm}, of proboscis 4^{mm}; hence, altogether 12^{mm}.

Occurrence. — A sole example of this characteristic parasite came up, on the 1st cruise of the Expedition, in the tract of ocean between Norway and Iceland (Stat. 52), from a depth of 1861 fathoms. The animal was attached to the ventral side of the 1st abdominal segment of a specimen of the above-described peculiar deep-sea Caridian, *Hymenodora glacialis* (Buchholz).

Forklaring over Plancherne.

Pl. I.

Scyramathia Carpenteri. (Norman).

Fig. 1. Ægbærende Hun seet ovenfra; nat. St.
„ 2. Legemet af samme (uden Fodderne) nedenfra.
„ 3. Samme fra hoire Side.
„ 4. Venstre Kjævefod af 3die Par nedenfra.
„ 5. Endekloen af en Gangfod.
„ 6. En af Rygskjoldets Borster stærkt forstorret.
„ 7. En af sammes papilleformige Vedhæng.

Eupagurus tricarinatus. (Norman).

Fig. 8. Hun seet ovenfra, noget forstorret.
„ 9. Yderdelen af hoire Saxfod ovenfra.
„ 10. Yderdelen af venstre Saxfod.

Pl. II.

Sclerocrangon salebrosus. (Owen).

Fig. 1. Ægbærende Hun seet ovenfra; nat. St.
„ 2. Samme fra venstre Side.
„ 3. Øinene med det tilhørende Segment seede ovenfra.
„ 4. Hoire Føler af 1ste Par nedenfra.
„ 5. Den ydre Svøbe af samme Folerpar hos Hannen.
„ 6. Hoire Føler af 2det Par med Bladet og Basis af Svøben, seet nedenfra.
„ 7. Overlæben nedenfra.
„ 8. Underlæben.
„ 9. En af Kindbakkerne.
„ 10. Enden af samme stærkere forstorret.
„ 11. Kjæve af 1ste Par.
„ 12. Kjæve af 2det Par.
„ 13. Kjævefod af 1ste Par.
„ 14. Kjævefod af 2det Par.
„ 15. Kjævefod af 3die Par.
„ 16. Fod af 1ste Par.
„ 17. Fod af 2det Par.
„ 18. Haanden af samme stærkere forstorret.

Explanation of the Plates.

Pl. I.

Scyramathia Carpenteri, (Norman).

Fig. 1. Ovigerous female, viewed from above; natural size.
„ 2. Body of same animal (without legs), from below.
„ 3. Same animal, from right side.
„ 4. Left maxilliped of 3rd pair, from below.
„ 5. Terminal claw of a pereiopod.
„ 6. Bristle from carapax, highly magnified.
„ 7. Papillary appendix from same part.

Eupagurus tricarinatus. (Norman).

Fig. 8. Female viewed from above, slightly magnified.
„ 9. Outer part of right cheliped, from above.
„ 10. Outer part of left.

Pl. II.

Sclerocrangon salebrosus. (Owen).

Fig. 1. Ovigerous female, viewed from above; natural size.
„ 2. Same animal, from left side.
„ 3. Eyes, together with ocular segment, viewed from above.
„ 4. Right antenna of 1st pair, from below.
„ 5. Outer flagellum of same pair of antennæ, in male.
„ 6. Right antenna of 2nd pair, with scale and base of flagellum, viewed from below.
„ 7. Labrum, from below.
„ 8. Labium.
„ 9. One of the mandibles.
„ 10. Extremity of same, considerably magnified.
„ 11. Maxilla of 1st pair.
„ 12. Maxilla of 2nd pair.
„ 13. Maxilliped of 1st pair.
„ 14. Maxilliped of 2nd pair.
„ 15. Maxilliped of 3rd pair.
„ 16. Leg of 1st pair.
„ 17. Leg of 2nd pair.
„ 18. Hand of same animal, considerably magnified.

Fig. 19. Fod af 3die Par.
„ 20. Fod af 4de Par.
„ 21. Gjellerne paa venstre Side tilligemed 1ste og 2den Kjævefod.
„ 22. Brystskjoldet fra venstre Side.
„ 23. Samme nedenfra.
„ 24. En af 1ste Par Pleopoder.
„ 25. En af 2det Par Pleopoder.
„ 26. Den indre Gren af 1ste Par Pleopoder hos Hannen.
„ 27. Samme Gren af 2det Par hos Hannen.
„ 28. Det midterste Halevedhæng ovenfra.
„ 29. Hoire ydre Halevedhæng ovenfra.

Pl. III.

Bythocaris leucopis, G. O. Sars.

Fig. 1. Ægbærende Hun seet ovenfra. $^2/_3$ nat. St.
„ 2. Samme fra høiere Side.
„ 3. Foler af 1ste Par med den ydre Svobe og Basis af den indre.
„ 4. Venstre Foler af 2det Par med Bladet og Basis af Svoben.
„ 5. Overlæben.
„ 6. Underlæben.
„ 7. Kindbakkerne.
„ 8. Kjæve af 1ste Par.
„ 9. Kjæve af 2det Par.
„ 10. Kjævefod af 1ste Par.
„ 11. Kjævefod af 2det Par.
„ 12. Kjævefod af 3die Par.
„ 13. Fod af 1ste Par.
„ 14. Fod af 2det Par.
„ 15. Fod af 3die Par.
„ 16. Gjellerne paa hoire Side.
„ 17. En af 1ste Par Pleopoder.
„ 18. En af 2det Par Pleopoder.
„ 19. En af 1ste Par Pleopoder hos Hannen.
„ 20. En af 2det Par Pleopoder hos Hannen.
„ 21. Det midterste Halevedhæng ovenfra.
„ 22. Enden af samme stærkere forstørret.
„ 23. Hoire ydre Halevedhæng.
„ 24. Æg i sidste Udviklingsstadium med gjennemskinnende Embryo seet fra Siden.
„ 25. Samme ovenfra.
„ 26. Et fuldt udviklet Embryo udtaget af Ægget.

Bythocaris Payeri, (Heller).

Fig. 27. Rygskjoldet med Øinene og Folerne seet ovenfra. forstorret.

Fig. 19. Leg of 3rd pair.
„ 20. Leg of 4th pair.
„ 21. Branchiæ on left side, together with 1st and 2nd maxillipeds.
„ 22. Carapax, viewed from left side.
„ 23. Same part, from below.
„ 24. Pleopod of 1st pair.
„ 25. Pleopod of 2nd pair.
„ 26. Inner branch of 1st pair of pleopods, in male.
„ 27. Same branch of 2nd pair, in male.
„ 28. Telson, viewed from above.
„ 29. Right uropod, from above.

Pl. III.

Bythocaris leucopis, G. O. Sars.

Fig. 1. Ovigerous female, viewed from above, two-thirds natural size.
„ 2. Same animal, from right side.
„ 3. Antenna of 1st pair, with outer flagellum and base of inner.
„ 4. Left antenna of 2nd pair, with scale and base af flagellum.
„ 5. Labrum.
„ 6. Labium.
„ 7. Mandibles.
„ 8. Maxilla of 1st pair.
„ 9. Maxilla of 2nd pair.
„ 10. Maxilliped of 1st pair.
„ 11. Maxilliped of 2nd pair.
„ 12. Maxilliped of 3rd pair.
„ 13. Leg of 1st pair.
„ 14. Leg of 2nd pair.
„ 15. Leg of 3rd pair.
„ 16. Branchiæ on right side.
„ 17. Pleopod of 1st pair.
„ 18. Pleopod of 2nd pair.
„ 19. Pleopod of 1st pair, in male.
„ 20. Pleopod of 2nd pair, in male.
„ 21. Telson, viewed from above.
„ 22. Extremity of same part, considerably magnified.
„ 23. Right uropod.
„ 24. Ovum in final stage of development, with embryo shining through the skin, lateral aspect.
„ 25. Same, viewed from above.
„ 26. A fully developed embryo, extracted from the egg.

Bythocaris Payeri, (Heller).

Fig. 27. Carapax, with eyes and antennæ, viewed from above, — magnified.

Pl. IV.

Hymenodora glacialis, (Buchholz).

Fig. 1. Han seet ovenfra. $^{2}/_{1}$ nat. St.
„ 2. Ægbærende Hun fra venstre Side.
„ 3. Øinene med det tilhørende Segment ovenfra.
„ 4. Et Stykke af Cornea stærkt forstorret, visende den uregelmæssige og svagt udprægede Facettering.
„ 5. Venstre Foler af 1ste Par med Basis af Svoberne, seet ovenfra.
„ 6. Samme fra den ydre Side.
„ 7. Høire Foler af 2det Par med Bladet og Basis af Svøben, seet nedenfra.
„ 8. Overlæben.
„ 9. Underlæben.
„ 10. Kindbakkerne.
„ 11. Palpen paa samme isoleret.
„ 12. Kjæve af 1ste Par.
„ 13. Kjæve af 2det Par.
„ 14. Kjævefod af 1ste Par.
„ 15. Kjævefod af 2det Par.
„ 16. Kjævefod af 3die Par.
„ 17. Fod af 1ste Par.
„ 18. Haanden af samme stærkere forstorret.
„ 19. Fod af 2det Par.
„ 20. Fod af 3die Par.
„ 21. Fod af 5te Par.
„ 22. Gjellerne paa venstre Side.
„ 23. En af 1ste Par Pleopoder.
„ 24. En af 2det Par Pleopoder.
„ 25. Det midterste Halevedhæng ovenfra.
„ 26. Enden af samme stærkere forstorret.
„ 27. Et af de ydre Halevedhæng.
„ 28. En af 1ste Par Pleopoder hos Hannen.
„ 29. En af 2det Par Pleopoder hos Hannen.

Pl. V.

Erythrops glacialis, G. O. Sars.

Fig. 1. Ægbærende Hun seet ovenfra, svagt forstorret (Stregen ved Siden angiver den nat. Storrelse).
„ 2. Den forreste Del af Rygskjoldet stærkere forstorret, seet ovenfra, visende Pandepladen, høire Øie, 1ste Par Foleres Skafter og Bladet paa høire Foler af 2det Par.
„ 3. Endepartiet (Tarsen) af en af Fodderne.
„ 4. Enden af Bagkroppen med det midterste Halevedhæng og venstre ydre Halevedhæng, seet ovenfra.

Parerythrops spectabilis, G. O. Sars.

Fig. 5. Han seet fra høire Side, svagt forstorret.
„ 6. Samme ovenfra.

Pl. IV.

Hymenodora glacialis, (Buchholz).

Fig. 1. Male, viewed from above, twice natural size.
„ 2. Ovigerous female, viewed from left side.
„ 3. Eyes, with ocular segment, from above.
„ 4. Fragment of cornea, highly magnified, showing the irregular and faintly pronounced areolation.
„ 5. Left antenna of 1st pair, with bases of flagella, viewed from above.
„ 6. Same, viewed from outer side.
„ 7. Right antenna of 2nd pair, with scale and base of flagellum, viewed from below.
„ 8. Labrum.
„ 9. Labium.
„ 10. Mandibles.
„ 11. Mandibular palp, isolated.
„ 12. Maxilla of 1st pair.
„ 13. Maxilla of 2nd pair.
„ 14. Maxilliped of 1st pair.
„ 15. Maxilliped of 2nd pair.
„ 16. Maxilliped of 3rd pair.
„ 17. Leg of 1st pair.
„ 18. Hand of same leg, considerably magnified.
„ 19. Leg of 2nd pair.
„ 20. Leg of 3rd pair.
„ 21. Leg of 5th pair.
„ 22. Branchiæ on left side.
„ 23. Pleopod of 1st pair.
„ 24. Pleopod of 2nd pair.
„ 25. Telson, viewed from above.
„ 26. Extremity of same, considerably magnified.
„ 27. An uropod.
„ 28. Pleopod of 1st pair, in male.
„ 29. Pleopod of 2nd pair, in male.

Pl. V.

Erythrops glacialis, G. O. Sars.

Fig. 1. Ovigerous female, viewed from above, slightly magnified (the appended line indicates its natural size.
„ 2. Anterior portion of carapax, viewed from above, considerably magnified, showing frontal plate, right eye, peduncles of 1st pair of antennæ, and scale on right antenna of 2nd pair.
„ 3. Terminal portion (tarsus) of a leg.
„ 4. Extremity of posterior division of body, comprising telson and left uropod, viewed from above.

Parerythrops spectabilis, G. O. Sars.

Fig. 5. Male, viewed from right side, slightly magnified.
„ 6. Same animal, from above.

Fig. 7. Endevedhænget til 1ste Par Foleres Skaft befriet fra de paasiddende Borster, seet nedenfra.
„ 8. Hoire Foler af 2det Par med Bladet og Basis af Svoben seet ovenfra.
„ 9. Endepartiet af en Fod.
„ 10. Det midterste Halevedhæng ovenfra.
„ 11. Enden af samme stærkere forstorret.
„ 12. Den indre Plade af et af de ydre Halevedhæng med Horeapparatet.

Pseudomysis abyssi, G. O. Sars.

Fig. 13. Den forreste Del af Rygskjoldet med Pandepladen, de rudimentære Øine og Folerne, ovenfra.
„ 14. Kindbakkernes Tyggedele stærkere forstorrede.
„ 15. Kindbakkernes Palpe.
„ 16. Kjæve af 1ste Par.
„ 17. Kjæve af 2det Par.
„ 18. Endognathen af 1ste Kjævefodpar.
„ 19. Endognathen af 2det Kjævefodpar.
„ 20. Det midterste Halevedhæng ovenfra.
„ 21. Et af de ydre Halevedhæng.

Boreomysis nobilis, G. O. Sars.

Fig. 22. Slægtsmoden Han seet fra hoire Side, svagt forstorret.
„ 23. Samme ovenfra.
„ 24. Venstre Foler af 2det Par med Bladet og Basis af Svøben, nedenfra.
„ 25. Endepartiet af en Fod.
„ 26. Den indre Gren af 1ste Par Pleopoder.
„ 27. Det midterste Halevedhæng ovenfra.
„ 28. Den ene af sammes Endefliger stærkere forstorret.

Fig. 7. Terminal appendix to peduncle of 1st pair of antennæ, without the bristles, viewed from below.
„ 8. Right antennæ of 2nd pair, with scale and base of flagellum, viewed from above.
„ 9. Terminal portion of a leg.
„ 10. Telson, viewed from above.
„ 11. Extremity of same part, considerably magnified.
„ 12. Inner plate of an uropod, with auditory apparatus.

Pseudomysis abyssi, G. O. Sars.

Fig. 13. Anterior portion of carapax, with frontal plate, rudimentary eyes, and antennæ.
„ 14. Masticatory parts of mandibles, considerably magnified.
„ 15. Mandibular palp.
„ 16. Maxilla of 1st pair.
„ 17. Maxilla of 2nd pair.
„ 18. Endognath of 1st pair of maxillipeds.
„ 19. Endognath of 2nd pair of maxillipeds.
„ 20. Telson, viewed from above.
„ 21. An uropod.

Boreomysis nobilis, G. O. Sars.

Fig. 22. Adult male, viewed from right side, slightly magnified.
„ 23. Same animal, viewed from above.
„ 24. Left antenna of 2nd pair, with scale and base of flagellum, viewed from above.
„ 25. Terminal portion of a leg.
„ 26. Inner branch of 1st pair of pleopods.
„ 27. Telson, viewed from above.
„ 28. One of the terminal lappets, of same appendage, considerably magnified.

Pl. VI.

Boreomysis scyphops, G. O. Sars.

Fig. 1. Ægbærende Hun seet ovenfra, svagt forstørret.
„ 2. Samme seet fra hoire Side.
„ 3. Slægtsmoden Han seet fra hoire Side.
„ 4. Hoire Foler af 1ste Par hos Hunnen med Basis af Svøberne, seet ovenfra.
„ 5. Samme fra den ydre Side.
„ 6. Hoire Foler af 2det Par med Bladet og Basis af Svøben, ovenfra.
„ 7. Overlæben, Underlæben og Kindbakkerne i sin naturlige Forbindelse med hverandre, nedenfra.
„ 8. Enden af en af Kindbakkernes Palpe.
„ 9. Tyggedelene af Kindbakkerne stærkere forstørrede.
„ 10. Kjæve af 1ste Par.
„ 11. Kjæve af 2det Par.

Pl. VI.

Boreomysis scyphops, G. O. Sars.

Fig. 1. Ovigerous female, from above, slightly magnified.
„ 2. Same animal, viewed from right side.
„ 3. Adult male, viewed from right side.
„ 4. Right antenna of 1st pair, in female, with bases of flagella, viewed from above.
„ 5. Same antenna, from outer side.
„ 6. Right antenna of 2nd pair, with scale and base of flagellum, viewed from below.
„ 7. Labrum, labium, and mandibles in their natural connection, as viewed from below.
„ 8. Extremity of a mandibular palp.
„ 9. Masticatory parts of mandibles, considerably magnified.
„ 10. Maxilla of 1st pair.
„ 11. Maxilla of 2nd pair.

Fig. 12. Kjævefod af 1ste Par med den tilhørende Svømmegren og Vifte.
„ 13. Kjævefod af 2det Par med Æggepladen og Basis af Svømmegrenen.
„ 14. Endepartiet af samme Kjævefods Endognath.
„ 15. Fod af 1ste Par med sin Svømmegren og Æggeplade.
„ 16. En af Bagkropslemmerne.
„ 17. Det midterste Halevedhæng ovenfra.
„ 18. Spidsen af en af sammes Endefliger stærkere forstorret.
„ 19. Et af de ydre Halevedhæng.
„ 20. Øie med Føler af 1ste Par hos Hannen, seet fra den ydre Side.
„ 21. En af 1ste Par Pleopoder hos samme.
„ 22. En af 2det Par Pleopoder hos samme.

Fig. 12. Maxilliped of 1st pair, with appertinent natatory branch and flabellum.
„ 13. Maxilliped of 2nd pair, with incubatory plate and base of natatory branch.
„ 14. Terminal portion of same maxilliped's endognath.
„ 15. Leg of 1st pair, with appertinent natatory branch and incubatory plate.
„ 16. One of the abdominal limbs.
„ 17. Telson, viewed from above.
„ 18. Point of one of the terminal lappets on same appendage, considerably magnified.
„ 19. An uropod.
„ 20. Eye, in male, with antenna of 1st pair, viewed from outer side.
„ 21. Pleopod of 1st pair, in male.
„ 22. Pleopod of 2nd pair, in male.

Pl. VII.

Diastylis nodosa, G. O. Sars.

Fig. 1. Ung (ikke slægtsmoden) Han seet ovenfra.
„ 2. Samme fra venstre Side.
„ 3. Spidsen af det midterste Halevedhæng noget stærkere forstorret.
„ 4. Enden af et af de ydre Halevedhæng med de 2 Grene.

Cryptocope Vøringii, G. O. Sars.

Fig. 5. Hun seet ovenfra.
„ 6. Samme fra venstre Side.
„ 7. Den forreste Del af Legemet seet nedenfra stærkere forstorret, visende Folerne, Munddelene og Saxfodderne.
„ 8. Bagkroppen seet nedenfra, visende de rudimentære Pleopoder og Halevedhængene.
„ 9. En af Pleopoderne stærkere forstorret.
„ 10. Et af Halevedhængene isoleret.
„ 11. Slægtsmoden Han seet ovenfra.
„ 12. Samme fra venstre Side.
„ 13. Forenden af Hovedet med 1ste Par Folere, stærkere forstorret.
„ 14. Haanden af en af Saxfodderne seet fra den ydre Side.
„ 15. En af Pleopoderne.
„ 16. Et af Halevedhængene.

Leptognathia longiremis, (Lilljeborg).

Fig. 17. Ægbærende Hun seet ovenfra.
„ 18. Samme fra venstre Side.
„ 19. En af 1ste Par Folere hos en ung Han, med begyndende Deling af Svøben. (Paa Fig. 17 og 18 er disse Folere ved en Feiltagelse afbildet ligedan, medens de her kun skal være 4-leddede).

Pl. VII.

Diastylis nodosa, G. O. Sars.

Fig. 1. Young male (sexually immature), viewed from above.
„ 2. Same animal, viewed from left side.
„ 3. Point of telson, rather highly magnified.
„ 4. Extremity of an uropod, with the 2 branches.

Cryptocope Vøringii, G. O. Sars.

Fig. 5. Female, viewed from above.
„ 6. Same animal, viewed from left side.
„ 7. Anterior part of body, viewed from below, considerably magnified, showing antennæ, oral appendages, and chelipeds.
„ 8. Posterior division of body, viewed from below, showing the rudimentary pleopods and caudal appendages.
„ 9. Pleopod, considerably magnified.
„ 10. Caudal appendage, isolated.
„ 11. Sexually mature male, viewed from above.
„ 12. Same animal, viewed from left side.
„ 13. Anterior extremity of head, with 1st pair of antennæ, considerably magnified.
„ 14. Hand of a cheliped, viewed from outer side.
„ 15. A pleopod.
„ 16. A caudal appendage.

Leptognathia longiremis, (Lilljeborg).

Fig. 17. Ovigerous female, viewed from above.
„ 18. Same animal, viewed from left side.
„ 19. Antenna of 1st pair, in a young male, with partition of flagellum begun. (In figs. 17 and 18, these antennæ are erroneously represented alike, whereas here they should be four-jointed.

Fig. 20. Foler af 2det Par.
„ 21. Kindbakkerne.
„ 22. En af Kjæverne.
„ 23. Kjævefodderne.
„ 24. En af Saxfodderne fra den ydre Side.
„ 25. Fod af 2det Par.
„ 26. Fod af 7de Par.
„ 27. En af Pleopoderne.
„ 28. Et af Halevedhængene.

Typhlotanais cornutus. G. O. Sars.

Fig. 29. Hun seet fra høire Side.
„ 30. Samme ovenfra.
„ 31. Foler af 1ste Par.
„ 32. Foler af 2det Par.
„ 33. Kindbakkerne.
„ 34. En af Saxfodderne.
„ 35. Fod af 1ste Par.
„ 36. Fod af 7de Par.
„ 37. En af Pleopoderne.
„ 38. Et af Halevedhængene.

Fig. 20. Antenna of 2nd pair.
„ 21. Mandibles.
„ 22. A maxilla.
„ 23. Maxillipeds.
„ 24. Cheliped, viewed from outer side.
„ 25. Leg of 2nd pair.
„ 26. Leg of 7th pair.
„ 27. A pleopod.
„ 28. A caudal appendage.

Typhlotanais cornutus, G. O. Sars.

Fig. 29. Female, viewed from right side.
„ 30. Same animal.
„ 31. Antenna of 1st pair.
„ 32. Antenna of 2nd pair.
„ 33. Mandibles.
„ 34. A cheliped.
„ 35. Leg of 1st pair.
„ 36. Leg of 7th pair.
„ 37. A pleopod.
„ 38. A caudal appendage.

Pl. VIII.

Anceus stygius, G. O. Sars.

Fig. 1. Slægtsmoden Han seet ovenfra.
„ 2. Samme nedenfra.
„ 3. Forenden af Legemet, efterat Munddelene og Fodderne er fjernede, stærkere forstørret, seet nedenfra.
„ 4. Foler af 1ste Par.
„ 5. Foler af 2det Par.
„ 6. En af de saakaldte Kindbakker.
„ 7. Kjævefodderne.
„ 8. Det omdannede operkelformede 1ste Fodpar.
„ 9. En af de egentlige Fodder.
„ 10. En af Pleopoderne.
„ 11. Enden af Bagkroppen med Haleviften, seet ovenfra.
„ 12. En ganske ung Larve (Praniza), ovenfra.
„ 13. En ældre Larve med stærkt opsvulmet Forkrop.
„ 14. Hovedet af en Larve seet nedenfra, stærkere forstørret, visende Folerne, Munddelene og Klamrefodderne.
„ 15. Kindbakkerne.
„ 16. 1ste Par Kjæver.
„ 17. 2det Par Kjæver.
„ 18. Kjævefodderne.
„ 19. En af Klamrefodderne.
„ 20. En af de egentlige Fodder.
„ 21. En af Pleopoderne.

Pl. VIII.

Anceus stygius, G. O. Sars.

Fig. 1. Sexually mature male, viewed from above.
„ 2. Same animal, viewed from below.
„ 3. Anterior extremity of body, after removing the oral appendages and legs, considerably magnified, — viewed from below.
„ 4. Antenna of 1st pair.
„ 5. Antenna of 2nd pair.
„ 6. One of the so-called mandibles.
„ 7. Maxillipeds.
„ 8. The transformed operculiform 1st pair of legs.
„ 9. One of the true legs.
„ 10. A pleopod.
„ 11. Extremity of posterior division of body, with caudal fan, viewed from above.
„ 12. A very young larva (praniza), viewed from above.
„ 13. A more developed larva, with greatly swollen anterior division of body.
„ 14. Head of a larva, viewed from below, considerably magnified, showing antennæ, oral appendages, and clasping legs.
„ 15. Mandibles.
„ 16. First pair of maxillæ.
„ 17. Second pair of maxillæ.
„ 18. Maxillipeds.
„ 19. One of the clasping legs.
„ 20. One of the true legs.
„ 21. A pleopod.

Fig. 23. Enden af Bagkroppen med det midterste Halevedhæng og det venstre ydre Halevedhæng, seet ovenfra.

Anceus hirsutus. G. O. Sars.

Fig. 23. Skegtsmoden Han seet ovenfra.
„ 24. Enden af Bagkroppen med det midterste Halevedhæng.

Anceus robustus. G. O. Sars.

Fig. 25. Slægtsmoden Han seet ovenfra.
„ 26. Sidste Bagkropssegment med det midterste Halevedhæng ovenfra.
„ 27. Ældre Larve seet ovenfra.

Fig. 22. Extremity of posterior division of body, with median caudal appendage and left outer caudal appendage, viewed from above.

Anceus hirsutus. G. O. Sars.

Fig. 23. Sexually mature male, viewed from above.
„ 24. Extremity of posterior division of body, with median caudal appendage.

Anceus robustus, G. O. Sars.

Fig. 25. Sexually mature male, viewed from above.
„ 26. Last abdominal segment, with median caudal appendage, from above.
„ 27. Larva, in advanced stage of development, viewed from above.

Pl. IX.

Arcturus baffini. Sowb.

Fig. 1. Ægbærende Hun seet ovenfra, svagt forstorret.
„ 2. Samme fra venstre Side.
„ 3. Den forreste Del af Legemet med 1ste Par Folere og Munddelene, stærkere forstørret, seet nedenfra.
„ 4. Foler af 1ste Par.
„ 5. To af de paa samme fæstede Sandsevedhæng stærkt forstorrede.
„ 6. Basis af en af 2det Par Folere.
„ 7. Endedelen (Svoben) af samme Foler.
„ 8. Overlæben.
„ 9. Underlæben.
„ 10. Kindbakkerne.
„ 11. Kjæve af 1ste Par.
„ 12. Kjæve af 2det Par.
„ 13. En af Kjævefodderne.
„ 14. Fod af 1ste Par.
„ 15. Fod af 2det Par.
„ 16. Fod af 7de Par.
„ 17. Endekloen af samme stærkere forstorret.
„ 18. Bagkroppen seet nedenfra. Et af de klapformige Halevedhæng er borttaget for at vise de under samme liggende Pleopoder.
„ 19. En af de forreste Pleopoder.
„ 20. En af de bagerste Pleopoder (Gjeller).
„ 21. Spidsen af et af de klapformige Halevedhæng seet fra den indre Side, visende de to rudimentære Endegrene.

Arcturus tuberosus. G. O. Sars.

Fig. 22. Hun seet fra venstre Side.

Pl. IX.

Arcturus baffini, Sowb.

Fig. 1. Ovigerous female, viewed from above, very slightly magnified.
„ 2. Same animal, from left side.
„ 3. Anterior part of body, with 1st pair of antennæ and oral appendages, viewed from below, more highly magnified.
„ 4. Antenna of 1st pair.
„ 5. Two of the sensory appendices on same antenna, highly magnified.
„ 6. Base of antenna of 2nd pair.
„ 7. Terminal part (flagellum) of same antenna.
„ 8. Labrum.
„ 9. Labium.
„ 10. Mandibles.
„ 11. Maxilla of 1st pair.
„ 12. Maxilla of 2nd pair.
„ 13. A maxilliped.
„ 14. Leg of 1st pair.
„ 15. Leg of 2nd pair.
„ 16. Leg of 7th pair.
„ 17. Terminal claw of same leg, considerably magnified.
„ 18. Posterior division of body, viewed from below. One of the valvular caudal appendages removed, to show the pleopods beneath it.
„ 19. One of the anterior pleopods.
„ 20. One of the posterior pleopods (branchiæ).
„ 21. Point of a valvular caudal appendage, viewed from inner side, showing the two rudimentary terminal branches.

Arcturus tuberosus, G. O. Sars.

Fig. 22. Female, viewed from left side.

Arcturus hystrix. G. O. Sars.

Fig. 23. Ægbærende Hun seet ovenfra.
„ 24. Samme fra venstre Side.
„ 25. Foler af 1ste Par.
„ 26. Endedelen (Svoben) af en Foler af 2det Par.

Astacilla granulata. G. O. Sars.

Fig. 27. Ægbærende Hun seet ovenfra.
„ 28. Samme fra høire Side.
„ 29. Foler af 1ste Par.
„ 30. Endedelen af en Foler af 2det Par.
„ 31. Fod af 1ste Par.
„ 32. Slægtsmoden Han seet fra høire Side.
„ 33. En af sammes Folere af 1ste Par.
„ 34. 1ste Par Pleopoder tilligemed de foran samme beliggende ydre Kjønsvedhæng.
„ 35. En af 2det Par Pleopoder hos samme.

Arcturus hystrix. G. O. Sars.

Fig. 23. Ovigerous female, viewed from above.
„ 24. Same animal, from left side.
„ 25. Antenna of 1st pair.
„ 26. Terminal part (flagellum) of an antenna of 2nd pair.

Astacilla granulata. G. O. Sars.

Fig. 27. Ovigerous female, viewed from above.
„ 28. Same animal, from right side.
„ 29. Antenna of 1st pair.
„ 30. Terminal part of antenna of 2nd pair.
„ 31. Leg of 1st pair.
„ 32. Sexually mature male, viewed from right side.
„ 33. Antenna of 1st pair, same animal.
„ 34. First pair of pleopods, together with outer sexual appendices placed anterior to them.
„ 35. Pleopod of 2nd pair, same animal.

Pl. X.

Glyptonotus megalurus. (G. O. Sars).

Fig. 1. Han seet ovenfra, svagt forstorret.
„ 2. Samme nedenfra.
„ 3. Foler af 1ste Par.
„ 4. Spidsen af samme stærkere forstorret.
„ 5. Et af de paa samme fæstede Sandsevedhæng.
„ 6. Foler af 2det Par.
„ 7. Overlæben.
„ 8. Underlæben.
„ 9. Kindbakkerne.
„ 10. Kjæve af 1ste Par.
„ 11. Kjæve af 2det Par.
„ 12. Kjævefødderne.
„ 13. Fod af 1ste Par fra den ydre Side.
„ 14. Samme fra den indre Side.
„ 15. Fod af 4de Par.
„ 16. Fod af 7de Par.
„ 17. Bagkroppen seet nedenfra. Et af de klapformige Halevedhæng er borttaget for at vise de under samme liggende Pleopoder.
„ 18. De ydre Kjønsvedhæng, stærkere forstorrede.
„ 19. En af 1ste Par Pleopoder.
„ 20. En af 2det Par Pleopoder hos Hunnen.
„ 21. En af samme Par Pleopoder hos Hannen.
„ 22. En af de bagre Pleopoder (Gjeller).
„ 23. Spidsen af et af de klapformige Halevedhæng fra den indre Side, visende de 2 rudimentære Endegrene.

Synidotea bicuspida. (Owen).

Fig. 24. Ægbærende Hun seet ovenfra.
„ 25. Den forreste Del af Legemet fra venstre Side.

Pl. X.

Glyptonotus megalurus. (G. O. Sars).

Fig. 1. Male, viewed from above, very slightly magnified.
„ 2. Same animal, viewed from below.
„ 3. Antenna of 1st pair.
„ 4. Point of same antenna, considerably magnified.
„ 5. Sensory appendix attached to same antenna.
„ 6. Antenna of 2nd pair.
„ 7. Labrum.
„ 8. Labium.
„ 9. Mandibles.
„ 10. Maxilla of 1st pair.
„ 11. Maxilla of 2nd pair.
„ 12. Maxillipeds.
„ 13. Leg of 1st pair, from outer side.
„ 14. Same leg, from inner side.
„ 15. Leg of 4th pair.
„ 16. Leg of 7th pair.
„ 17. Posterior division of body, viewed from below. One of the valvular caudal appendages removed, to show the pleopods beneath.
„ 18. Outer sexual appendices, considerably magnified.
„ 19. Pleopod of 1st pair.
„ 20. Pleopod of 2nd pair, in male.
„ 21. Pleopod of same pair, in male.
„ 22. A posterior pleopod (branchia).
„ 23. Point of a valvular caudal appendage, viewed from inner side, showing the 2 rudimentary terminal branches.

Synidotea bicuspida. (Owen).

Fig. 24. Ovigerous female, viewed from above.
„ 25. Anterior part of body, viewed from left side.

Fig. 26. Bagkropssegmentet seet nedenfra, visende de klapformige Halevedhæng.

Acanthoniscus typhlops, G. O. Sars.

Fig. 27. Hun seet ovenfra.
„ 28. Fod af 1ste Par.
„ 29. Bagkropssegmentet seet nedenfra, med de styletformige Halevedhæng.
„ 30. Et af Halevedhængene stærkere forstørret.

Nannoniscus bicuspis, G. O. Sars.

Fig. 31. Hun seet ovenfra.
„ 32. Foler af 1ste Par.
„ 33. Foler af 2det Par.
„ 34. Overlæben.
„ 35. Underlæben.
„ 36. En af Kindbakkerne.
„ 37. Kjæve af 1ste Par.
„ 38. Kjæve af 2det Par.
„ 39. Kjævefodderne.
„ 40. En af de forreste Par Fodder.
„ 41. En af de bagerste Par Fodder.
„ 42. Bagkropssegmentet seet nedenfra.
„ 43. En af de forreste Par Pleopoder.
„ 44. En af de bagerste Par Pleopoder.
„ 45. Et Stykke af Bagkropssegmentet med en af de bagre Fortsatser og et af Halevedhængene.

Fig. 26. Abdominal segment, viewed from below, showing valvular caudal appendages.

Acanthoniscus typhlops, G. O. Sars.

Fig. 27. Female, viewed from above.
„ 28. Leg of 1st pair.
„ 29. Abdominal segment, viewed from below, with the styliform caudal appendages.
„ 30. Caudal appendage, considerably magnified.

Nannoniscus bicuspis, G. O. Sars.

Fig. 31. Female, viewed from above.
„ 32. Antenna of 1st pair.
„ 33. Antenna of 2nd pair.
„ 34. Labrum.
„ 35. Labium.
„ 36. A mandible.
„ 37. Maxilla of 1st pair.
„ 38. Maxilla of 2nd pair.
„ 39. Maxillipeds.
„ 40. One of the anterior legs.
„ 41. One of the posterior legs.
„ 42. Abdominal segment, viewed from below.
„ 43. Pleopod of an anterior pair.
„ 44. Pleopod of a posterior pair.
„ 45. Piece of an abdominal segment, with right posterior prolation and caudal appendage, viewed from below.

Pl. XI.

Eurycope gigantea, G. O. Sars.

Fig. 1. Hun seet ovenfra, svagt forstorret.
„ 2. Samme fra venstre Side. Det ydre Parti af 2det Par Folere og de 3 Par forlængede Gangfodder er udeladt.
„ 3. Samme nedenfra.
„ 4. Hovedet forfra stærkere forstorret.
„ 5. Foler af 1ste Par seet ovenfra.
„ 6. Basis af en af 2det Par Folere seet ovenfra.
„ 7. Samme nedenfra.
„ 8. Overlæben.
„ 9. Underlæben.
„ 10. En af Kindbakkerne fra den ydre Side.
„ 11. Samme bagfra.
„ 12. Kjæve af 1ste Par.
„ 13. Kjæve af 2det Par.
„ 14. Kjævefodderne.
„ 15. Fod af 1ste Par.
„ 16. Enden af en Fod af 2det Par.
„ 17. Enden af en Fod af 4de Par.
„ 18. En af Aarefodderne.

Pl. XI.

Eurycope gigantea, G. O. Sars.

Fig. 1. Female, viewed from above, very slightly magnified.
„ 2. Same animal, from left side. Outer part of 2nd pair of antennæ and 3 pairs of elongated pereiopoda omitted.
„ 3. Same animal, viewed from below.
„ 4. Head, anterior aspect, considerably magnified.
„ 5. Antenna of 1st pair, viewed from above.
„ 6. Base of antenna of 2nd pair, viewed from above.
„ 7. Same part, from below
„ 8. Labrum.
„ 9. Labium.
„ 10. A mandible, from outer side.
„ 11. Same mandible, posterior aspect.
„ 12. Maxilla of 1st pair.
„ 13. Maxilla of 2nd pair.
„ 14. Maxillipeds.
„ 15. Leg of 1st pair.
„ 16. Extremity of a leg of 2nd pair.
„ 17. Extremity of a leg of 4th pair.
„ 18. One of the oar-shaped swimming legs.

Fig. 19. Spidsen af samme med den rudimentære Endeklo, stærkere forstorret.
„ 20. En af de forreste Pleopoder.
„ 21. En af de bagerste Pleopoder (Gjeller).
„ 22. Et af Halevedhængene.
„ 23. Foler af 1ste Par hos Hannen.
„ 24. Hannens Bagkropssegment seet nedenfra.
„ 25. Det omdannede Operculum stærkere forstorret og seet fra den indre Side.

Ischnosoma quadrispinosum, G. O. Sars.

Fig. 26. Hun seet ovenfra, stærkt forstorret.
„ 27. Foler af 1ste Par.
„ 28. Fod af 1ste Par.
„ 29. Et Stykke af Halesegmentet med et af de rudimentære Halevedhæng.

Notophryxus clypeatus, G. O. Sars.

Fig. 30. Ægbærende Hun seet ovenfra.
„ 31. Samme nedenfra.
„ 32. Den forreste Del af Legemet stærkere forstørret, seet nedenfra.
„ 33. Hannen seet fra høire Side, stærkt forstorret.

Fig. 19. Point of same, with the rudimentary terminal claw, considerably magnified.
„ 20. One of the anterior pleopods.
„ 21. One of the posterior pleopods (branchiæ).
„ 22. A caudal appendage.
„ 23. Antenna of 1st pair, in male.
„ 24. Abdominal segment of male, viewed from below.
„ 25. The transformed operculum, considerably magnified and viewed from inner side.

Ischnosoma quadrispinosum, G. O. Sars.

Fig. 26. Female, viewed from above, highly magnified.
„ 27. Antenna of 1st pair.
„ 28. Leg of 1st pair.
„ 29. Piece of caudal segment, with one of the rudimentary caudal appendages.

Notophryxus clypeatus, G. O. Sars.

Fig. 30. Ovigerous female, viewed from above.
„ 31. Same animal, from below.
„ 32. Anterior part of body, viewed from below, considerably magnified.
„ 33. Male, viewed from right side, highly magnified.

Pl. XII.

Socarnes bidenticulatus, (Sp. Bate).

Fig. 1. Hun seet fra venstre Side.

Hippomedon Holbølli, (Kröyer), var.

Fig. 2. Hun seet fra høire Side.

Anonyx calcaratus, G. O. Sars.

Fig. 3. Hun seet fra høire Side.
„ *a*. Foler af 1ste Par.
„ *b*. Foler af 2det Par.
„ *c*. En af Kindbakkerne.
„ *d*. Kjæve af 1ste Par.
„ *e*. Kjæve af 2det Par.
„ *f*. En af Kjævefødderne.
„ *g*. Fod af 1ste Par.
„ *h*. Fod af 2det Par.
„ *i*. Fod af 3die Par.
„ *k*. Fod af 7de Par.
„ *l*. En af sidste Par Halefødder.
„ *m*. Halevedhænget seet ovenfra.

Anonyx typhlops, G. O. Sars.

Fig. 4. Hun seet fra høire Side.
„ *a*. Foler af 1ste Par.
„ *b*. Foler af 2det Par.
„ *c*. En af Kindbakkerne.

Pl. XII.

Socarnes bidenticulatus, (Sp. Bate).

Fig. 1. Female, viewed from left side.

Hippomedon Holbølli, (Kröyer), var.

Fig. 2. Female, viewed from right side.

Anonyx calcaratus, G. O. Sars.

Fig. 3. Female, viewed from right side.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. A mandible.
„ *d*. Maxilla of 1st pair.
„ *e*. Maxilla of 2nd pair.
„ *f*. A maxilliped.
„ *g*. Leg of 1st pair.
„ *h*. Leg of 2nd pair.
„ *i*. Leg of 3rd pair.
„ *k*. Leg of 7th pair.
„ *l*. Caudal stylet of last pair.
„ *m*. Telson, viewed from above.

Anonyx typhlops, G. O. Sars.

Fig. 4. Female, viewed from right side.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. A mandible.

Fig. *d*. Kjæve af 1ste Par.
„ *e*. Kjæve af 2det Par.
„ *f*. En af Kjævefødderne.
„ *g*. Fod af 1ste Par.
„ *h*. Fod af 2det Par.
„ *i*. Endepartiet af en Fod af 3die Par.
„ *k*. Spidsen af Bagkroppen med Halevedhænget og sidste Par Springfødder, seet ovenfra.

Onesimus turgidus. G. O. Sars.

Fig. 5. Hun seet fra høire Side.
„ 5 *x*. Samme ovenfra.
„ *a*. Foler af 1ste Par.
„ *b*. Foler af 2det Par.
„ *c*. En af Kindbakkerne.
„ *d*. Kjæve af 1ste Par.
„ *e*. Kjæve af 2det Par.
„ *f*. En af Kjævefødderne.
„ *g*. Fod af 1ste Par.
„ *h*. Fod af 2det Par.
„ *i*. Enden af Bagkroppen med Halevedhænget og de 2 Par bagerste Springfødder, seet ovenfra.

Fig. *d*. Maxilla of 1st pair.
„ *e*. Maxilla of 2nd pair.
„ *f*. A maxilliped.
„ *g*. Leg of 1st pair.
„ *h*. Leg of 2nd pair.
„ *i*. Terminal part of leg of 3rd pair.
„ *k*. Extremity of posterior division of body, with telson and last pair of caudal stylets, viewed from above.

Onesimus turgidus, G. O. Sars.

Fig. 5. Female, viewed from right side.
„ 5 *x*. Same animal, viewed from above.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. A mandible.
„ *d*. Maxilla of 1st pair.
„ *e*. Maxilla of 2nd pair.
„ *f*. A maxilliped.
„ *g*. Leg of 1st pair.
„ *h*. Leg of 2nd pair.
„ *i*. Extremity of posterior division of body, with telson and last 2 pairs of caudal stylets, viewed from above.

Pl. XIII.

Onesimus leucopis. G. O. Sars.

Fig. 1. Hun seet fra høire Side.
„ 1 *a*. Spidsen af Bagkroppen med Halevedhænget og sidste Par Springfødder, ovenfra.

Tryphosa pusilla, G. O. Sars.

Fig. 2. Hun seet fra venstre Side.
„ 2 *a*. Spidsen af Bagkroppen med Halevedhænget og sidste Par Springfødder, ovenfra.

Acidostoma laticorne, G. O. Sars.

Fig. 3. Han seet fra venstre Side.
„ 3 *a*. Spidsen af Bagkroppen med Halevedhænget og de 2 bagerste Par Springfødder, ovenfra.

Phoxus oculatus. G. O. Sars.

Fig. 4. Hun seet fra venstre Side.
„ *a*. Foler af 1ste Par.
„ *b*. Foler af 2det Par.
„ *c*. Fod af 1ste Par.
„ *d*. Enden af 2det Par Epimerer.
„ *e*. Spidsen af Bagkroppen med Halevedhænget og sidste Par Springfødder.

Pl. XIII.

Onesimus leucopis. G. O. Sars.

Fig. 1. Female, viewed from right side.
„ 1 *a*. Extremity of posterior division of body, with telson and last pair of caudal stylets, viewed from above.

Tryphosa pusilla, G. O. Sars.

Fig. 2. Female, viewed from left side.
„ 2 *a*. Extremity of posterior division of body, with telson and last pair of caudal stylets, viewed from above.

Acidostoma laticorne, G. O. Sars.

Fig. 3. Male, viewed from left side.
„ 3 *a*. Extremity of posterior division of body, with telson and last 2 pairs of caudal stylets, viewed from above.

Phoxus oculatus. G. O. Sars.

Fig. 4. Female, viewed from left side.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. Leg of 1st pair.
„ *d*. End of 2nd pair of epimera.
„ *e*. Extremity of posterior division of body, with telson and last pair of caudal stylets.

Harpinia abyssi. G. O. Sars.

Fig. 5. Hun seet fra høire Side.
„ *a*. Føler af 1ste Par.
„ *b*. Føler af 2det Par.
„ *c*. En af Kindbakkerne.
„ *d*. Kjæve af 1ste Par.
„ *e*. Kjæve af 2det Par.
„ *f*. En af Kjævefødderne.
„ *g*. Fod af 1ste Par.
„ *h*. Fod af 3die Par.
„ *i*. Fod af 5te Par.
„ *k*. Fod af 7de Par.
„ *l*. En af sidste Par Springfødder.
„ *m*. Halevedhænget ovenfra.

Harpinia carinata. G. O. Sars.

Fig. 6. Han seet fra venstre Side.
„ *a*. Føler af 1ste Par.
„ *b*. Føler af 2det Par.
„ *c*. Fod af 1ste Par.
„ *d*. Fod af 7de Par.
„ *e*. Spidsen af Bagkroppen med Halevedhænget og sidste Par Springfødder, ovenfra.

Harpinia mucronata. G. O. Sars.

Fig. 7. Hun seet fra venstre Side.
„ *a*. Føler af 1ste Par.
„ *b*. Føler af 2det Par.
„ *c*. Fod af 1ste Par med det tilhørende Epimer.
„ *d*. Fod af 7de Par.
„ *e*. En af sidste Par Halefødder.
„ *f*. Halevedhænget ovenfra.
„ *g*. En af 3die Bagkropssegments Sideplader.

Harpinia serrata. G. O. Sars.

Fig. 8. Hun seet fra venstre Side.
„ *a*. Føler af 1ste Par.
„ *b*. Føler af 2det Par.
„ *c*. Fod af 1ste Par.
„ *d*. Fod af 7de Par.

Harpinia abyssi. G. O. Sars.

Fig. 5. Female, viewed from right side.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. A mandible.
„ *d*. Maxilla of 1st pair.
„ *e*. Maxilla of 2nd pair.
„ *f*. A maxilliped.
„ *g*. Leg of 1st pair.
„ *h*. Leg of 2nd pair.
„ *i*. Leg of 5th pair.
„ *k*. Leg of 7th pair.
„ *l*. Caudal stylet of last pair.
„ *m*. Telson, viewed from above.

Harpinia carinata. G. O. Sars.

Fig. 6. Male, viewed from left side.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. Leg of 1st pair.
„ *d*. Leg of 7th pair.
„ *e*. Extremity of posterior division of body, with telson and last pair of caudal stylets, viewed from above.

Harpinia mucronata. G. O. Sars.

Fig. 7. Female, viewed from left side.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. Leg of 1st pair, with appertinent epimerum.
„ *d*. Leg of 7th pair.
„ *e*. Caudal stylet of last pair.
„ *f*. Telson, viewed from above.
„ *g*. Lateral plate of 3rd abdominal segment.

Harpinia serrata. G. O. Sars.

Fig. 8. Female, viewed from left side.
„ *a*. Antenna of 1st pair.
„ *b*. Antenna of 2nd pair.
„ *c*. Leg of 1st pair.
„ *d*. Leg of 7th pair.

Pl. XIV.

Urothoë abbreviata. G. O. Sars.

Fig. 1. Hun seet fra høire Side, stærkt forstorret.

Epimeria loricata. G. O. Sars.

Fig. 2. Hun seet fra venstre Side, svagt forstorret.

Pl. XIV.

Urothoë abbreviata. G. O. Sars.

Fig. 1. Female, viewed from left side, highly magnified.

Epimeria loricata. G. O. Sars.

Fig. 2. Female, viewed from left side, slightly magnified.

Paramphithoë euacantha, G. O. Sars.

Fig. 3. Hun seet fra høire Side.
„ *a*. Fod af 1ste Par.
„ *b*. Halevedhænget ovenfra.

Oediceros machrocheir, G. O. Sars.

Fig. 4. Hun seet fra venstre Side.

Halirages quadridentatus, G. O. Sars.

Fig. 4. (*bis.*) Hun seet fra høire Side.
„ *a*. En af Kindbakkerne.
„ *b*. Kjæve af 1ste Par.
„ *c*. Kjæve af 2det Par.
„ *d*. Fod af 1ste Par med det tilhørende Epimer.
„ *e*. En af 3die Bagkropssegments Sideplader.
„ *f*. Spidsen af Bagkroppen med Halevedhænget og de 2 bagre Springfødder paa venstre Side, oventra seet.

Cleïppides quadricuspis, Heller.

Fig. 5. Ægbærende Hun seet fra venstre Side, svagt forstorret.

Amphithopsis pulchella, G. O. Sars.

Fig. 5. Hun seet fra venstre Side.
„ *a*. En af Kindbakkerne.
„ *b*. Kjæve af 1ste Par.
„ *c*. Fod af 1ste Par.
„ *d*. Fod af 2det Par.
„ *e*. Spidsen af Bagkroppen med Halevedhænget og sidste Par Springfødder, ovenfra.

Mœra tenera, G. O. Sars.

Fig. 6. Hun seet fra venstre Side.

Paramphithoë euacantha, G. O. Sars.

Fig. 3. Female, viewed from right side.
„ *a*. Leg of 1st pair.
„ *b*. Telson, viewed from above.

Oediceros machrocheir, G. O. Sars.

Fig. 4. Female, viewed from left side.

Halirages quadridentatus, G. O. Sars.

Fig. 4. (*bis.*) Female, viewed from right side.
„ *a*. A mandible.
„ *b*. Maxilla of 1st pair.
„ *c*. Maxilla of 2nd pair.
„ *d*. Leg of 1st pair, with appertinent epimerum.
„ *e*. Lateral plate of 3rd abdominal segment.
„ *f*. Extremity of posterior division of body, with telson and last 2 caudal stylets on left side, viewed from above.

Cleïppides quadricuspis, Heller.

Fig. 5. Ovigerous female, viewed from left side, slightly magnified.

Amphithopsis pulchella, G. O. Sars.

Fig. 5. Female, viewed from left side.
„ *a*. A mandible.
„ *b*. Maxilla of 1st pair.
„ *c*. Leg of 1st pair.
„ *d*. Leg of 2nd pair.
„ *e*. Extremity of posterior division of body, with telson and last pair of caudal stylets, viewed from above.

Mœra tenera, G. O. Sars.

Fig. 6. Female, viewed from left side.

Pl. XV.

Melita pallida, G. O. Sars.

Fig. 1. Han seet fra venstre Side, svagt forstorret.
„ *a*. Et Stykke af en Foler af 1ste Par med Enden af Skaftet, Bisvoben og Basis af den egentlige Svobe.
„ *b*. En af Kindbakkerne.
„ *c*. Kjæve af 1ste Par.
„ *d*. Kjæve af 2det Par.
„ *e*. En af Kjævefødderne.
„ *f*. Fod af 1ste Par.
„ *g*. Fod af 2det Par.
„ *h*. Den bagerste Del af Legemet seet ovenfra.

Pl. XV.

Melita pallida, G. O. Sars.

Fig. 1. Male, viewed from left side, slightly magnified.
„ *a*. Part of an antenna of 1st pair, comprising extremity of peduncle, secondary flagellum, and base of true flagellum.
„ *b*. A mandible.
„ *c*. Maxilla of 1st pair.
„ *d*. Maxilla of 2nd pair.
„ *e*. A maxilliped.
„ *f*. Leg of 1st pair.
„ *g*. Leg of 2nd pair.
„ *h*. Hindmost part of body, viewed from above.

Fig. *i*. En af 2det Par Springfodder.
„ *k*. En af sidste Par Springfodder.
„ *l*. Halevedhænget ovenfra.

Amathillopsis spinigera, Heller.

Fig. 2. Ægbærende Hun seet fra høire Side, ganske svagt forstorret.

Bruzelia serrata, G. O. Sars.

Fig. 3. Hun seet fra venstre Side.
„ *a*. Et Stykke af en Foler af 1ste Par med Enden af Skaftet, Bisvøben og Basis af den egentlige Svøbe.
„ *b*. Overlæben.
„ *c*. En af Kindbakkerne fra den ydre Side.
„ *d*. Samme seet forfra.
„ *e*. Kjæve af 1ste Par.
„ *f*. Kjæve af 2det Par.
„ *g*. Kjævefødderne.
„ *h*. Fod af 1ste Par.
„ *i*. En af 3die Bagkropssegments Sideplader.
„ *k*. Spidsen af Bagkroppen med Halevedhænget og de 2 bagre Springfødder paa høire Side, ovenfra seet.

Metopa spectabilis, G. O. Sars.

Fig. 4. Hun seet fra venstre Side.
„ *a*. Enden af en af 2det Par Følere med den rudimentære Svøbe.
„ *b*. Overlæben.
„ *c*. Underlæben.
„ *d*. En af Kindbakkerne.
„ *e*. Kjæve af 1ste Par.
„ *f*. Kjæve af 2det Par.
„ *g*. En af Kjævefødderne.
„ *h*. Fod af 1ste Par.
„ *i*. Fod af 2det Par hos Hunnen.
„ *k*. Samme Fod hos Hannen.
„ *l*. Fod af 5te Par.
„ *m*. Sidste Par Springfødder.
„ *n*. Halevedhænget ovenfra.

Metopa œqricornis, G. O. Sars.

Fig. 5. Hun seet fra venstre Side.

Fig. *i*. Caudal stylets of 2nd pair.
„ *k*. Caudal stylets of last pair.
„ *l*. Telson, viewed from above.

Amathillopsis spinigera, Heller.

Fig. 2. Ovigerous female, viewed from right side, very slightly magnified.

Bruzelia serrata, G. O. Sars.

Fig. 3. Female, viewed from left side.
„ *a*. Part of an antenna of 1st pair, comprising extremity of peduncle, secondary flagellum, and base of true flagellum.
„ *b* Labrum.
„ *c*. A mandible, viewed from outer side.
„ *d*. Same, viewed anteriorly.
„ *e*. Maxilla of 1st pair.
„ *f*. Maxilla of 2nd pair.
„ *g*. Maxillipeds.
„ *h*. Leg of 1st pair.
„ *i*. Lateral plate of 3rd abdominal segment.
„ *k*. Extremity of posterior division of body, with telson and last 2 caudal stylets on right side, viewed from above.

Metopa spectabilis, G. O. Sars.

Fig. 4. Female, viewed from left side.
„ *a*. Extremity of an antenna of 2nd pair, with the rudimentary flagellum.
„ *b*. Labrum.
„ *c*. Labium.
„ *d*. A mandible.
„ *e*. Maxilla of 1st pair.
„ *f*. Maxilla of 2nd pair.
„ *g*. A maxilliped.
„ *h*. Leg of 1st pair.
„ *i*. Leg of 2nd pair, in female.
„ *k*. Same leg, in male.
„ *l*. Leg of 5th pair.
„ *m*. Last pair of caudal stylets.
„ *n*. Telson, viewed from above.

Metopa œqricornis, G. O. Sars.

Fig. 5. Female, viewed from left side.

Pl. XVI.

Danaïa abyssi, G. O. Sars.

Fig. 1. Hun seet fra venstre Side.
„ 1 *a*. Fod af 2det Par.

Pl. XVI.

Danaïa abyssi, G. O. Sars.

Fig. 1. Female, viewed from left side.
„ 1 *a*. Leg of 2nd pair.

Lilljeborgia arquicornis, G. O. Sars.

Fig. 2. Hun seet fra venstre Side.
„ 2 *a*. Forkroppen af en Han fra samme Side, visende det eiendommeligt formede 1ste Fodpar.

Tritropis appendiculata, G. O. Sars.

Fig. 3. Han(?) seet fra venstre Side.
„ 3 *a*. Et Stykke af 1ste Par Foleres Svobe, visende de stærkt udviklede Calceoler.

Ampelisca odontoplax, G. O. Sars.

Fig. 4. Hun seet fra høire Side.

Ampelisca minuticornis, G. O. Sars.

Fig. 5. Hun seet fra venstre Side.
„ *a*. Foler af 1ste Par.
„ *b*. En af Kindbakkerne.
„ *c*. Underlæben.
„ *d*. Kjæve af 1ste Par.
„ *e*. Kjæve af 2det Par.
„ *f*. En af Kjævefødderne.
„ *g*. Fod af 1ste Par.
„ *h*. Fod af 2det Par.
„ *i*. Fod af 4de Par.
„ *k*. Basis af en Fod af 6te Par med det tilhørende Epimer.
„ *l*. Fod af 7de Par.
„ *m*. Springfod af 1ste Par.
„ *n*. Springfod af 2det Par.
„ *o*. Spidsen af Bagkroppen med Halevedhænget og sidste Par Springfødder, ovenfra.

Byblis abyssi, G. O. Sars.

Fig. 6. Hun seet fra høire Side.

Antonoë megacheir, G. O. Sars.

Fig. 7. Han seet fra venstre Side.

Lilljeborgia arquicornis, G. O. Sars.

Fig. 2. Female, viewed from right side.
„ 2 *a*. Anterior division of body, in male, from same side, showing 1st pair of legs and their peculiar formation.

Tritropis appendiculata, G. O. Sars.

Fig. 3. Male(?), viewed from left side.
„ 3 *a*. Fragment of flagellum from 1st pair of antenna, showing the strongly developed calceolæ.

Ampelisca odontoplax, G. O. Sars.

Fig. 4. Female, viewed from right side.

Ampelisca minuticornis, G. O. Sars.

Fig. 5. Female, viewed from left side.
„ *a*. Antenna of 1st pair.
„ *b*. A mandible.
„ *c*. Labium.
„ *d*. Maxilla of 1st pair.
„ *e*. Maxilla of 2nd pair.
„ *f*. A maxilliped.
„ *g*. Leg of 1st pair.
„ *h*. Leg of 2nd pair.
„ *i*. Leg of 4th pair.
„ *k*. Base of leg of 6th pair, with appertinent epimerum.
„ *l*. Leg of 7th pair.
„ *m*. Caudal stylet of 1st pair.
„ *n*. Caudal stylet of 2nd pair.
„ *o*. Extremity of posterior division of body, along with telson and last pair of caudal stylets, viewed from above.

Byblis abyssi, G. O. Sars.

Fig. 6. Female, viewed from right side.

Antonoë megacheir, G. O. Sars.

Fig. 7. Female, viewed from left side.

Pl. XVII.

Podocerus assimilis, G. O. Sars.

Fig. 1. Hun seet fra høire Side.
„ *a*. Et Stykke af en Foler af 1ste Par med Enden af Skaftet, Bisvoben og Basis af den egentlige Svobe.
„ *b*. Fod af 1ste Par.
„ *c*. Fod af 2det Par hos Hannen.

Pl. XVII.

Podocerus assimilis, G. O. Sars.

Fig. 1. Female, viewed from right side.
„ *a*. Part of an antenna of 1st pair, comprising extremity of peduncle, secondary flagellum, and base of true flagellum.
„ *b*. Leg of 1st pair.
„ *c*. Leg of 2nd pair, in male.

Prodocerus brevicornis. G. O. Sars.

Fig. 2. Hun seet fra venstre Side.
„ *a*. Et Stykke af en Foler af 1ste Par med Enden af Skaftet. Bisvoben og Basis af den egentlige Svobe.
„ *b*. Fod af 1ste Par.
„ *c*. Fod af 2det Par hos Hannen.

Podocerus tenuicornis. G. O. Sars.

Fig. 3. Hun seet fra venstre Side.

Erichthonius megalops. G. O. Sars.

Fig. 4. Hun seet fra hoire Side.
„ *a*. Fod af 1ste Par.
„ *b*. Fod af 2det Par hos Hannen.

Unciola petalocera, G. O. Sars.

Fig. 5. Han seet fra venstre Side.
„ 5 *x*. Hun fra hoire Side.
„ *a*. Et Stykke af en Foler af 1ste Par med Enden af Skaftet. Bisvoben og Basis af den egentlige Svobe.
„ *b*. Foler af 2det Par hos Hannen.
„ *c*. En af Kindbakkerne.
„ *d*. Kjæve af 1ste Par.
„ *e*. Kjæve af 2det Par.
„ *f*. En af Kjævefodderne.
„ *g*. Fod af 1ste Par hos Hannen.
„ *h*. Samme Fod hos Hunnen.
„ *i*. Fod af 2det Par.
„ *k*. Enden af Bagkroppen ovenfra med Halevedhænget, sidste Par Springfodder og de 2 foregaaende Springfodder paa venstre Side.
„ *l*. En af sidste Par Springfodder isoleret.

Dulichia tuberculata. Boeck.

Fig. 6. Ægbærende Hun seet fra venstre Side.
„ 6 *x*. Han fra høire Side.

Podocerus brevicornis. G. O. Sars.

Fig. 2. Female, viewed from right side.
„ *a*. Part of an antenna of 1st pair, comprising extremity of peduncle, secondary flagellum, and base of true flagellum.
„ *b*. Leg of 1st pair.
„ *c*. Leg of 2nd pair, in male.

Podocerus tenuicornis. G. O. Sars.

Fig. 3. Female, viewed from left side.

Erichthonius megalops, G. O. Sars.

Fig. 4. Female, viewed from right side.
„ *a*. Leg of 1st pair.
„ *b*. Leg of 2nd pair, in male.

Unciola petalocera. G. O. Sars.

Fig. 5. Male, viewed from left side.
„ 5 *x*. Female, viewed from right side.
„ *a*. Part of an antenna of 1st pair, comprising extremity of peduncle, secondary flagellum, and base of true flagellum.
„ *b*. Antenna of 2nd pair, in male.
„ *c*. A mandible.
„ *d*. Maxilla of 1st pair.
„ *e*. Maxilla of 2nd pair.
„ *f*. A maxilliped.
„ *g*. Leg of 1st pair, in male.
„ *h*. Same leg, in female.
„ *i*. Leg of 2nd pair.
„ *k*. Extremity of posterior division of body, viewed from above, along with telson, last pair of caudal stylets, and the 2 preceding caudal stylets on left side.
„ *l*. Caudal stylet of last pair, isolated.

Dulichia tuberculata, Boeck.

Fig. 6. Ovigerous female, viewed from left side.
„ 6 *x*. Male, viewed from right side.

Pl. XVIII.

Dulichia hirticornis. G. O. Sars.

Fig. 1. Ægbærende Hun seet fra hoire Side.
„ 1 *a*. Fod af 2det Par hos Hannen.

Dulichia macera. G. O. Sars.

Fig. 2. Han seet fra venstre Side.
„ 2 *a*. Enden af en Foler af 1ste Par hos Hunnen, med Bisvoben og den egentlige Svobe.

Pl. XVIII.

Dulichia hirticornis. G. O. Sars.

Fig. 1. Ovigerous female, viewed from right side.
„ 1 *a*. Leg of 2nd pair, in male.

Dulichia macera. G. O. Sars.

Fig. 2. Male, viewed from left side.
„ 2 *a*. Extremity of an antenna of 1st pair, in female, along with secondary flagellum and true flagellum.

Caprella microtuberculata, G. O. Sars.

Fig. 3. Ægbærende Hun seet fra høire Side.
„ 3 *x*. Den forreste Del af Legemet af en Han fra samme Side.
„ 3 *a*. Fod af 1ste Par stærkere forstørret.

Caprella spinosisissima, Norman.

Fig. 4. Ægbærende Hun seet fra høire Side.
„ 4 *x*. Han fra samme Side.
„ *a*. Overlæben.
„ *b*. Underlæben.
„ *c*. En af Kindbakkerne.
„ *d*. Kjæve af 1ste Par.
„ *e*. Kjæve af 2det Par.
„ *f*. Kjævefødderne; Palpen paa høire Side er udeladt.
„ *g*. Hunnens Bagkrop seet ovenfra.
„ *h*. Samme nedenfra.
„ *i*. Fod af 1ste Par hos Hannen.
„ *k*. Hannens Bagkrop med de foran samme beliggende ydre Kjønsvedhæng seet nedenfra.
„ *l*. Samme fra høire Side.

Ægina spinifera, Bell.

Fig. 5. Ægbærende Hun seet fra venstre Side.
„ 5 *x*. Den forreste Del af Legemet af en Han fra samme Side.
„ *a*. En af Kindbakkerne.
„ *b*. Fod af 1ste Par.
„ *c*. Hannens Bagkrop seet fra venstre Side.

Caprella microtuberculata, G. O. Sars.

Fig. 3. Ovigerous female, viewed from right side.
„ 3 *x*. Foremost part of body, in male, from same side.
„ 3 *a*. Leg of 1st pair, more highly magnified.

Caprella spinosisissima, Norman.

Fig. 4. Ovigerous female, viewed from right side.
„ 4 *x*. Male, from same side.
„ *a*. Labrum.
„ *b*. Labium.
„ *c*. A mandible.
„ *d*. Maxilla of 1st pair.
„ *e*. Maxilla of 2nd pair.
„ *f*. Maxillipeds (palp on right side omitted).
„ *g*. Posterior division of body, in female, viewed from above.
„ *h*. Same part, same sex, from below.
„ *i*. Leg of 1st pair, in male.
„ *k*. Posterior division of body, in male, with the anterior-placed outer sexual appendices, viewed from below.
„ *l*. Same part, from right side.

Ægina spinifera, Bell.

Fig. 5. Ovigerous female, viewed from left side.
„ 5 *x*. Foremost part of body, in male, from same side.
„ *a*. A mandible.
„ *b*. Leg of 1st pair.
„ *c*. Posterior division of body, in male, viewed from left side.

Pl. XIX.

Euchæta norvegica, Boeck.

Fig. 1. Ægbærende Hun seet ovenfra.
„ 2. Samme fra høire Side.
„ 3. Pandehornet ovenfra stærkere forstørret.
„ 4. Overlæben.
„ 5. Foler af 2det Par.
„ 6. En af Kindbakkerne.
„ 7. En af Kjæverne.
„ 8. Kjævefod af 1ste Par.
„ 9. Kjævefod af 2det Par.
„ 10. Svømmefod af 1ste Par.
„ 11. Svømmefod af 2det Par.
„ 12. Svømmefod af 4de Par.
„ 13. Enden af Bagkroppen med Furca og Basis af Halebørsterne.
„ 14. Slægtsmoden Han seet ovenfra.

Pl. XIX.

Euchæta norvegica. Boeck.

Fig. 1. Ovigerous female, viewed from above.
„ 2. Same animal, from right side.
„ 3. Rostrum, from above, considerably magnified.
„ 4. Labrum.
„ 5. Antenna of 2nd pair.
„ 6. A mandible.
„ 7. A maxilla.
„ 8. Maxilliped of 1st pair.
„ 9. Maxilliped of 2nd pair.
„ 10. Natatory leg of 1st pair.
„ 11. Natatory leg of 2nd pair.
„ 12. Natatory leg of 4th pair.
„ 13. Extremity of posterior division of body, comprising furca and base of caudal bristles.
„ 14. Sexually mature male, viewed from above.

Fig. 15. Basis af en af sammes 1ste Par Folere, visende de baandformige Sandsevedhæng.
„ 16. En af dens rudimentære Kindbakker.
„ 17. En af Kjæverne.
„ 18. Kjævefod af 1ste Par.
„ 19. Kjævefod af 2det Par.
„ 20. 5te Fodpar (Gribefodderne) nedenfra.
„ 21. Endepartiet af den høire Fod.

Fig. 15. Base of an antenna of 1st pair, same animal, showing the riband-shaped sensory appendages.
„ 16. Rudimentary mandible, same animal.
„ 17. A maxilla.
„ 18. Maxilliped of 1st pair.
„ 19. Maxilliped of 2nd pair.
„ 20. Fifth pair of legs (prehensile), viewed from below.
„ 21. Terminal part of right leg.

Pl. XX.

Scalpellum Strømii, M. Sars.

Fig. 1. Et fuldstændigt Exemplar fastsiddende paa en Tubulariestamme, seet fra Siden.
„ 2. Samme fra den ventrale Side.

Scalpellum angustum, G. O. Sars.

Fig. 3. Et Exemplar seet fra Siden.
„ 4. Samme nedenfra.

Scalpellum striolatum, G. O. Sars.

Fig. 5. Et Exemplar fastsiddende paa en Steen, seet fra Siden.
„ 6. Samme nedenfra.
„ 7. En supplementær Han fra Siden, stærkt forstorret.

Scalpellum cornutum, G. O. Sars.

Fig. 8. Et Exemplar fastheftet til en Tubulariestamme, seet fra Siden.
„ 9. Samme nedenfra.
„ 10. Samme ovenfra.

Scalpellum hamatum, G. O. Sars.

Fig. 11. Et Exemplar seet fra Siden.
„ 12. Samme nedenfra.
„ 13. Et af Stilkens Kalkkorn tilligemed den ydre Bekledningsmembran i Gjennemsnit, stærkt forstorret.

Balanus crenatus, Brug., varietas.

Fig. 14. Et Exemplar med kortere Skalvæg.
„ 15. Et andet stærkt forlænget Exemplar.

Sylon Hymenodorae, G. O. Sars.

Fig. 16. Et Exemplar fastheftet til Bugsiden af en Hymenodora glacialis, seet nedenfra.
„ 17. Samme Exemplar seet fra Siden.

Pl. XX.

Scalpellum Strømii, M. Sars.

Fig. 1. A perfect specimen attached to a tubularian stalk, lateral aspect.
„ 2. Same animal, ventral aspect.

Scalpellum angustum, G. O. Sars.

Fig. 3. Specimen, lateral aspect.
„ 4. Same, viewed from below.

Scalpellum striolatum, G. O. Sars.

Fig. 5. Specimen attached to a stone, lateral aspect.
„ 6. Same, viewed from below.
„ 7. Supplementary male, lateral aspect, highly magnified.

Scalpellum cornutum, G. O. Sars.

Fig. 8. Specimen attached to a tubularian stalk, lateral aspect.
„ 9. Same, viewed from below.
„ 10. Same, viewed from above.

Scalpellum hamatum, G. O. Sars.

Fig. 11. Specimen, lateral aspect.
„ 12. Same, viewed from below.
„ 13. Calcareous granule of stalk, along with outer investing membrane, transverse section, highly magnified.

Balanus crenatus, Brug., varietas.

Fig. 14. Specimen, with comparatively short testaceous walls.
„ 15. Another, exceedingly elongate specimen.

Sylon Hymenodorae, G. O. Sars.

Fig. 16. Specimen attached to ventral side of Hymenodora glacialis, viewed from below.
„ 17. Same specimen, lateral aspect.

Pseudomysis abyssi. G. O. Sars.

Fig. 18. Forenden af Legemet med de rudimentære Øine og Folerne, seet ovenfra.
„ 19. En af Fodderne med sin Svommegren.
„ 20. Det ydre Parti af en Fod stærkere forstorret.

Hyperiopsis Yoringii. G. O. Sars.

Fig. 21. Hun seet fra venstre Side.

Pseudomysis abyssi. G. O. Sars.

Fig. 18. Anterior division of body, along with the rudimentary eyes and antennæ, viewed from above.
„ 19. Leg, with appertinent natatory branch.
„ 20. Outer part of a leg, considerably magnified.

Hyperiopsis Yoringii. G. O. Sars.

Fig. 21. Female, viewed from left side.

Pl. XXI.

Sphyrapus serratus. G. O. Sars.

Fig. 1. Hun seet ovenfra.
„ 2. Samme fra venstre Side.
„ 3. Forenden af Legemet seet nedenfra, visende Munddelene i Situs.
„ 4. Spidsen af Pandehornet stærkere forstorret.
„ 5. Foler af 1ste Par.
„ 6. Foler af 2det Par.
„ 7. Overlæben.
„ 8. Underlæben.
„ 9. Kindbakkerne og Overlæben bagfra.
„ 10. Kindbakkernes forreste Ender stærkere forstorrede.
„ 11. En af Kindbakkernes Palpe.
„ 12. Kjæve af 1ste Par.
„ 13. Kjæve af 2det Par.
„ 14. En af sammes Tyggelapper stærkere forstorret.
„ 15. Kjævefodderne. Den membranose Vifte er kun afbildet paa venstre Side.
„ 16. Kjævefoddernes Vifte isoleret og udbredt i et Plan.
„ 17. En af Saxfodderne fra den ydre Side.
„ 18. Et Stykke af den ubevægelige Fingers Griberand stærkt forstorret.
„ 19. Den rudimentære Exopodit isoleret.
„ 20. En af Gravefodderne.
„ 21. Gangfod af 1ste Par.
„ 22. Gangfod af 3die Par.
„ 23. Den til sidste Led af samme fæstede Horeborste stærkt forstorret.
„ 24. Gangfod af sidste Par.
„ 25. En af Pleopoderne.
„ 26. Enden af Bagkroppen, seet nedenfra, med Halevedhængene.
„ 27. Slægtsmoden Han seet fra venstre Side.
„ 28. En af dens 1ste Par Folere.
„ 29. Yderdelen af en Saxfod.
„ 30. Yderdelen af en Gravefod.
„ 31. Endepladerne paa en af Pleopoderne.

Pl. XXI.

Sphyrapus serratus. G. O. Sars.

Fig. 1. Female, viewed from above.
„ 2. Same animal, viewed from left side.
„ 3. Anterior division of body, viewed from below, exhibiting oral appendages *in situ*.
„ 4. Point of rostrum, considerably magnified.
„ 5. Antenna of 1st pair.
„ 6. Antenna of 2nd pair.
„ 7. Labrum.
„ 8. Labium.
„ 9. Mandibles and labrum, posterior aspect.
„ 10. Foremost extremities of mandibles, considerably magnified.
„ 11. Mandibular palp.
„ 12. Maxilla of 1st pair.
„ 13. Maxilla of 2nd pair.
„ 14. Masticatory lobe of same, considerably magnified.
„ 15. Maxillipeds. The membranous flabellum is represented on the left side only.
„ 16. Flabellum of maxillipeds, isolated and extended in a plane.
„ 17. A cheliped from outer side.
„ 18. Fragment of immovable finger's palmar margin, highly magnified.
„ 19. Rudimentary exopodite, isolated.
„ 20. Fossorial leg.
„ 21. Ambulatory leg of 1st pair.
„ 22. Ambulatory leg of 3rd pair.
„ 23. Auditory bristle attached to last joint, highly magnified.
„ 24. Ambulatory leg of last pair.
„ 25. A pleopod.
„ 26. Extremity of posterior division of body, viewed from below, with caudal appendages.
„ 27. Sexually mature male, viewed from left side.
„ 28. Antenna of 1st pair.
„ 29. Outer part of cheliped.
„ 30. Outer part of fossorial leg.
„ 31. Terminal plates of a pleopod.

Tillæg.

Da nærværende Afhandling allerede for flere Aar siden har været færdig fra min Haand og indleveret til Trykken, og jeg saaledes ikke har kunnet i Texten tage Hensyn til hvad der midlertidig er publiceret af andre Forskere, tror jeg at burde vedfoie følgende supplerende Bemærkninger.

Scyramathia Carpenteri, (Norman), pg. 6.

Af Prof. Sidney Smith er nylig beskrevet, under Benævnelsen *Amathia Agassizi*, en Form, som aabenbart gaar ind under Slægten *Scyramathia*, skjondt Arten er forskjellig fra den nordiske Form. I hvilket nærmere Forhold Stimpson's *Scyra umbonata* staar til denne, eller til vor Form, er endnu fremdeles uoplyst.

Eupagurus tricarinatus, (Norman), pg. 11.

Ved noiere Sammenligning med den middelhavske Form *E. meticulosus* Roux, hvoraf jeg har havt Anledning til at undersoge 2 Exemplarer tagne ved Neapel, finder jeg, at Norman's *E. tricarinatus* er utvivlsomt identisk med denne. Da Roux's Artsbenævnelse er den langt ældre, maa den selvfølgelig bibeholdes for Arten.

Sclerocrangon salebrosus, (Owen), pg. 15.

Arten er under det af mig forst foreslaaede Navn, *Cheraphilus ferox*, omtalt af Dr. Hoek[1] som forekommende paa flere Steder i Osthavet paa Dybder fra 62 til 160 Favne, og en smuk Afbildning leveret af en ægbærende Hun. Den af Prof. Sidney Smith som *Cheraphilus Agassizi* beskrevne Art fra Østkysten of de forenede Stater, tilhorer samme Slægt.

[1] Die Crustaceen, gesammelt während der Fahrten des "Willem Barents" in den Jahren 1878 und 1879.

Supplementary.

The present Memoir having several years since left the pen of the Author and been sent to the President of the Editorial Committee for publication, no regard could obviously be taken, in the body of the work, to what has meanwhile appeared on the subject from other zoologists; and hence it will not, I opine, be out of place to append the following notes.

Scyramathia Carpenteri, (Norman), p. 6.

Professor Sidney Smith has recently described, under the appellation *Amathia Agassizi*, a form evidently of the genus *Scyramathia*, though his species deviates from the Northern form. What relation Stimpson's *Scyra umbonata* bears to this or the Norwegian animal, must still remain an open question.

Eupagurus tricarinatus, (Norman), p. 11.

A closer comparison with the Mediterranean form, *E. meticulosus* Roux, two specimens of which — taken off the Naples coast — the Author has had opportunity of examining, leaves no doubt in his mind that Norman's *E. tricarinatus* and the latter are unquestionably identical. Roux's specific denomination being, however, of far anterior date, must of course be retained for the animal in question.

Sclerocrangon salebrosus, (Owen), p. 15.

This species is found recorded, under the name the Author first suggested, viz., *Cheraphilus ferox*, by Dr. Hoek,[1] as occurring throughout several tracts of the Barents' Sea, at depths ranging from 62 to 160 fathoms, — along with a fine representation of an ovigerous female. The species described by Professor Sidney Smith as *Cheraphilus Agassizi*, from the East Coast of the United States, belongs to the same genus.

[1] Die Crustaceen, gesammelt während der Fahrten des "Willem Barents" in den Jahren 1878 und 1879.

Bythocaris Payeri. (Heller). pg. 33.

Anfort af Dr. Hoek fra en enkelt-Station i Osthavet, 160 Favne. En Figur af den forreste Del af Kroppen, seet ovenfra, og af en Kindbakke er leveret. Norman omtaler ligeledes denne Form som forekommende meget almindelig paa en enkelt Station i Færo-Shetlands Renden.

Bythocaris Payeri. (Heller). p. 33.

Mentioned by Dr. Hoek as met with at a single Station in the Barents' Sea; depth 160 fathoms. A figure is furnished of the foremost part of the body, viewed from above, and also one of a mandible. Mr. Norman has likewise recorded this form as occurring rather plenttiful in a single Station in the Faroe Channel.

Hymenodora glacialis. (Buchhols). pg. 37.

Min Antagelse, at denne Form maa skarpt skilles fra Slægten *Pasiphaë*, hvortil Buchholz har henregnet den, og henføres til samme Familie som Slægten *Ephyra* Roux, er ved de nyeste Undersøgelser af denne sidste Slægt fuldkommen bekræftet. Da Navnet *Ephyra* har været anvendt tidligere i Zoologien, er det af Mr. Kingsley ombyttet med *Miersia*, og Familienavnet *Ephyridæ* maa vel derfor ogsaa ombyttes med *Miersiidæ*. Prof. Sidn. Smith har under Benævnelsen *Meningodora mollis* beskrevet en Form, der, skjøndt vistnok artsforskjellig fra *Hymenodora glacialis*, dog neppe kan generiskt adskilles. Senere fra samme Forfatter ogsaa anført *Hymenodora glacialis* som forekommende i Havet udenfor Nord-Amerikas Østkyst.

Hymenodora glacialis. (Buchholz). p. 37.

The opinon entertained by the Author as to this form being distinctly deviate from the genus *Pasiphaë*, under which Buchholz has classed it, and belonging rather the same family as the genus *Ephyra* Roux, is fully borne out by the most recent researches on the latter genus. The name *Ephyra* having previously been adopted in zoology, Mr. Kingsley has seen fit to substitute that of *Miersia*; and the family-designation *Ephyridæ* should therefore, in accordance herewith, presumably, be changed to *Miersiidæ*. Professor Sidney Smith has described, under the appellation *Meningodora mollis*, a form which, though no doubt specifically distinct from *Hymenodora glacialis*, will hardly admit of generic distinction. Subsequently, the said author has also recorded *Hymenodora glacialis*, as occurring off the eastern coast of North America.

Boreomysis nobilis. G. O. Sars. pg. 54.

Anfort af Norman fra en enkelt Station i Færo-Shetlands Renden.

Boreomysis nobilis. G. O. Sars. p. 54.

Recorded by Mr. Norman, from a single Station in the Faroe Channel.

Boreomysis scyphops. G. O. Sars, pg. 56.

Denne interesante Form er ogsaa repræsenteret blandt 'Challenger' Expeditionens Schizopoder, med hvis Bearbeidelse jeg i den senere Tid har været beskjæftiget. Høist mærkværdig er Artens Forekomst i omtrent den tilsvarende Region af Begge Hemisphærer, uden at være paatruffet i det mellemliggende Strog af Oceanet.

Boreomysis scyphops. G. O. Sars. p. 56.

This interesting form is also represented in the collection of Schizopoda from the 'Challenger' Expedition, kindly placed in my hands for investigation and description. The presence of the species throughout the well-nigh corresponding regions of both hemispheres, and yet without its ever being observed in any intermediate tract of the Ocean, would seem highly remarkable.

Synidotea bicuspida, (Owen). pg. 116.

Flere Exemplarer af denne characteristiske Form blev ifølge Hoek indsamlede under Expeditionen med "Willem Barents" i Havet om Novaja Zemlja. Miers[1] henfører denne Form til Slægten *Edotia* Guérin Méneville; men det

[1] Revision of the Idoteidæ, p. 66.

Synidotea bicuspida. (Owen). p. 116.

Several examples of this characteristic form were collected, according to Dr. Hoek, on the Expedition with the "Willem Barents", in the sea surrounding Novaja Zemlja. Miers[1] refers this form to the genus *Edotia*

[1] Revision of the Idoteidæ, p. 66.

synes mig dog rigtigst indtil videre at opretholde Hargers Slægt *Synidotea* for de 2 hoinordiske Arter *S. bicuspida* og *nodulosa*, da begge afviger bestemt fra den af Guérin Méneville beskrevne Form *Edotia tuberculata* ved den vel udviklede, mangeleddede Svobe paa 2det Par Følere.

Eurycope gigantea, G. O. Sars. pg. 130.

To incomplete Exemplarer af denne Form angives af Hoek som fundne ved Beeren Eiland paa 40 F. D.

Socarnes bidenticulatus, (Sp. Bate), pg. 139.

Denne Form er af Hoek (l. c.) beskreven og afbildet som en ny Art under Benævnelsen *Socarnes oralis*, efter Exemplarer tagne i Osthavet paa 124 og 160 F. D.

Onesimus leucopis, G. O. Sars. pg. 149.

Hoek henfører til denne Art et af ham undersøgt Exemplar, taget i Nærheden at Smeerenburg (N. Spitsbergen) paa circa 8 F. D. Da imidlertid Exemplaret, ifølge de af Hoek givne Meddelelser, synes at skille sig i enkelte Punkter fra det af mig undersøgte, og det desuden er fra ganske grundt Vand, medens det under Nordhavs Expeditionen tagne optoges fra et meget betydeligt Dyb, skulde jeg være tilbøielig til at betvivle Bestemmelsens Correcthed.

Podocerus asimilis, G. O. Sars, pg. 205.

Et enkelt Exemplar af denne Art er af Hr. Conservator Schneider taget ved Finmarkens Kyst (Tromsø).

Podocerus brevicornis, G. O. Sars. pg. 207.

Anføres af Hoek som funden i Osthavet paa en enkelt Lokalitet, Dybden 160 Favne.

Guérin Méneville; but in the Author's opinion, Harger's genus *Synidotea* should for the present be retained for the 2 Arctic species *S. bicuspida* and *S. nodulosa*, both differing distinctly from the form described by Guérin Méneville — *Edotia tuberculata* — in the well-developed, multi-articulate flagellum on the 2nd pair of antennæ.

Eurycope gigantea, G. O. Sars, p. 130.

Two defective specimens of this form are recorded by Dr. Hoek, as taken off Beeren Eiland, at a depth of 40 fathoms.

Socarnes bidenticulatus, (Sp. Bate), p. 139.

This form is described and figured by Dr. Hoek (l. c.), as a new species, under the name of *Socarnes oralis*, from examples obtained in the Barents' Sea, at a depth ranging from 124 to 160 fathoms.

Onesimus leucopis, G. O. Sars, p. 149.

Dr. Hoek refers to this form a specimen he has examined, taken in the vicinity of Smeerenberg (north of Spitzbergen); depth about 8 feet. Meanwhile, as this example, according to Dr. Hoek, would appear to deviate in many respects from that examined by the Author, and having also occurred in very shallow water, whereas the specimen met with on the North-Atlantic Expedition came up from a very considerable depth, there is good reason to question the correctness of Dr. Hoek's determination.

Podocerus assimilis, G. O. Sars, p. 255.

A solitary example of this species was taken by Mr. Schneider, off the coast of Finmark (Tromsø).

Podocerus brevicornis, G. O. Sars, p. 207.

Recorded by Dr. Hoek, as found in the Barents' Sea, at one Station only; depth 160 fathoms.

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Synidotea	116.
bicuspida	116.
incisa	116.
nodulosa	117.
Sylon	253.
Hymenodoræ	253.
Syrrhoidæ	182.
Tanaidæ	73.
Tanais abbreviatus	74.
islandicus	79.
longiremis	79.
Vøringii	74.
Thoracica	241.
Tritropis	194.
appendiculata	194.
Tryphosa	151.
pusilla	151.
Typhlotanais	82.
cornutus	83.
penicillatus	83.
Unciola	212.
petalocera	212.
planipes	213.
Urothoë	164.
abbreviata	164.
Valvifera	96.
Ægidæ	85.
Ægina	228.
echinata	228.
spinifera	228.
spinosissima	225, 228.

PLANCHER.

PLATES.


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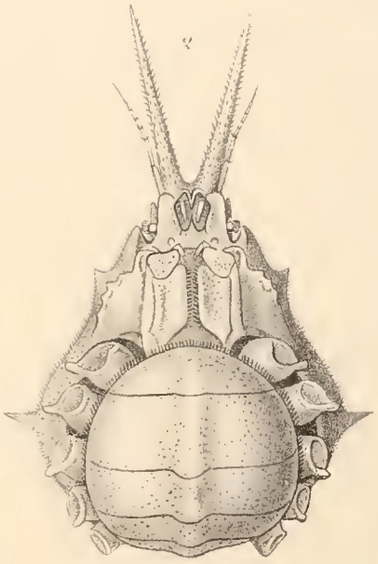
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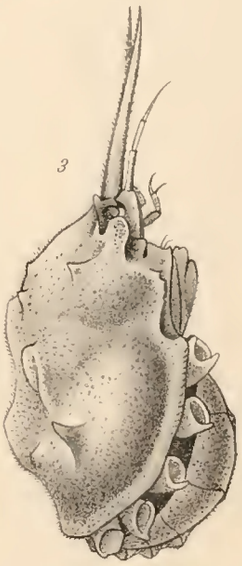
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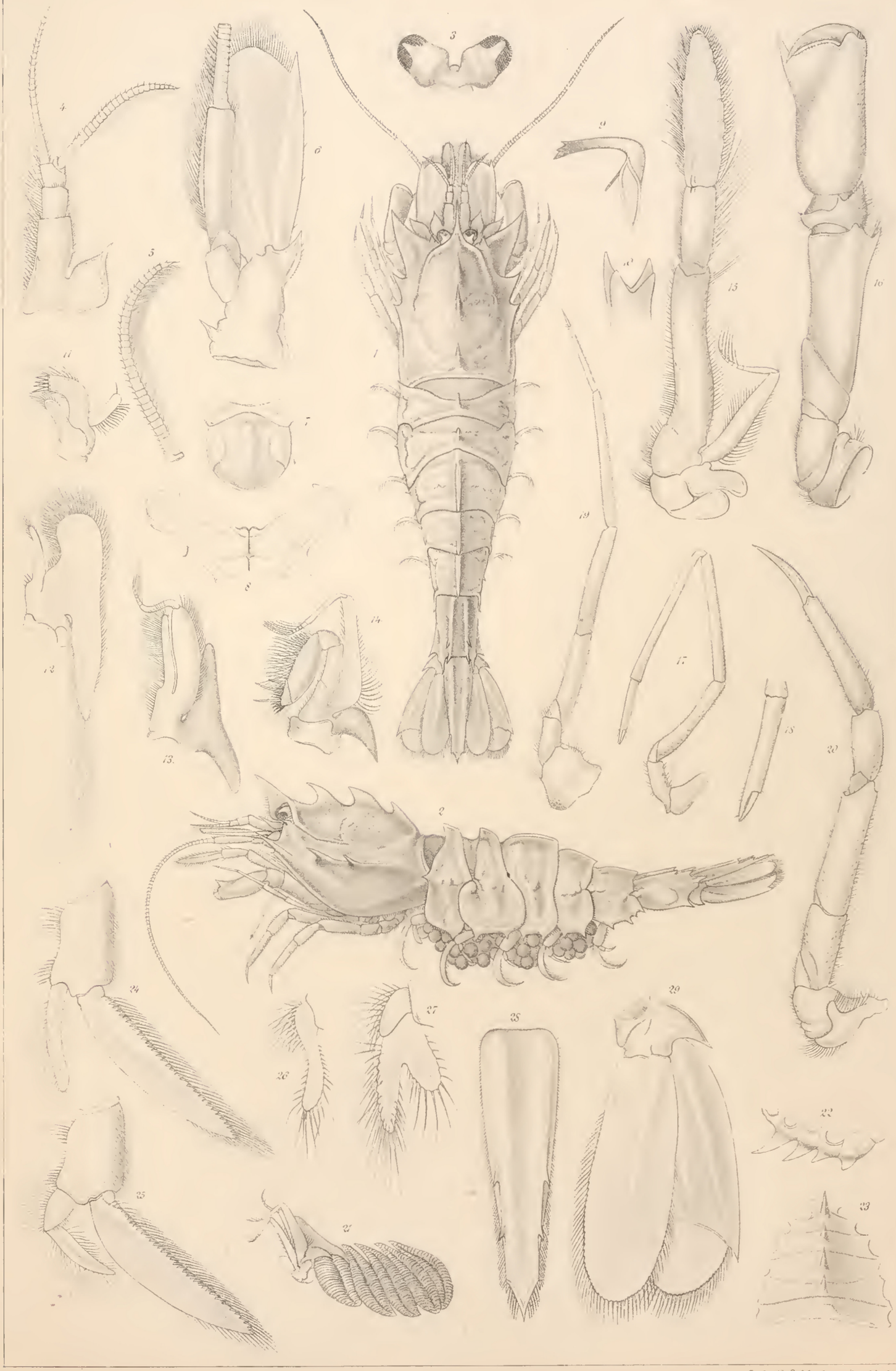
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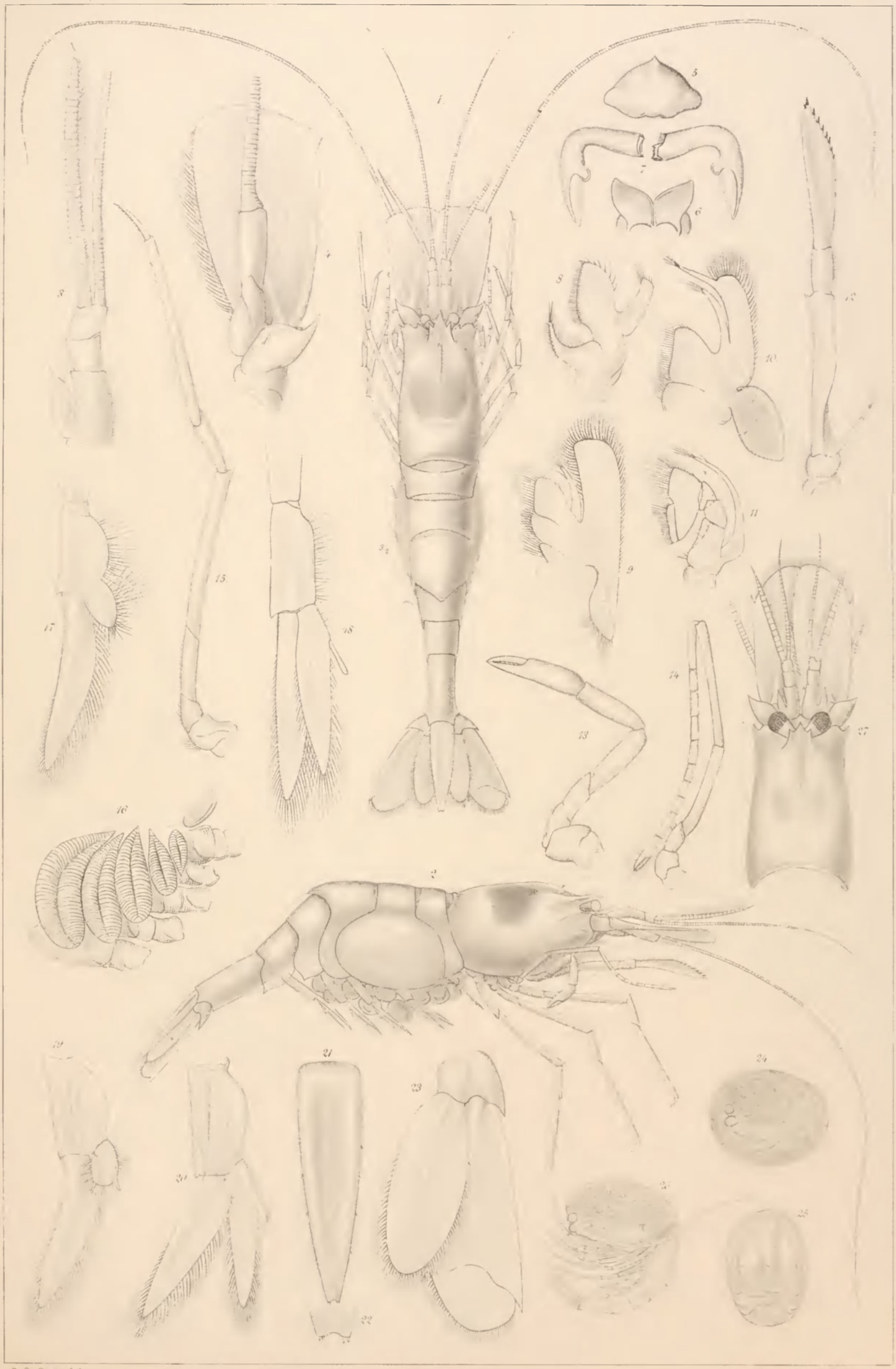

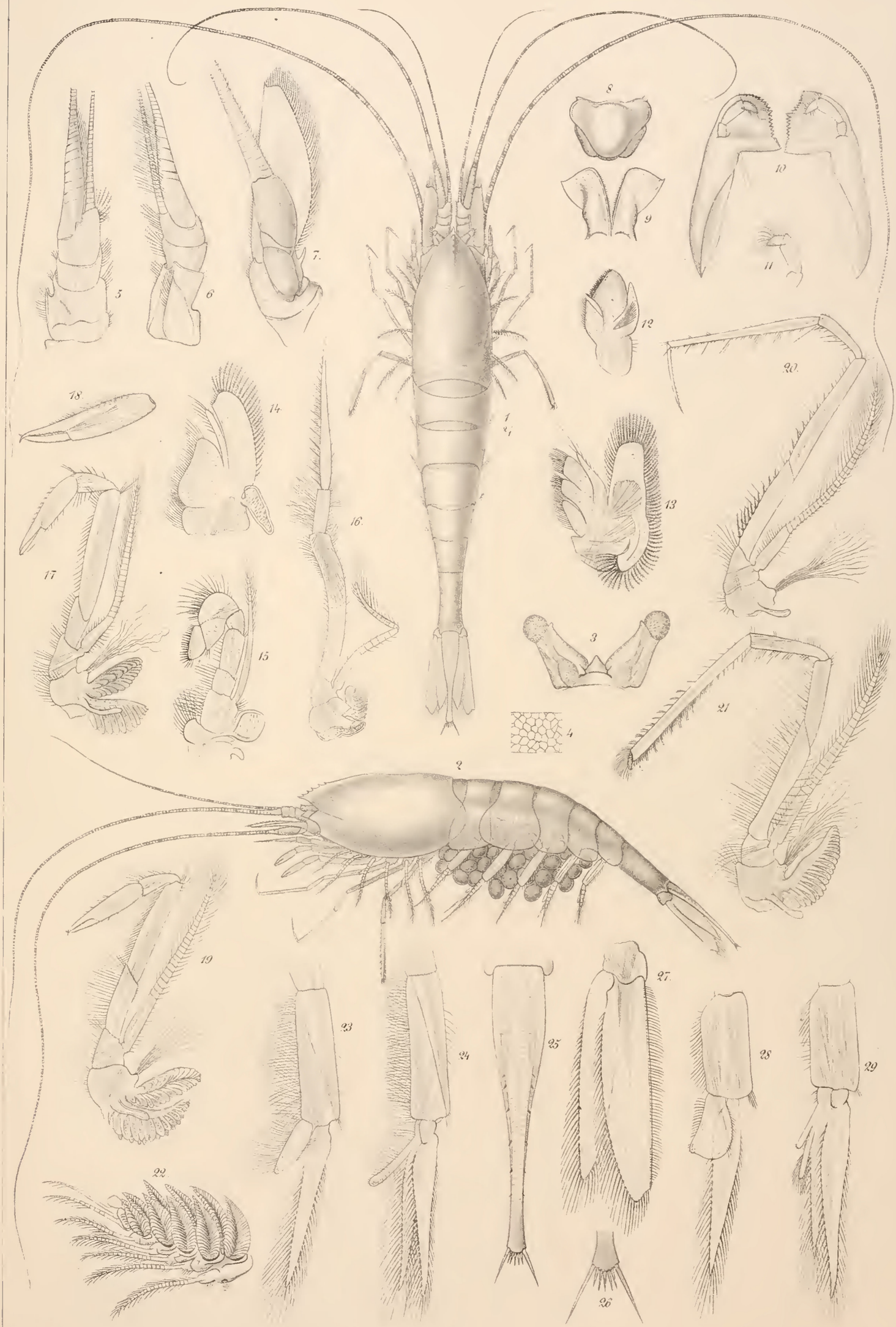
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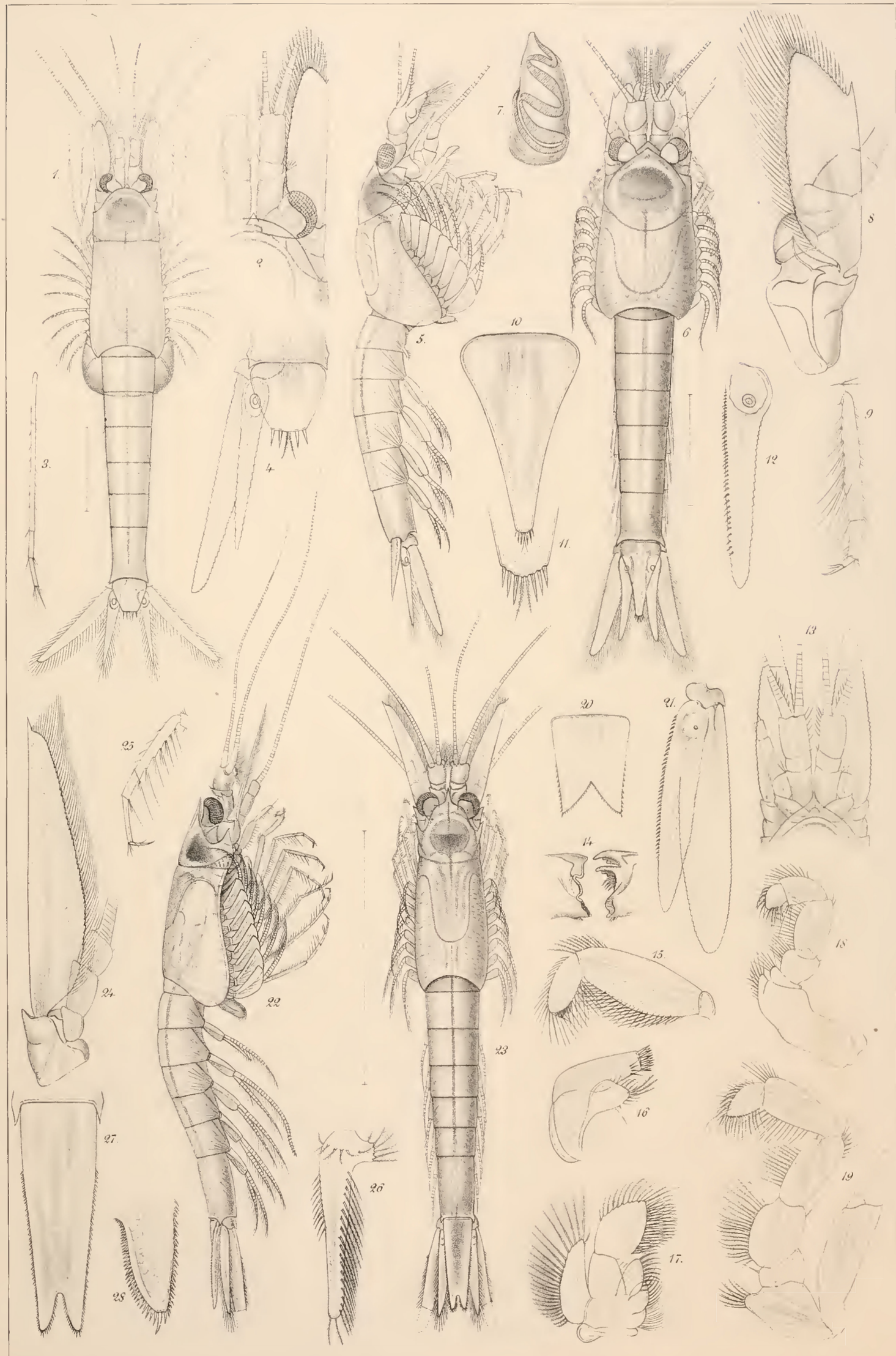
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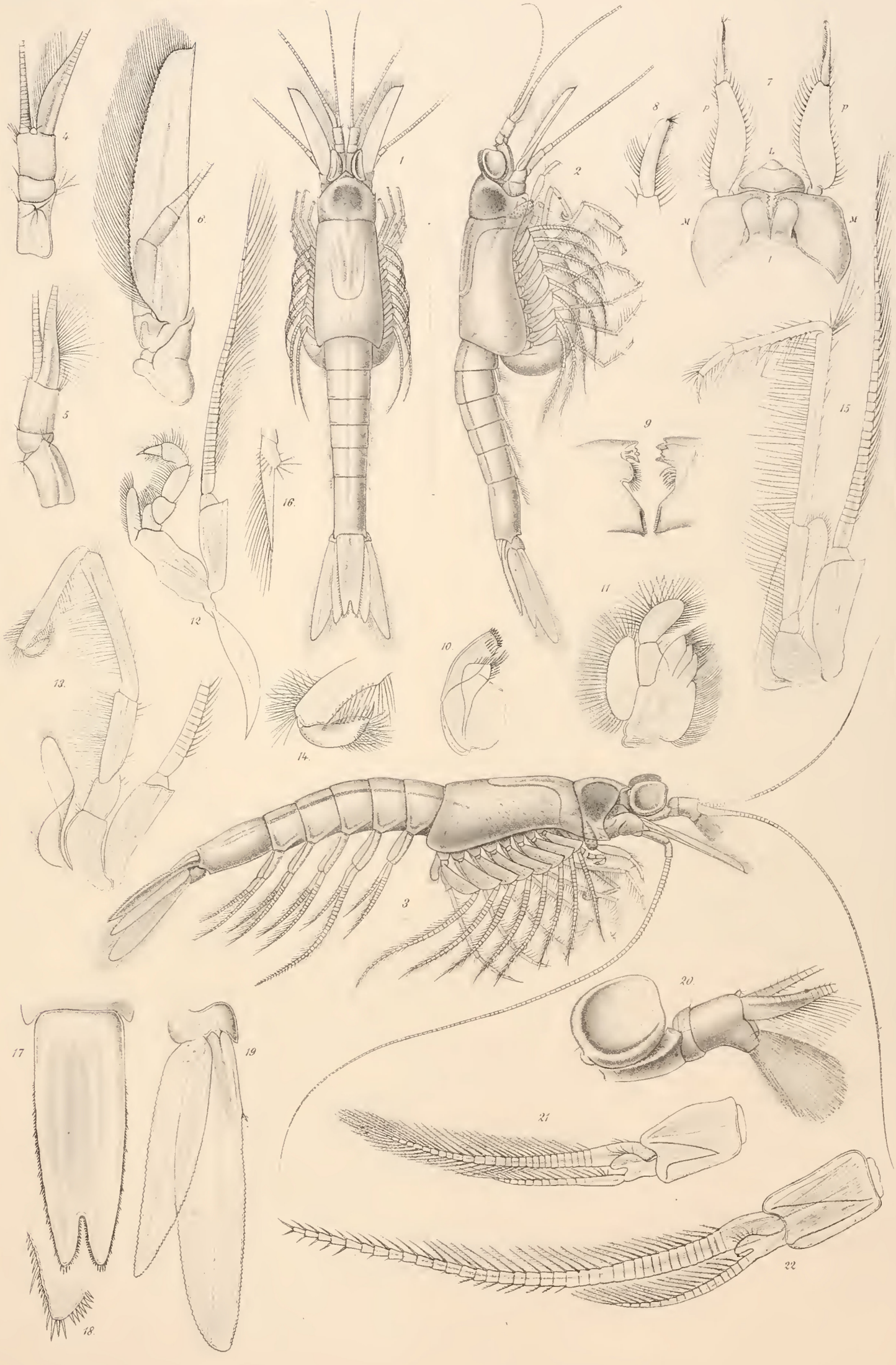
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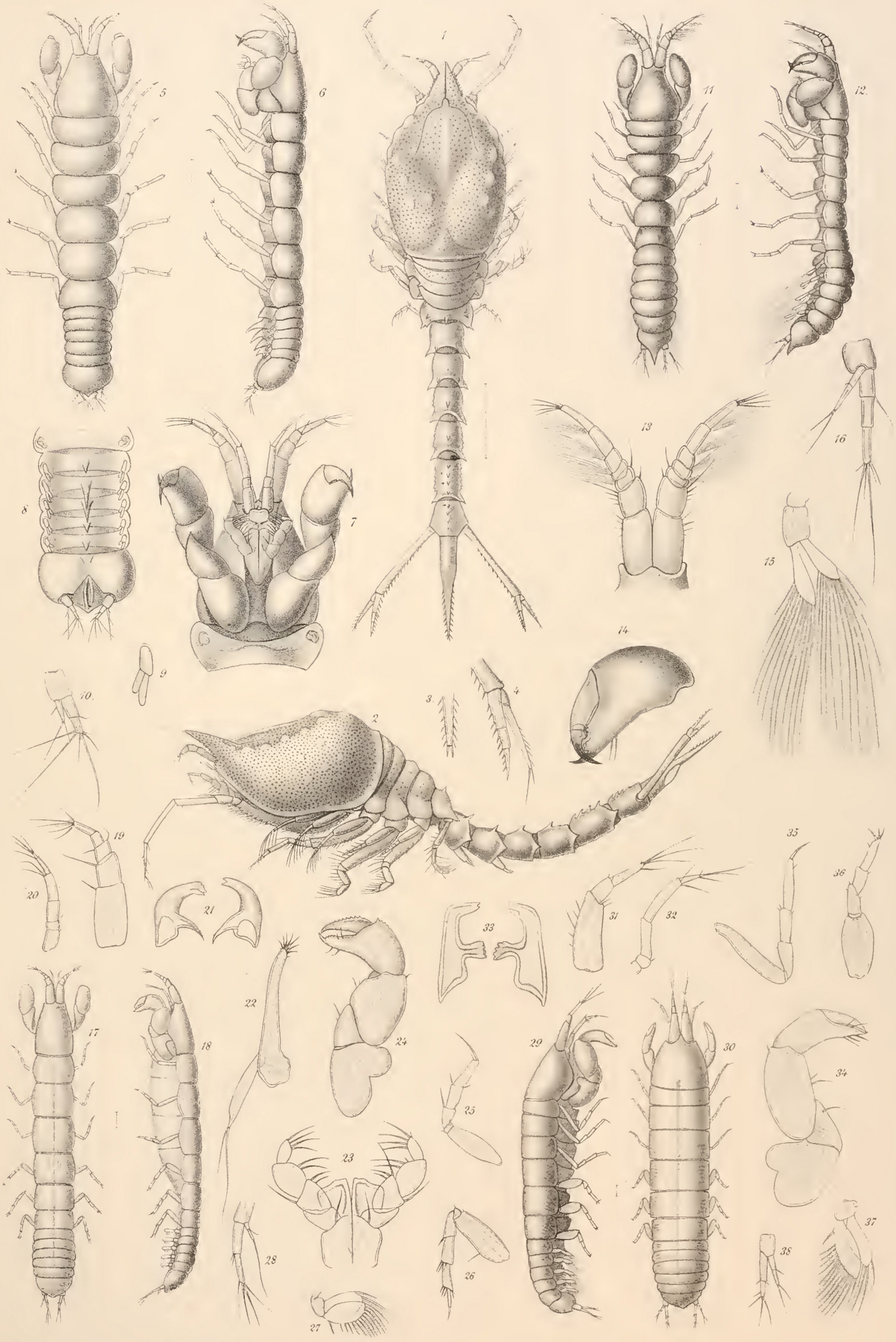
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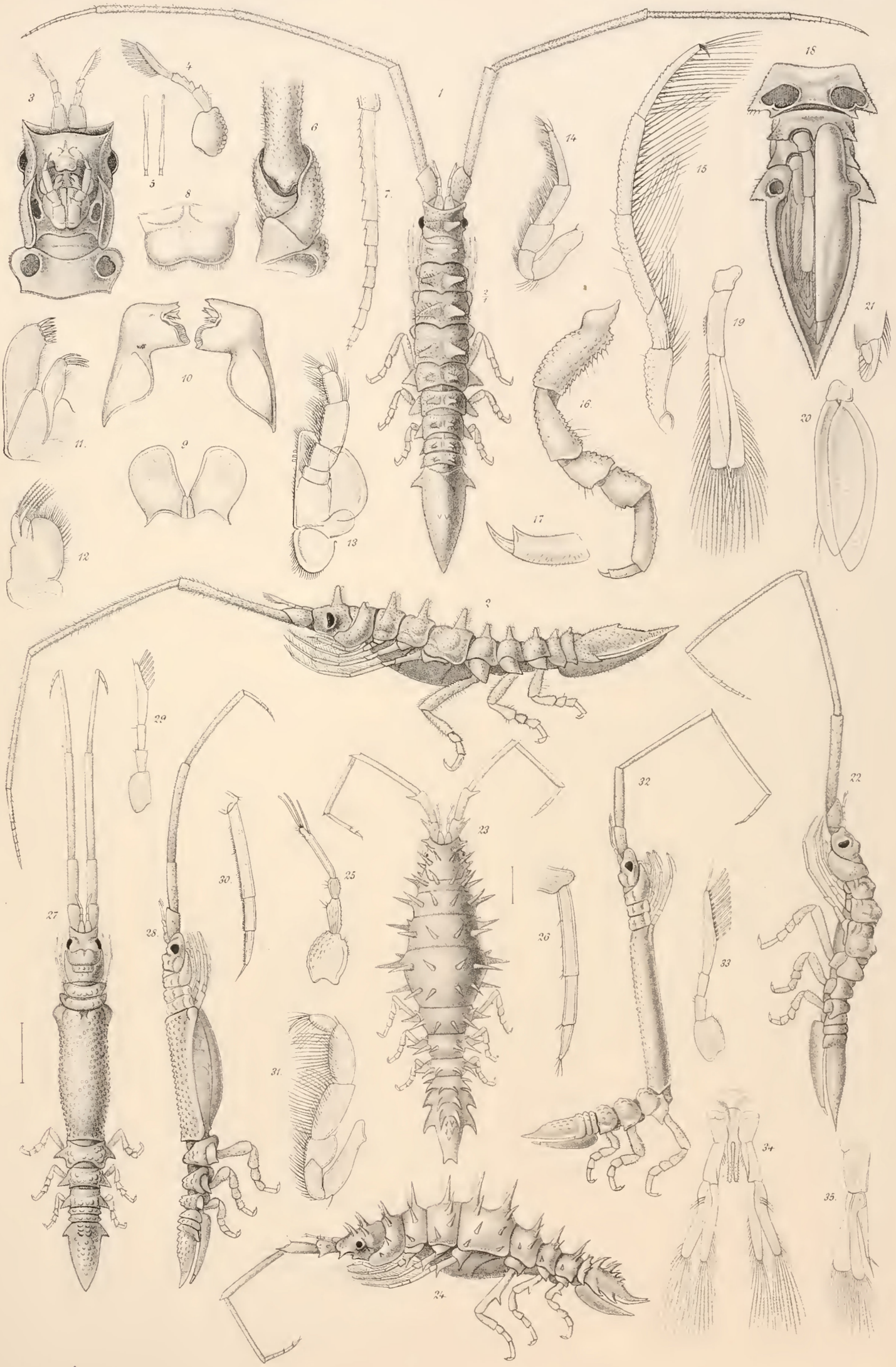
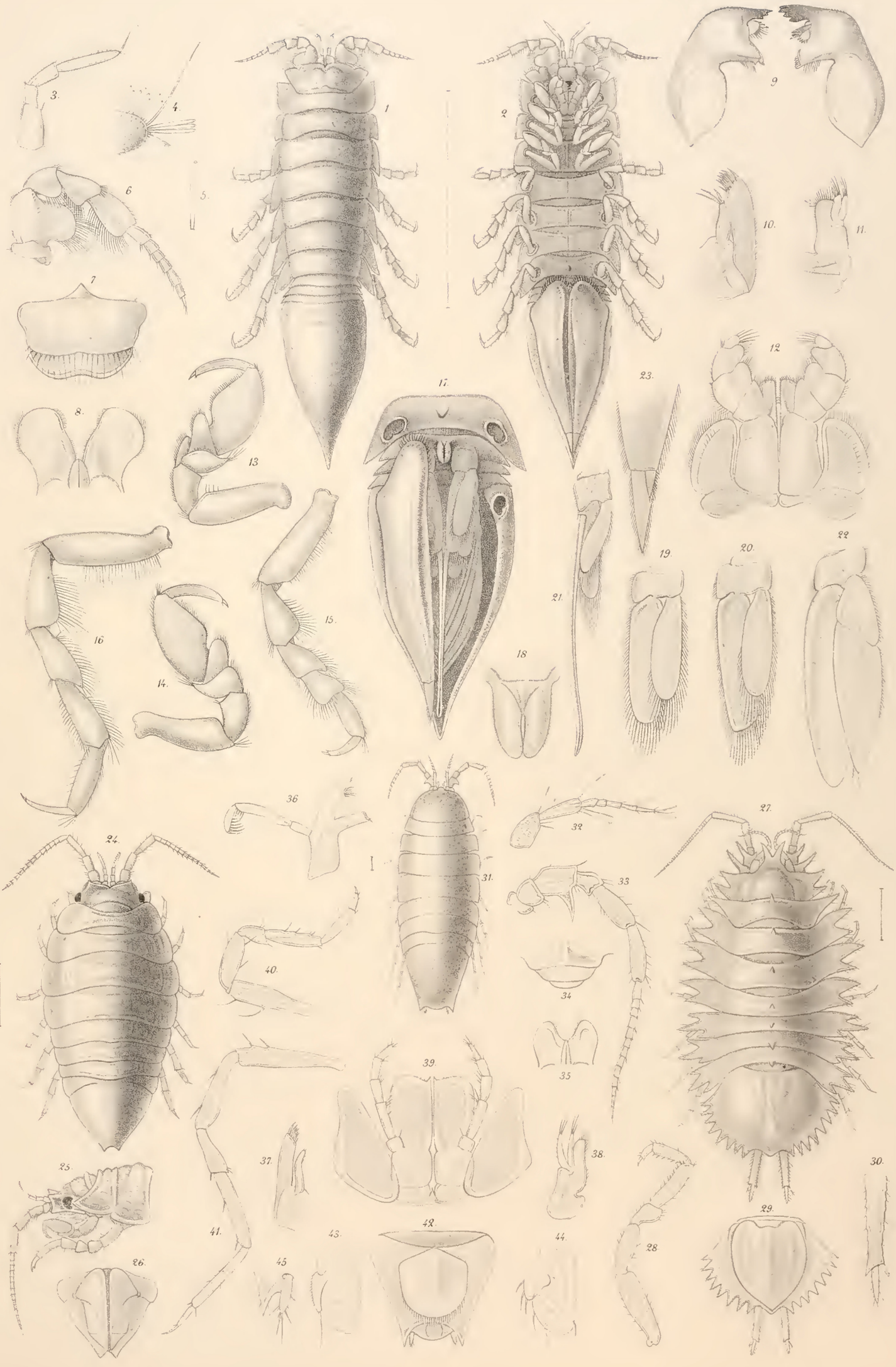


C. O. Sars del

Lith. W Schlachter, Stockholm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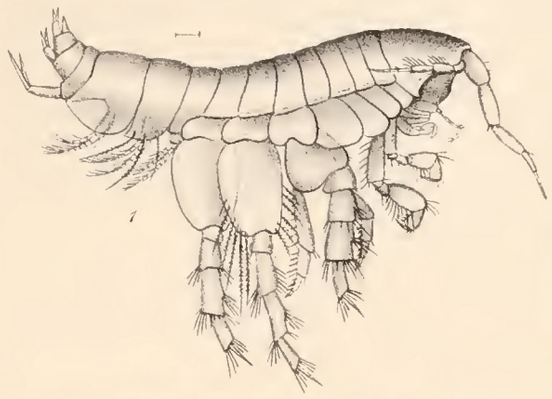
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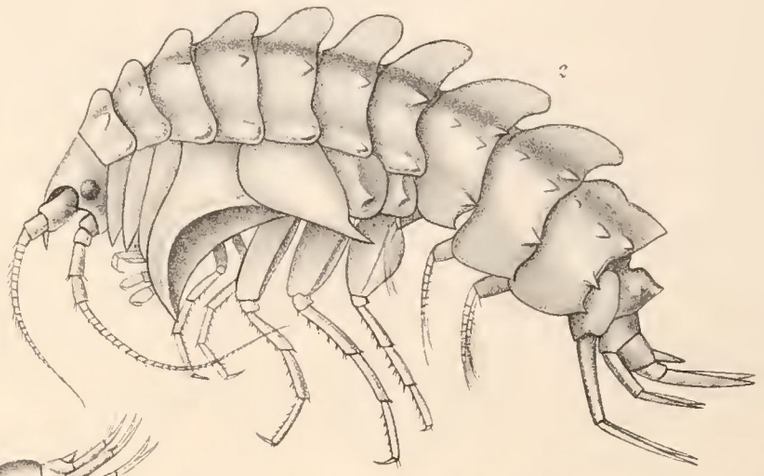
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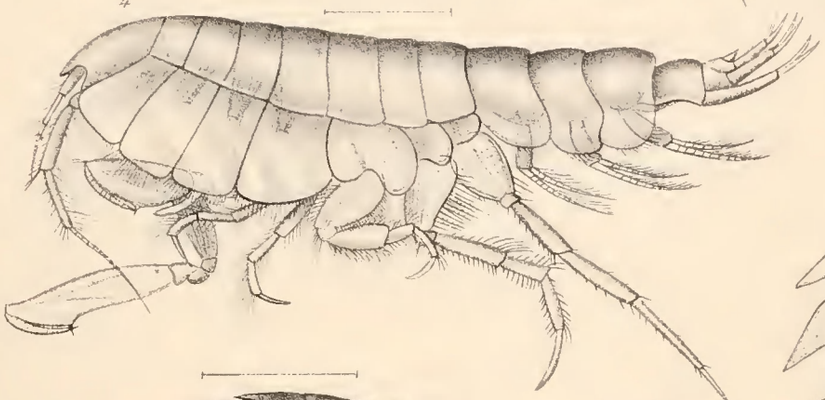
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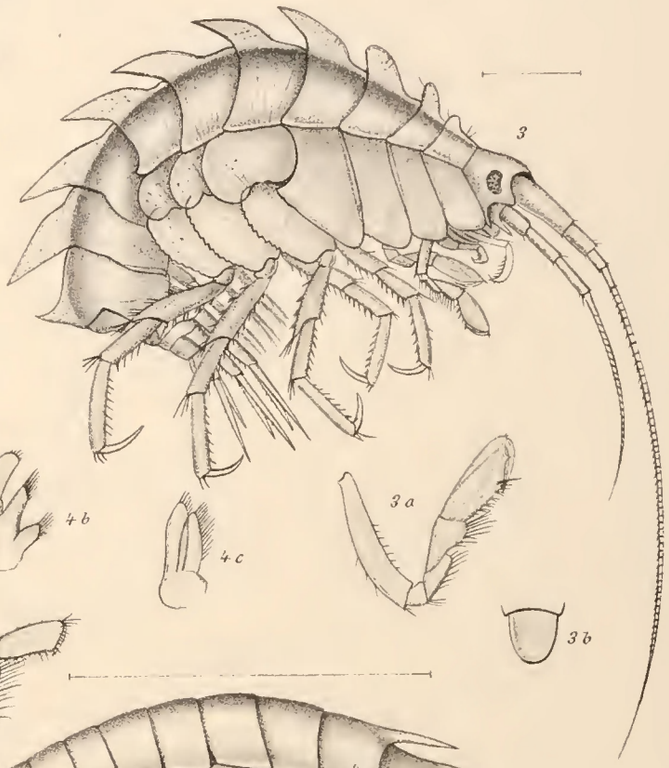
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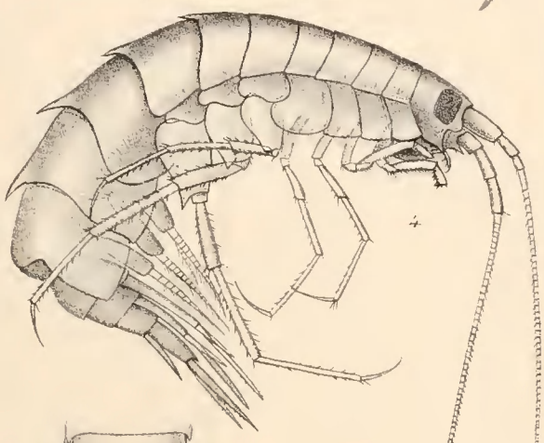
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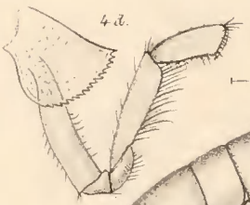
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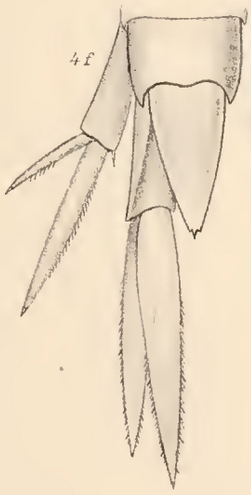
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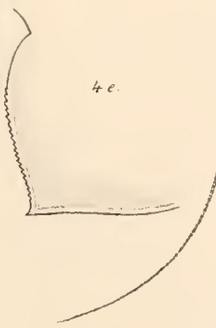
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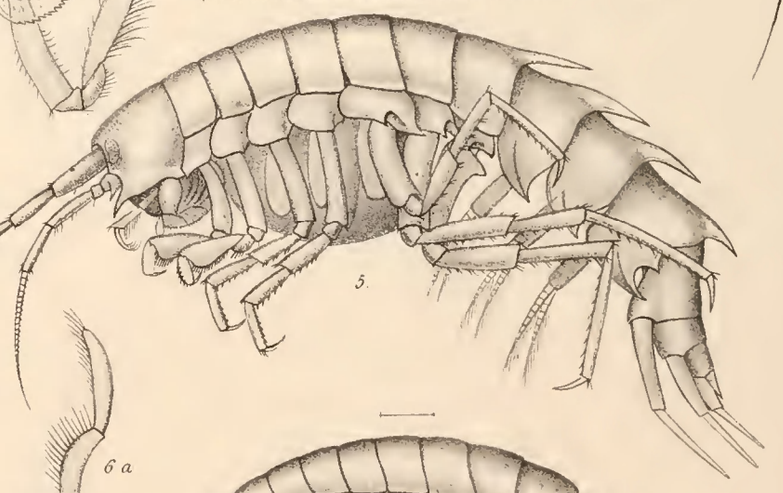
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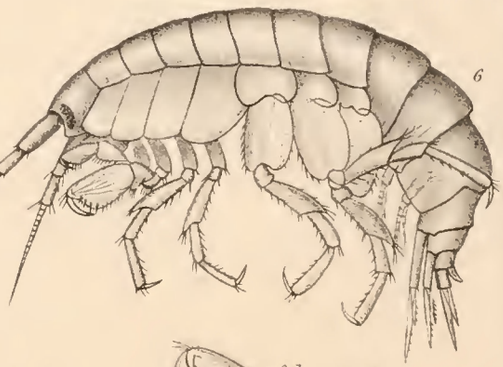
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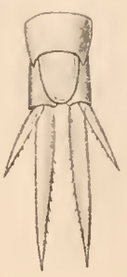
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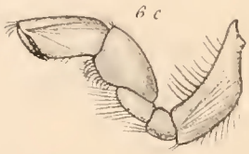
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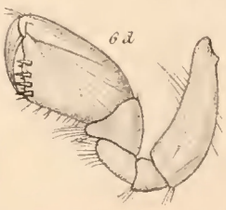
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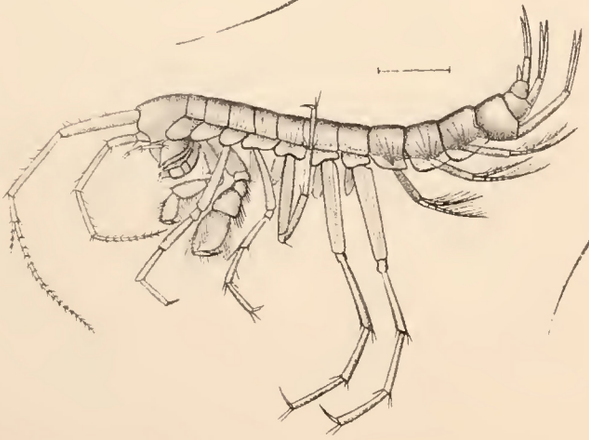


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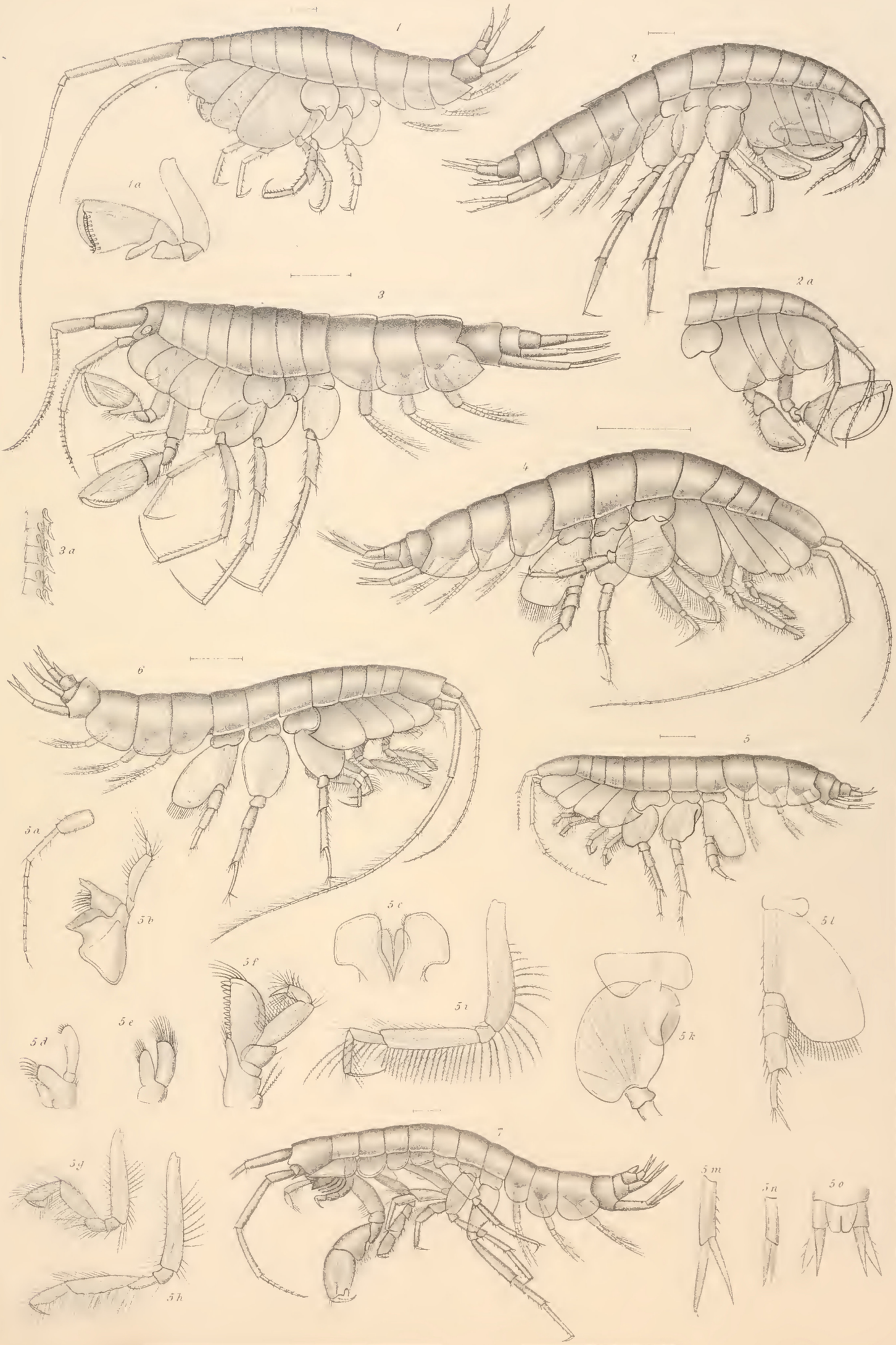
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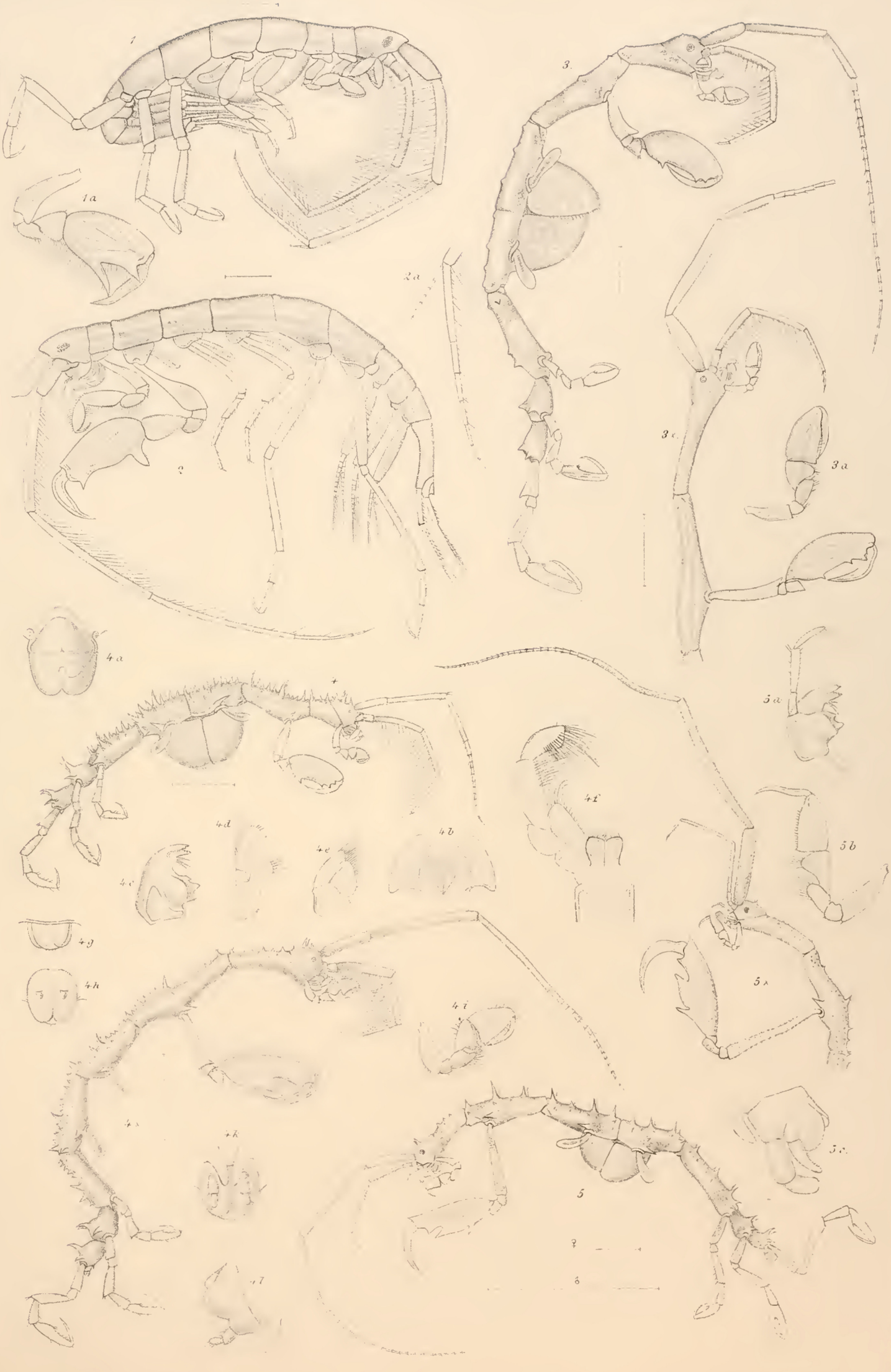
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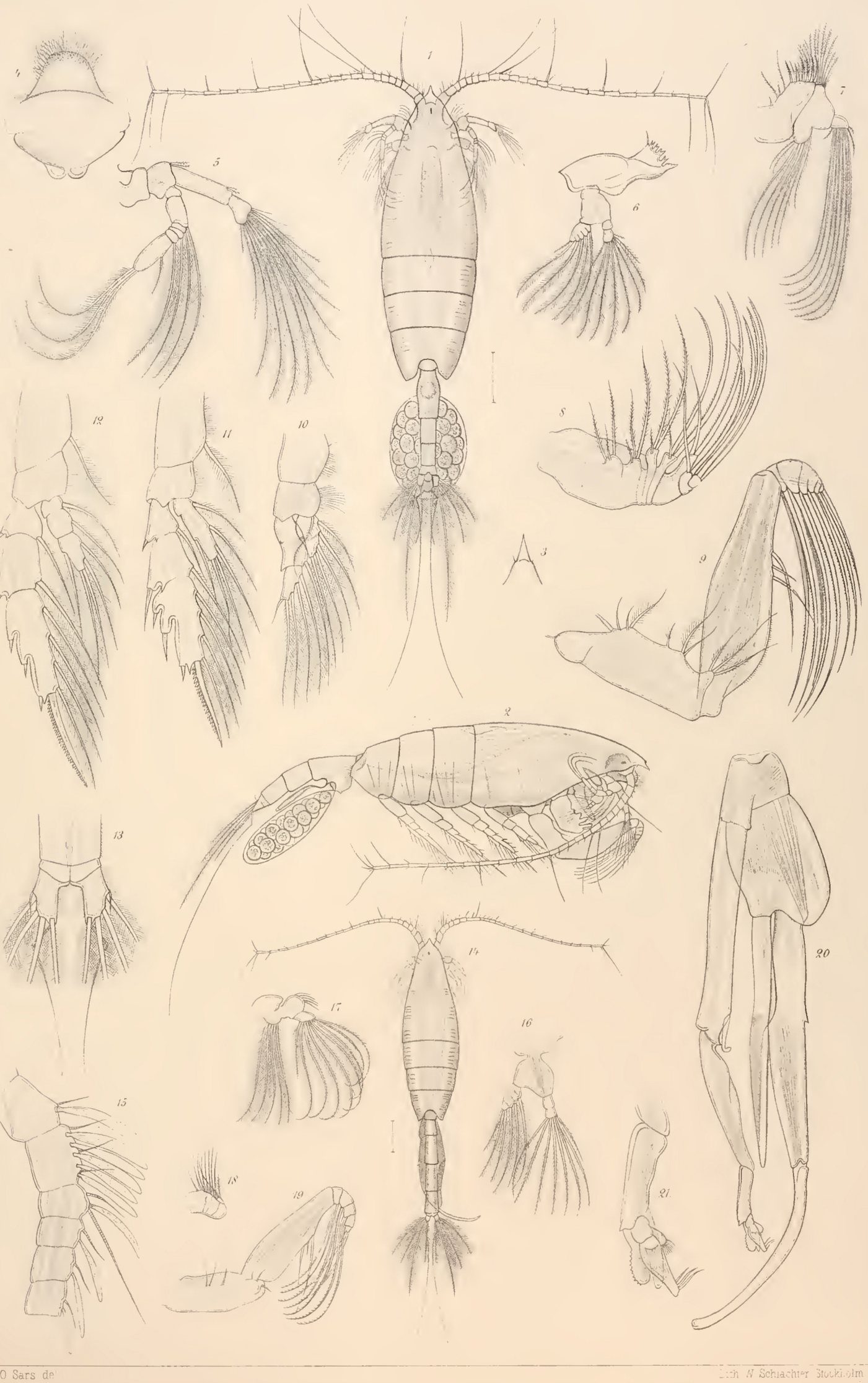
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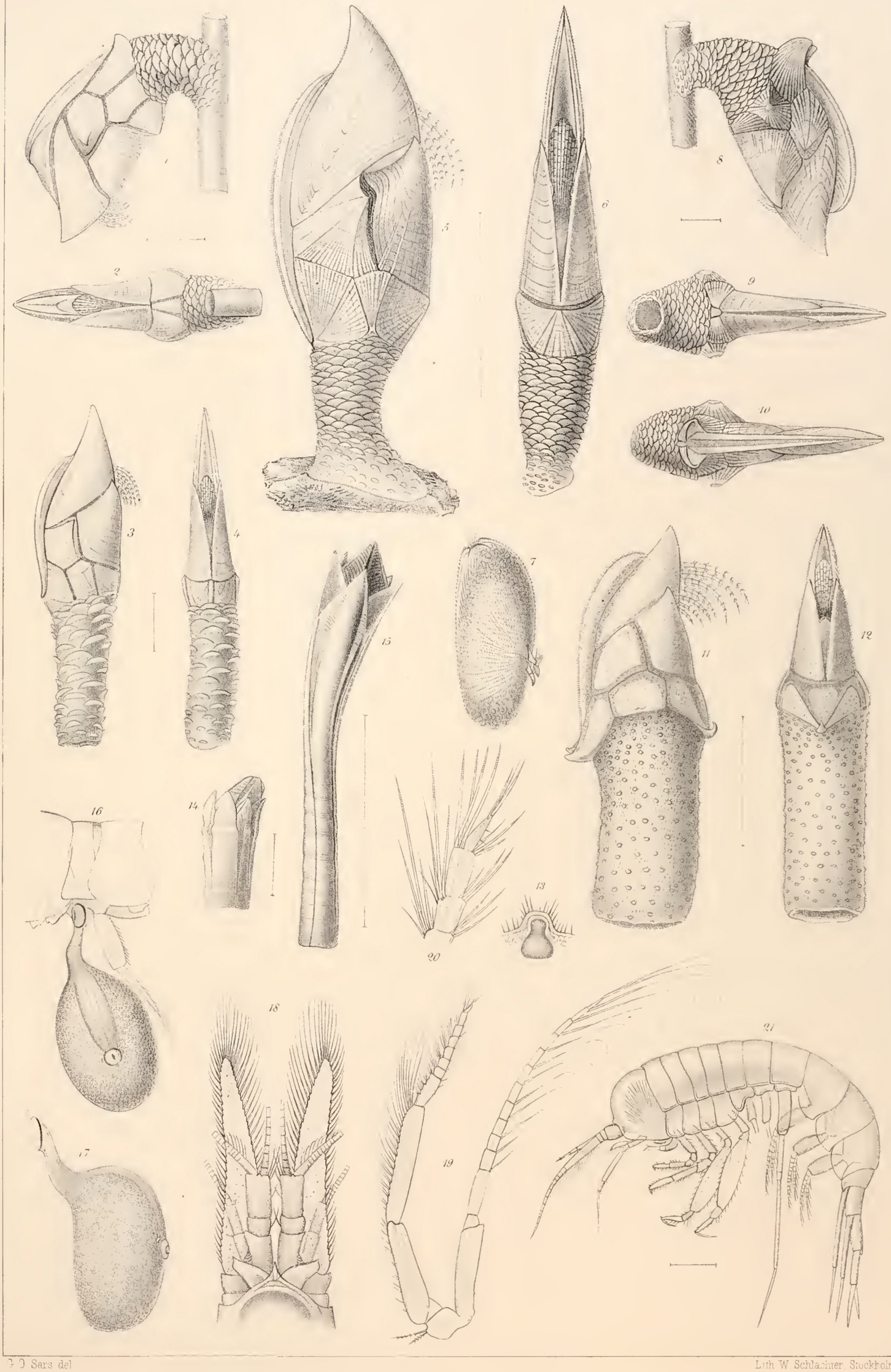
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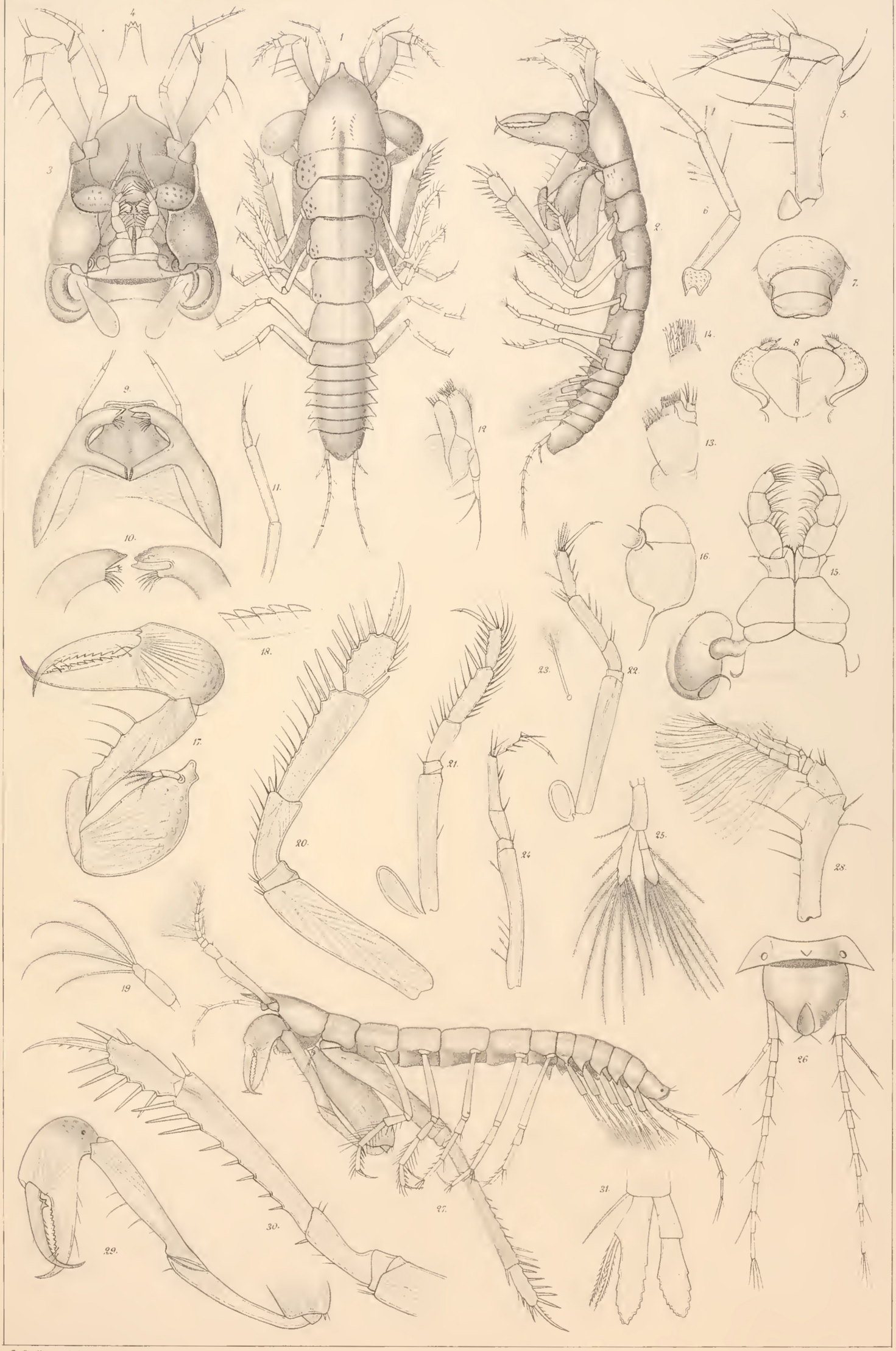
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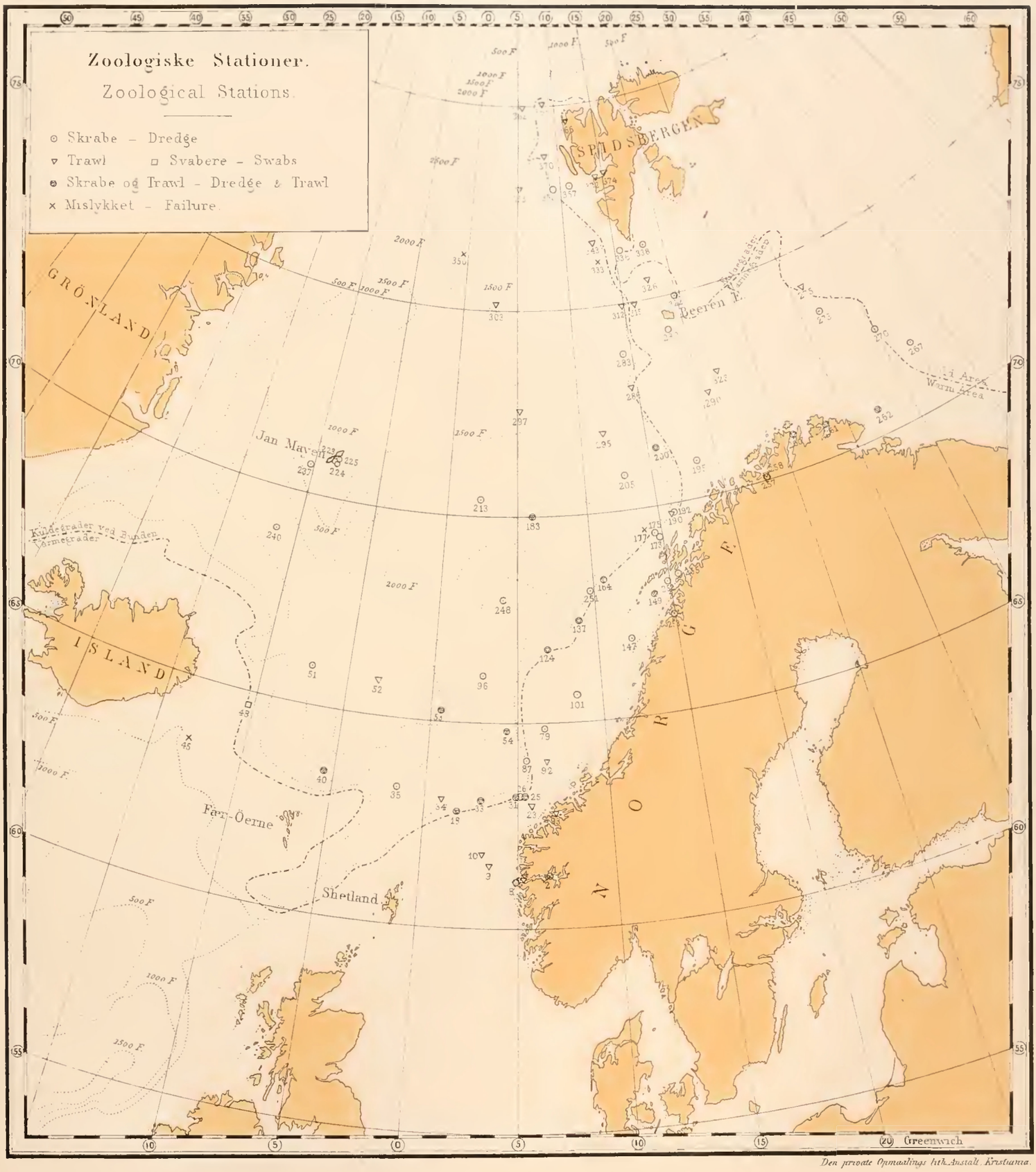
Norske Nordhavs-Expedition.



Den private Opmaalings lith. Anstalt. Kristiania.